Australian Government

National Water Commission

Linking Science to Water Policy

Ken Matthews

Chair and CEO

National Water Commission

20 November 2008

Australian Government
National Water Commission

Outline

1. Why aren't scientists heard as much as they'd like to be?

2. Can't we just "take the politics out of water?"

3. A National Water Science Strategy.

4. Science in water planning.

5. Water science in the future.

Science in Australia

- As a natural resource-based economy Australia relies more than most developed economies on the sciences in policy formulation

- The public policy agenda in Australia is relatively rich in science issues (NRM and environmental)

- It is the disciplines of science and economics that have most to say about NRM.

- Uniquely to Australia, agencies have emerged to bridge the science-policy gap (e.g., BRS; LWA; CSIRO)

Are Scientists being listened to?

- Some policy initiated by science concerns – climate change, salinity, ecosystem degradation

- Sometimes science is caught short – e.g., predicting ecosystem responses

- Australia probably ahead of the game with integrated science

- Social sciences rising fast

- But science is still not fully utilized

So why aren't scientists heard more?

- ◆ Science advice delivered at the wrong time
- ◆ Some scientists don't understand the policy process
- ◆ Not built in to advisory processes
- ◆ Lack of clout among science institutions
- ◆ "Chicken Little" or excessively cautious
- ◆ Waiting for better knowledge when decisions must be made now
- ◆ Conflicting science opinions
- ◆ Scientists recruited as "hired guns"
- ◆ Too black and white? / impenetrable language etc

But also

… not included by policy makers. Scientists and policy makers need each other.

… and science is increasingly sought for retrospective accountability reasons, not only for prospective policy purposes

Can't we "take the politics out of water"?

🔸 Science, data and knowledge are essential

🔸 But ultimately these are society's (i.e., political) choices

 – *Which environmental assets should be nurtured?*

 – *How big a redgum forest?*

 – *How green a wetland?*

 – *How often a hatching or nesting event?*

 – *How resilient do we want the ecosystem?*

 – *What risk will be acceptable?*

> *Hence, decisions should be science-based but not science-determined. Choices, judgements and trade-offs will always be required.*

Water and Science

- Water is often a location-specific issue
  - unlike say IT or nuclear physics
- Examples:
  - the specific hydrology of Australian rivers or
  - the unique ecology of the Australian environment
  - forecasting regional water availability when the historical climate record is less relevant
- These unique-to-Australia water science challenges are most likely to be solved by Australian scientists
  - No-one else is likely to give them priority

A National Water Science Strategy

- ● …even so, Australia lacks a national water science strategy

- ● and certainly lacks a policy-led science strategy
  - national water policy priorities should and could lead national water science priorities

- ● Australian water science effort is non-strategic, fragmented, opportunistic
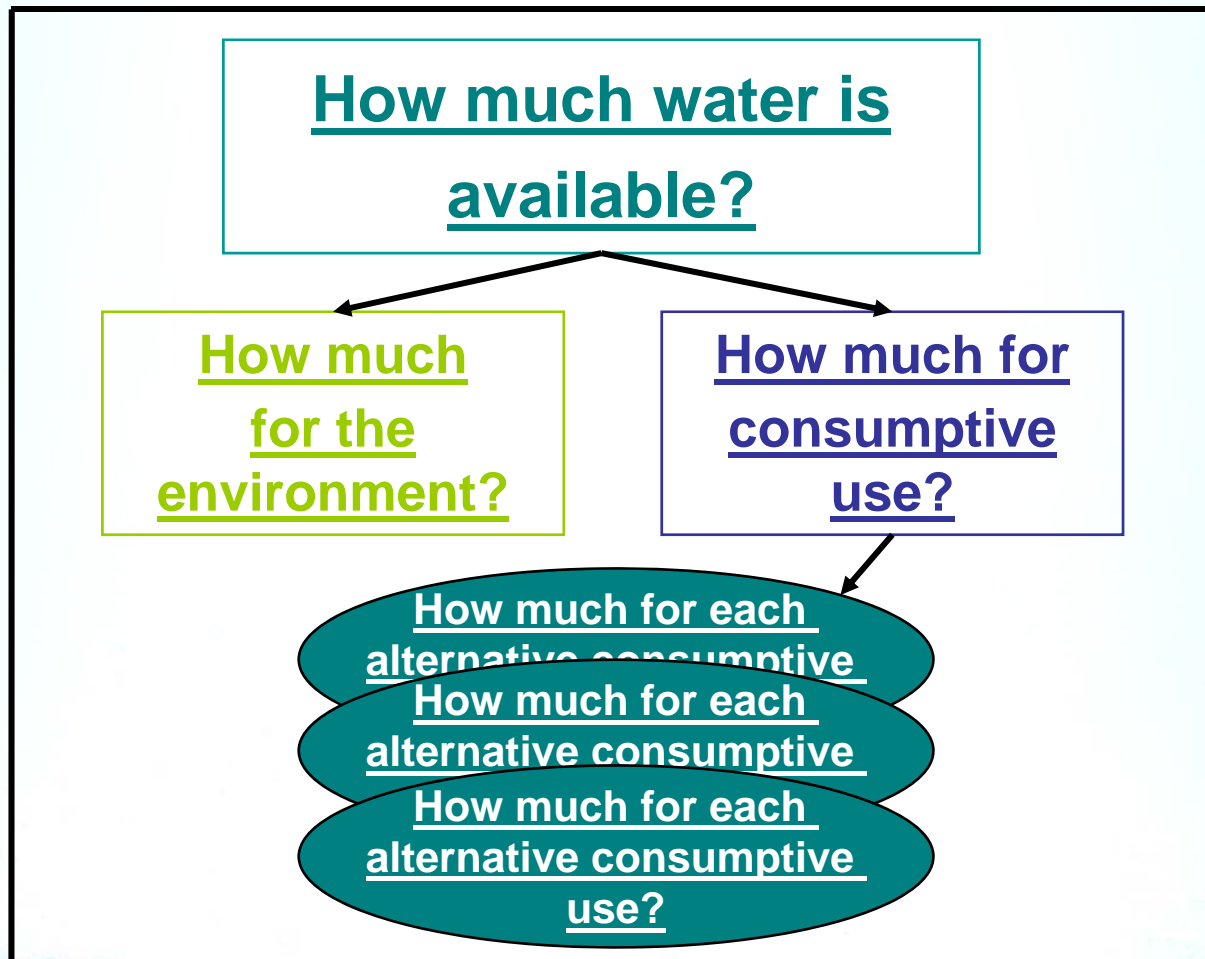 - and consequently less effective than it could be.

What might a National Science Strategy Embrace?

1. National research objectives and priorities
2. Water science research infrastructure needs
3. Resource allocation guidance and funding responsibilities
4. Key Result Areas and timeframes for each
5. Risks and constraints
6. Roles & responsibilities of science players
7. Collaborative opportunities between sciences and with policy makers
8. Dissemination, adoption and innovation pathways
9. Guidance on public comment and policy input by the science community
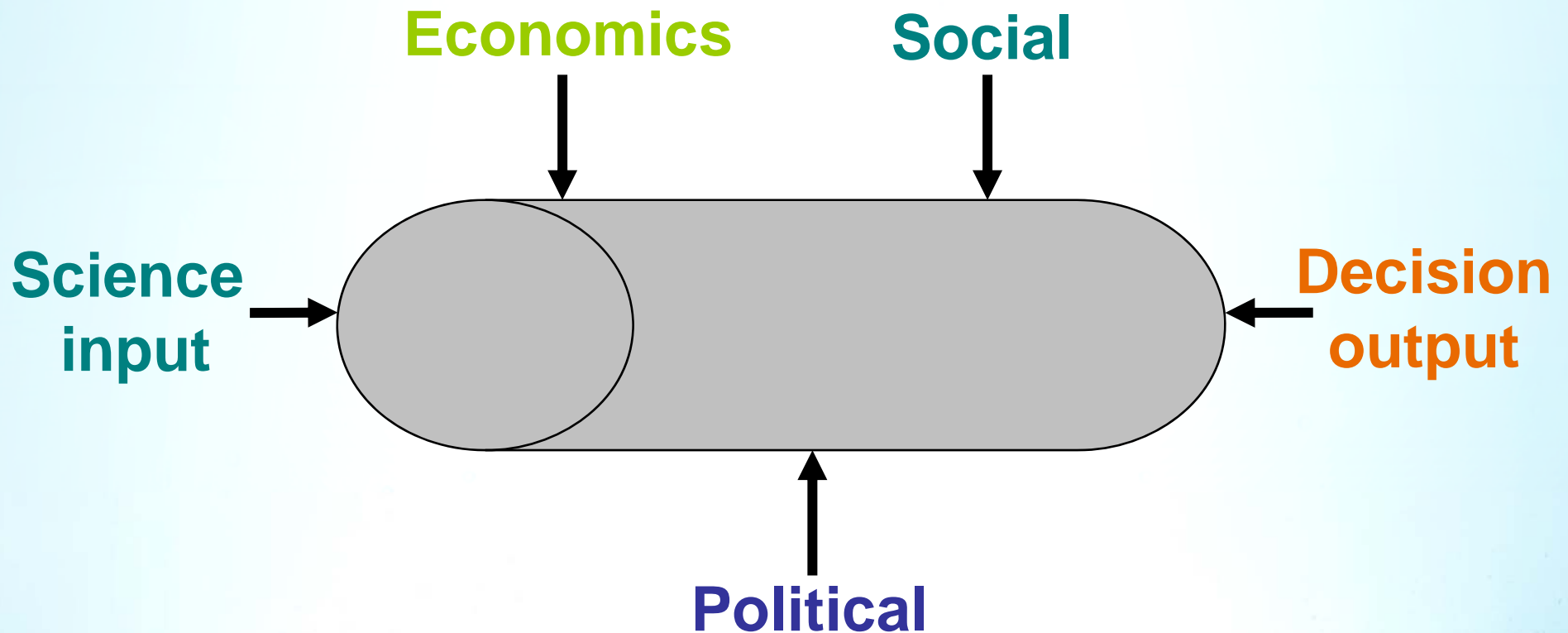10. Future directions
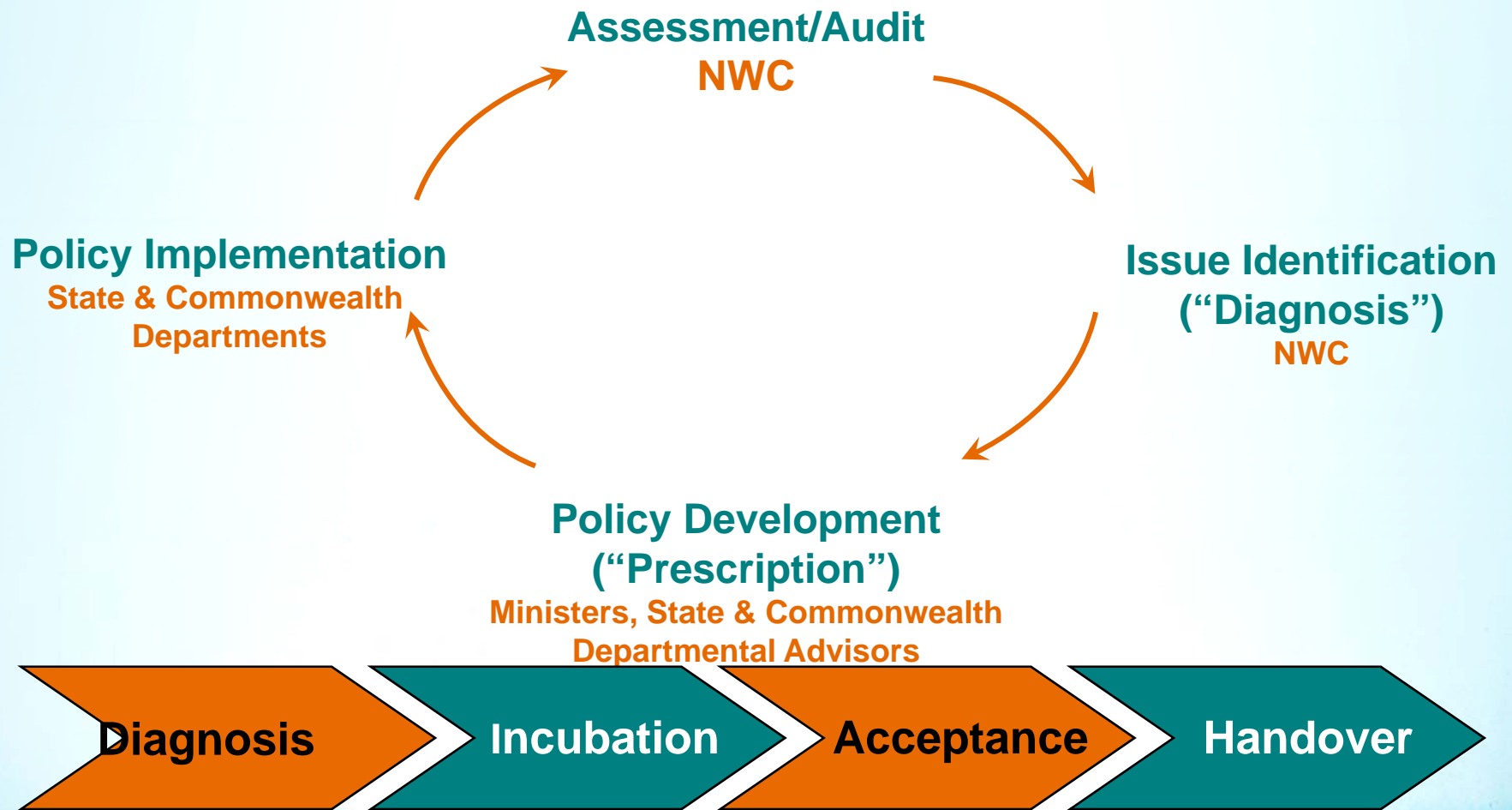
The Central Issue in Water in Australia

How much water is available?

How much for the environment?

How much for consumptive use?

How much for each alternative consumptive

How much for each alternative consumptive

How much for each alternative consumptive use?

We need water science for ...

1. Describing, characterising & modelling the water resource
2. Advising on sharing the water resource
3. Advising on how to sustain the riverine environment
4. Avoiding future environmental mistakes
5. Identifying risks to the water resource in terms of magnitude, characteristics and its functioning
6. Providing the science to underpin water trading
7. Assisting with clever and more efficient use of water

Science & water management

- … input to water <u>policy</u> is not the only objective
- input to water <u>management</u> is just as vital

Australian Government

National Water Commission

Science   Science   Science   Science   Science   Science

Identify water availability → **Identify Environmental assets** → **Design the Environmental watering regime** →

Identify:
1. **Consumptive needs**
2. **Environmental needs**
3. **Socio-cultural needs and issues**

→ **Establish The consumptive pool… …and the environmental (non-consumptive) share** → **Implement and manage the water sharing plan** → **Monitor water availability & ecological impacts** → **Adaptively manage**

Water Science in the Future

- Environmental assets will be identified; watering regimes will be designed to nurture them

- Unique-to-Australia science challenges will be tackled by unique-to-Australia research

- Science will input to both water policy and water management

- Best available science will be utilised
  - & future science advances adopted through adaptive management
  - growing emphasis on integration across physical, biological and social sciences

- Trade-offs and political choices will be made transparent

- Water science will be guided by a national water science strategy