

**LESSONS LEARNED FROM
A HISTORICAL
PERSPECTIVE ON THE USE
AND NEED FOR SEASONAL
CLIMATE FORECASTS**

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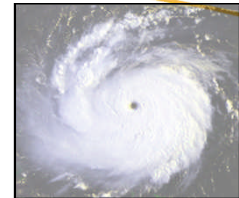
“I think it’s important we emphasise that a single model plot isn’t the same as a climate service...”

Our vision is that by developing end-to-end impact prediction services, operating on S2D timescales, and clearly demonstrating their value in informing decision-making, we will stimulate a market for these new tools.

Actionable climate knowledge – from analysis to synthesis

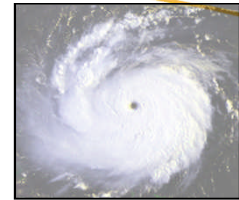
Experiences from 20 years of applied
climate risk research in Australia

**Holger Meinke, Rohan Nelson,
Roger Stone, Selvaraju, Aline Maia,
Walter Baethgen**



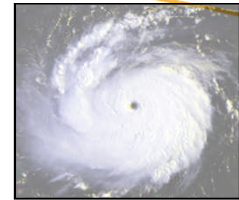
First key lesson from several decades of experience

- ❑ Climate knowledge needs to deliver **true societal benefits**.
- ❑ We need to expand the systems boundaries and fully explore the scientific and socio-economic tensions and interactions - **the system is bigger than most of us thought**.
- ❑ We need to include the socio-economic dimensions important to rural communities and policy makers, but **without abandoning science**.
- ❑ We need to achieve **true integration** of disciplinary knowledge, rather than focusing on certain aspects of the system at the exclusion of others.

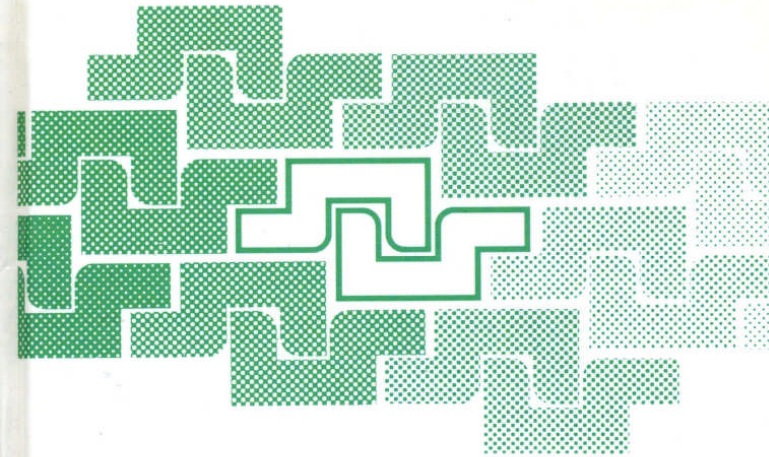


Second key lesson from several decades of experience

- ❑ True integration without abandoning science takes **real resourcing**.
- ❑ The **capacity to think and act beyond disciplinary boundaries is rare** and difficult to nurture in the established institutional context.
- ❑ Existing institutional arrangements often act as a disincentive to true integration.
- ❑ **Strong leadership** is required to induce cultural change in established institutional arrangements.



To organise pilot studies to demonstrate the value of seasonal forecasts



Seasonal Climate: Forecasting and Managing Risk

Edited by

Alberto Troccoli, Mike Harrison,
David L.T. Anderson, Simon J. Mason

NATO Science Series

IV. Earth and Environmental Sciences – Vol. 82

Factor	Scientist's Perspective	Water Manager's Perspective
Identifying a critical issue	Based on a broad understanding of the nature of water management	Based on experience of a particular system
Time frame	Variable	Immediate (operations) Long-term (infrastructure)
Spatial resolution	Defined by data availability or funding	Defined by institutional boundaries or authorities
Goals	Prediction Explanation Understanding of natural system	Optimisation of multiple conditions and minimisation of risk
Basis for decisions	Generalising multiple facts and observations Use of scientific procedures and methods Availability of research funding Disciplinary perspective	Tradition Procedure Professional judgement Training Economics Politics Job risks
Expectation	Understanding Prediction On-going improvement Statistical significance of results Innovations in method/theory	Accuracy of information Appropriate methodology Save money and time Protect the public Project jobs, agendas or institutions
Product characteristics	Complex Scientifically defensible	As simple as possible without losing accuracy Importance of context
Frame	Physical (atmospheric, hydrologic, etc.) conditions as drivers Dependent on scientific discipline	Safety and well-being Profit Consistency with institutional culture, policy, etc.
Nature of use	Conceptual	Applied

Benefit, or value, is not achieved through forecast quality alone ... delivery covers also the information delivered, its content and the manner in which it is presented ... coping with unavoidable uncertainty or 'risk' demands more complex thought processes [than required with deterministic forecasts] and a greater degree of prudence in order to cope with what might be seen in hindsight as a 'wrong' decision

Regrettably there continues to be undue reliance on scores without recognition of the limited information that such scores can communicate ...

What has been progressively recognized over the last few years are the outstanding issues of delivering services ... central to achieving value is both the decision process itself and the delivery of information appropriate to each decision

... however it could be argued that “effective and appropriate communication” is the most fundamental aspect of all ... it is in regards to communication that the most significant advances may be made in the next few years

Seamless forecasting systems promise as yet little information that is not already available in the separate formats ... so the paradigm remains unfulfilled, viz. that of a 'seamless forecasting system' linked into a '***seamless decision making system***', with clear challenges remaining for both sides of the divide

... in reality ... the journey has barely started with decision making still mostly compartmentalised on the supply side by practical distinctions between weather and climate forecasting activities, and on the demand side by a host of factors that have little to do with weather and/or climate

Suggested Lessons for EUPORIAS

- View the objective as a provision (not a delivery) of *services* to supply information essential to *decision processes*, and not as a delivery of forecasts
- Recognise that this is not fundamentally a scientific exercise but a societal one in which communication is central
- Engage the user throughout to ensure that *all* aspects of the services are to his/her understanding and needs, while maintaining scientific validity
- Indeed, give leadership to the user, not the scientist
- Eliminate provider institutional considerations