EXCELLENCE IN RESEARCH FOR AUSTRALIA (ERA) INITIATIVE: CONSULTATION PAPER

Submission Cover Page

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Does the organisation consent to having its submission identified in a report on the outcomes of this submission process to be prepared by the ARC, which could be made publicly available on the ARC's website? (Y/N)	Y

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Issues for Response

The ARC is seeking feedback from the sector on the issues raised in the Consultation Paper. These issues are highlighted in the pink boxes throughout the Consultation Paper and listed below.

Measures of Research Activity and Intensity, pages 7 and 8

1. *For the 2008 clusters of ERA, research activity and intensity data will be collected at the two-digit FoR level. Collecting this data at four-digit FoR level over the longer term would provide greater granularity of analysis and reporting. We welcome feedback on any implications that this requirement will have for the span of the reference period in terms of retrospective data collection.*

RESPONSE:

The Australian Institute of Agricultural Science first wishes to comment on the Cluster structure that appears to have been adopted. We are very concerned that the adopted structure has split a group of environmental sciences from the agricultural and biological sciences and biotechnology (Cluster 6) and included them in with the engineering sciences (Cluster 3). The disciplines of Soil Science (0503), Environmental Science and Management, (0502), Ecological Applications (0501) and Other Environmental Sciences (0599) are predominantly biological in nature, though with physical and chemical aspects. The physical and chemical aspects are intimately related to the biological sciences in terms of biodiversity impacts and crop production systems. Only some physical aspects of soil science are directly related to the engineering sciences such as building and construction. However, although some land remediation pursuits are connected indirectly to the engineering sciences as site prerequisites to building programs, they depend on biological sciences for their functioning (so-called "land farming").

Furthermore, the proposal to conduct the discipline cluster reviews serially will preclude a logical discussion of interactions between the environmental disciplines and the other agricultural and biological disciplines, despite it being suggested that Higher Education Institutions can contribute research jointly to more than one Cluster.

Environmental Management, Natural Resource Management, Biodiversity Conservation, Water Resource Management and Quarantine and Biosecurity are intimately linked together with agricultural production and public and private land management systems.

The Institute supports the move to collecting data at the "four digit" FoR level to facilitate the identification not only of further inputs and monitoring of outputs, but also being able to recognise useful outcomes from the research.

We strongly recommend that disciplines 0503, 0502, 0501 and 0599 be transferred from Cluster 3 to Cluster 6 as was the case in the structure previously adopted for RQF Panel 5 – Agricultural, Veterinary, Food and Environmental Sciences.

We further recommend that Cluster 6 be titled Agricultural and Biological Sciences and Biotechnology

We recommend that the ERA Initiative be developed at the four-digit FoR code structure level.

2.	*We recognise that non-salaried staff (honorary and adjunct) often contribute to the overall research effort of an institution. Therefore, we are seeking comments on the extent (if any) to which these researchers should be incorporated into staff FTE reporting.*

RESPONSE:

This question gets to the heart of issues of collaboration. Increasingly, research is being undertaken across institutional boundaries. This involves increasing co-investment in jointly managed research programs involving scientists from the Higher education sector, CSIRO and State Government research agencies.

Apart from the well known Cooperative Research Centre model, other national bodies are facilitating collaboration. For example, the Standing Committee on Primary Industries is promoting collaboration and specialisation between the research agencies in the various states to encourage the establishment of a more efficient and effective research and development system capability for the primary industries.

Within states, collaborative arrangements are being encouraged. For example, South Australia has recently established a Natural Resource Management Research Alliance whose participants include the three South Australian universities, CSIRO, the SA Research and Development Institute, the SA Department of Environment and Heritage and the SA Department of Water Land and Biodiversity Conservation. The Alliance is chaired by an independent part-time chairman who was previously CEO of a New Zealand Crown Research Institute.

A mechanism should be established to evaluate the contribution of scientists in these other agencies towards the achievements being sought by the researchers in the eligible higher education institutions which will commonly become the lead agencies. If recognition of these inputs makes it advantageous for staff of other agencies to be brought on board by the eligible institutions by such mechanisms as adjunct appointments, or by totally transferring the staff to university management (as was done some years ago by the Tasmanian Government which transferred its agricultural and fisheries staff to the University of Tasmania to secure a then increased Research Quantum for Tasmania), they will do so. One questions whether these charades should be necessary but for a lack of ability to recognise the benefits of collaboration by any other means.

Transparent techniques should be established to recognise constructive collaboration within and beyond the eligible institutions resulting in excellence in discipline research in the eligible institutions.

Indicators of Research Quality, page 8

3. Are there other core indicators of research quality that could readily be included?

RESPONSE:

The Australian Institute of Agricultural Science and Technology is very concerned about the dominance of "input" measures, a secondary commitment to "output" measures and very little consideration of the outcomes from research. Whilst the metrics of funding and publication are potentially simpler to evaluate than the ultimate outcomes (though citations may represent measures of valuable outcomes for use by other scientists), nevertheless there should be some recognition given of outcomes which are of environmental, social or economic significance. Of course these may involve the question of lag-times before they can be evaluated, but the ERA system should not resile from attempting to address this issue. While the discussion paper recognises licence income and other commercialisation revenue as measures of outcomes, there are no other outcomes specifically identified. Provision should be made for eligible institutions to put forward other outcomes which they deem of significance. We have little doubt that able assessors will be able to winnow quickly what is put forward. Evidence of the extent of adoption of new technologies would be useful. For example, a high proportion of the cropping industries have adopted minimum tillage which has its origins in excellence in soil microbiology research. Likewise, the extent of adoption of new breeding technologies that could arise from eligible scientists in such joint venture institutions as the Australian Centre for Plant Functional Genomics should also be recognised as distinct from just the publications arising from the work.
Industry funding bodies are increasingly seeking evidence from providers of benefits of the research they fund to industry, and even seeking suggested "paths to market" which normally require more than scientific publications It is important that your measures recognise this trend. The views and requirements of industry are assuming greater importance as governments reduce their funding support for research in many areas. This does not mean that standards of research will fall, it simply needs to place due emphasis on the practical value of its outcomes.

Further development of the recognition of successful *outcomes* should be undertaken, with reduced dependence on *inputs* as a measure of research excellence.

Indicators of Success in Applied Research and Translation of Research Outcomes, page 8

4. What other discipline-specific measures of excellence in applied research and translation of research outcomes should be considered by the Indicators Development Group, and how should they be benchmarked?

5. We would welcome suggestions regarding types of practitioner-focussed outlets that may indicate excellence in applied research or translation.

RESPONSES:

The extent and speed of adoption of science from a discipline area into applied research and development and its commercial uptake should be able to be evaluated. This may be measured in terms of various production metrics – employment changes, new technology adoption and/or economic impact. The contribution of the quality of the science that underpinned those changes should be evaluated by the effectiveness with which the scientists communicated the outputs of their discipline research. This should be a broad-based evaluation, whether by publication, conference communication, complementary consultancies or even contribution to government policy changes.
As stated above, industries are increasingly insisting on this broader form of output evaluation.

Research Income Data, page 9

6. How feasible is it to collect category 2-4 research income data at four-digit FoR? Are there specific issues for each category for retrospective collection? Are there specific issues for future collections in Category 3?

RESPONSE:

The ERA Initiative should **reduce** its very strong emphasis on collecting research income data, not the least because it will otherwise encourage universities and collaborating institutions to manipulate the data for evaluation purposes. The present regime will encourage collaborating agencies to ensure that the eligible institutions are the lead agencies to allow them to get income recognition, with the other agencies becoming subcontractors. The true reality is that the lead agency should be the one best fitted to undertake that role of its measures, not driven by ERA opportunism.

That being said, the Australian Institute of Agricultural Science and Technology sees no reason why research income cannot be apportioned at the four-digit FoR level.

With regard to Category 3 research income, it needs to be appreciated that rural research may involve collaboration with other international agencies such as from the Consultative Group for International Agricultural Research or access to international funds from other nations (eg Japan). Where the purpose is truly for discipline research, it should be accepted in the evaluation context, even though assessors may be required to make some judgements.

7. Are all the income categories necessary or appropriate? What additional income streams could be collected under Category 5?

RESPONSE: -

No comment

8. What would the most useful research income reference period be for ERA, considering this does not need to be the same as the six-year publications reference period (see page 10)?

RESPONSE:

The Australian Institute of Agricultural Science and Technology suggests that there may be merit in a lengthy income reference period, even up to a six year period, perhaps to the end of the financial year preceding the evaluation year. The assessors should be able to evaluate outputs and even outcomes from the earlier significant funding sources, and also establish that new grants are based on successful performance in previous grants, are based on good "grantsmanship" in developing a new discipline concept and/or on the perception of the principal investigator with an evaluation of his/her continued effectiveness rather than on long past reputation.

9. How practical is it to request numbers of successful grants in addition to research income?

RESPONSE:
The effect of requesting the numbers of grants would be to encourage researchers to secure large numbers of small grants and potentially waste a fair amount of time doing it. Such an orientation is likely to encourage opportunism and lack of strategic direction. The Australian Institute of Agricultural Science and Technology strongly encourages the development of larger proposals, based on a sound strategic approach to the science, appropriate collaboration where necessary in assembling the necessary skills, and an effective operating plan to achieve output milestones that stand up to effective peer scrutiny and the particular demands of the funding body in a realistic time frame.

Research Publications Data, page 10

10. A list of other possible publications types is provided in Appendix B of the Consultation Paper. We are seeking feedback on whether there is support for these types to be included for individual disciplines and whether these categories are appropriately identified.

RESPONSE:

The Australian Institute of Agricultural Science and Technology supports that the primary measures of science quality should be through recognised peer-reviewed processes. However, it considers that journals to be considered within a cluster may need separate evaluation at the discipline level. The Institute does not favour ranking of journals only at either the Cluster or two-digit FoR level as there will be some journals at specific disciplines at the four-digit level that rank highly in that discipline but have a low ranking in another discipline within the same cluster – for example veterinary journals and crop and pasture journals in their respective disciplines.

Publication Reference Period(s), page 10

11. Should all non-publication data be collected over a shorter reference period? If so, what would that period be?

RESPONSE:

No. Data measuring other outputs, and especially outcomes of strong discipline-based research may well take as long or longer than the process of getting a journal article published and a citation ranking on it.

Attribution, pages 10 and 11

12. Please provide comment on the above approaches for attributing publications.

RESPONSE:
Any approach to attribution should be so constructed so as to discourage the "buying" of publication outputs by eligible institutions just prior to the evaluation date. There is some evidence that this was happening in the previous RQF system. The arrival of a scientist with an impressive publication record is no guarantee that the individual will perform in a compatible and similar manner in the new institution. The question revolves around the principle of how research staff are secured by universities – whether in response to fulfilling a specific need identified by management, or whether to "hire good people to do good discipline research". It is the Institute's view that there is a progression towards a more discipline-targeted employment environment and that this greater "market responsiveness" is a desirable attribute.

Data Suppliers, page 12

13. Which citation data suppliers in your experience result in the most meaningful citation analysis for each of the disciplines?

RESPONSE:

No comment

Research Training Data, pages 12 and 13

14. Please provide comments regarding research training indicators. Is it possible to provide HDR completions data retrospectively at the four-digit FoR level?

RESPONSE:

The universities should be able to do this and if they are unable to do so it is an inditement on their poor post-graduate management practices.

15. Do you see value in tagging research outputs as authored by HDR students and value in the analyses this will produce?

RESPONSE:

The Australian Institute of Agricultural Science and Technology is of the view that there are serious shortages of scientists developing in Australia and every effort should be made to ensure that recognition is available for HDR students and is seen to be available. This may have the benefit of attracting more students to remain in or return to universities to undertake higher degrees by research at a time when some fields are finding it increasingly difficult to attract local post-graduate students to HDR programs. Furthermore, tagging such research outputs may well have the effect of indirectly increasing the percentage of students actually completing their HDR degrees.

Submission, page 13

16. Institutions are invited to comment on the ease or otherwise of meeting any of the data requirements outlined in this document in addition to the specific questions addressed under particular headings.

RESPONSE:

The Australian Institute of Agricultural Science and Technology is not an appropriate body to offer comment.

Reporting, pages 14 and 15

17. We propose there is considerable value in having maximum flexibility and utility with respect to reporting, however, we also recognise the workload involved for institutions in assigning reporting codes. We welcome feedback on this issue in respect to both the feasibility and value of such an approach.

RESPONSE:

The Australian Institute of Agricultural Science and Technology is not an appropriate body to offer comment.

Examples of Indicators Outputs – Research Training, pages 16 and 17

18. Institutions are invited to comment on the feasibility or otherwise of institutions identifying student authorship in previous HERDC collections.

RESPONSE:
It is not appropriate for the Australian Institute of Agricultural Science and Technology to offer comment