

# Submission

## 2016 National Research Infrastructure Roadmap Capability Issues Paper

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### Questions

Question 1: Are there other capability areas that should be considered?

**Biosecurity needs to be specifically considered. It is very disappointing that this has been ignored in this response proforma. Australia is dependent on strong biosecurity research to underpin access to trading markets and food security. AAHL requires significant upgrade to enable it to meet world's best practice – it used to be the leading animal health secure laboratory but as its facilities have aged its position has slipped. However its large animal research capacity is unique. Aquaculture research into exotic pathogens is essential and is severely compromised at the moment because of inadequate facilities at AAHL. Plant exotic disease research is virtually non-existent because of lack of suitable facilities. These issues should be a high priority for national research infrastructure funding. Why have they been ignored?**

Question 2: Are these governance characteristics appropriate and are there other factors that should be considered for optimal governance for national research infrastructure.

Question 3: Should national research infrastructure investment assist with access to international facilities?

Question 4: What are the conditions or scenarios where access to international facilities should be prioritised over developing national facilities?

**Whilst it is important to collaborate with international facilities in the biosecurity area it is critical that Australia is not dependent on international facilities for diagnosis or research underpinning development of diagnostic tests for exotic or other diseases that might restrict trade access. The susceptibility of Australia's animals (terrestrial and aquatic) and plants to exotic agents needs to be investigated under Australian conditions.**

Question 5: Should research workforce skills be considered a research infrastructure issue?

**Yes. There has been a significant decline in the skills base across all areas of biosecurity. State jurisdictions have been reducing their research capacity and capability (not core business is a common refrain). There is a shortage of many of the specialist skills required for research into the various aspects of biosecurity. Examples of skills**

**shortages include veterinary pathologists, microbiologists, parasitologists servicing terrestrial and aquatic animal diseases, entomologists, plant nematologists, plant pathologists and epidemiologists. Improving interconnectivity between jurisdictional, university and other facilities would assist in sharing of specialist skills.**

Question 6: How can national research infrastructure assist in training and skills development?

**Facilitating visits by scientists and research students could assist in training and skills development. Improved interconnectivity between facilities would also increase the capacity.**

Question 7: What responsibility should research institutions have in supporting the development of infrastructure ready researchers and technical specialists?

**Yes – that is an essential responsibility of research institutions.**

Question 8: What principles should be applied for access to national research infrastructure, and are there situations when these should not apply?

**In there should be reasonably easy access to national research facilities but national security and biosecurity may impose restrictions.**

Question 9: What should the criteria and funding arrangements for defunding or decommissioning look like?

Question 10: What financing models should the Government consider to support investment in national research infrastructure?

**Joint funding should be considered where appropriate. For example CSIRO needs to refurbish AAHL and this could be jointly funded by CSIRO and government investment.**

Question 11: When should capabilities be expected to address standard and accreditation requirements?

**Facilities need to meet national security requirements and also OGTR and DAWR where appropriate.**

Question 12: Are there international or global models that represent best practice for national research infrastructure that could be considered?

Question 13: In considering whole of life investment including decommissioning or defunding for national research infrastructure are there examples domestic or international that should be examined?

Question 14: Are there alternative financing options, including international models that the Government could consider to support investment in national research infrastructure?

## **Health and Medical Sciences**

Question 15: Are the identified emerging directions and research infrastructure capabilities for Health and Medical Sciences right? Are there any missing or additional needed?

Question 16: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 17: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Health and Medical Sciences capability area?

## **Environment and Natural Resource Management**

Question 18: Are the identified emerging directions and research infrastructure capabilities for Environment and Natural Resource Management right? Are there any missing or additional needed?

Question 19: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 20: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Environment and Natural Resource Management capability area?

## **Advanced Physics, Chemistry, Mathematics and Materials**

Question 21: Are the identified emerging directions and research infrastructure capabilities for Advanced Physics, Chemistry, Mathematics and Materials right? Are there any missing or additional needed?

Question 22: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 23: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Advanced Physics, Chemistry, Mathematics and Materials capability area?

## **Understanding Cultures and Communities**

Question 24: Are the identified emerging directions and research infrastructure capabilities for Understanding Cultures and Communities right? Are there any missing or additional needed?

Question 25: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 26: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Understanding Cultures and Communities capability area?

## **National Security**

Question 27: Are the identified emerging directions and research infrastructure capabilities for National Security right? Are there any missing or additional needed?

**The biosecurity issues addressed in the supporting paper are important to ensure access to international markets for Australian agricultural products – and for food sustainability.**

Question 28: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 29: Is there anything else that needs to be included or considered in the 2016 Roadmap for the National Security capability area?

#### **Underpinning Research Infrastructure**

Question 30: Are the identified emerging directions and research infrastructure capabilities for Underpinning Research Infrastructure right? Are there any missing or additional needed?

Question 31: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 32: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Underpinning Research Infrastructure capability area?

#### **Data for Research and Discoverability**

Question 33: Are the identified emerging directions and research infrastructure capabilities for Data for Research and Discoverability right? Are there any missing or additional needed?

Question 34: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 35: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Data for Research and Discoverability capability area?

#### **Other comments**

If you believe that there are issues not addressed in this Issues Paper or the associated questions, please provide your comments under this heading noting the overall 20 page limit of submissions.