Primary Industries Education Foundation Australia

Submission to Agricultural Innovation Parliamentary Inquiry

Focus: 'Barriers to the adoption of emerging technology'

In 2012 the Primary Industries Education Foundation Australia (PIEFA) released a survey it had commissioned that revealed, among other outcomes,

- 75% of year 6 students thought cotton socks were an animal product.
- 27% of year 6 students believed yoghurt is a vegetable product.

The results also included some extremely worrying data about student and teacher misperceptions.

- 40% of year 10 students believed primary production damages the environment.
- 43% of students did not link science to farming.
- 55% of students did not link innovation to primary production.

Not only do these misperceptions have an incredibly negative effect upon students and eventually the community's perception of the industry, it also has a direct relationship to the declining number of students seeking a career within the primary industries sector. In turn, this decline in numbers directly affects the industry's ability to attract the next generation of primary industry scientists that will drive innovation and increased productivity over the coming decades.

One of PIEFAs four objectives is to, "*communicate Primary Industries research and development outcomes in a format accessible for Schools and encourage interest within Schools in Primary Industries related careers*."

Examples of innovation in agriculture provide an especially unique and engaging context for teachers to both engage students in Science, Technology, Engineering and Mathematics (STEM) education and incorporate Food and Fibre production systems within the mainstream curriculum.

PIEFA is currently supported by its members, drawn largely from the rural RDC community and via projects such the Federal Governments 'Agriculture in Education'. Through this funding PIEFA has developed a wide range of resources for teachers to deliver Food and Fibre content to students featuring innovative primary industries examples such as precision agriculture, GMO technology and drones. Schools have received these resources very well, with 100% of teachers indicating that they would recommend the resources to other teachers.

With appropriate funding PIEFA can continue this work by;

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- Developing further such resources for schools with a focus on STEM curriculum and pedagogy.
- Provide a comprehensive national teacher professional learning program to develop teacher knowledge and confidence in the subject matter.
- Establish a national scholarship program that connects leading teachers with experts in the industry.

The recent announcements by the Australian Government regarding STEM education excites PIEFA as the perfect platform to continue our work with schools and to support the Governments agenda in additional to promote knowledge and interest in innovation in agriculture. The *National Science, Technology, Engineering and Mathematics (STEM) School Education Strategy 2016-2026* provides $50.6 million for Embracing the Digital Age – a suite of projects aimed at supporting the implementation of the *Australian Curriculum: Digital Technologies,* especially

- **"Support for flexible partnerships between STEM professionals and schools with a focus on the wider STEM industry, in particular the ICT industry and women in STEM careers"**.

The strategy also provides $14 million for Inspiring STEM Literacy
(In the early years) through:

- **"Supporting projects which assist early childhood educators to work in partnership with parents and other family members to promote positive science and maths experiences for young children aged three to five**
- **The development of online resources for teachers, parents and students, face-to-face training for educators and a series of apps to offer opportunities for preschool age children to engage with STEM concepts.**

Recommendation/Conclusion

To assist in removing barriers to the adoption of emerging technology that the Standing Committee on Agriculture and Industry recommend that PIEFA receive $1 million a year over ten years in funding from the *National Science, Technology, Engineering and Mathematics (STEM) School Education Strategy 2016-2026* to support teachers and develop aspirations and perceptions of students in relation to STEM education and careers with an innovation in Food and Fibre production context.

Ben Stockwin, CEO
15th of March 2016