Dear Sir or Madam,

First up, I would like to congratulate the Minister for Agriculture Barnaby Joyce for referring the subject of Agricultural Innovation to the Standing Committee on Agriculture and Industry, this is a key area in building Australia's future.

Whilst Australia can't physically feed the world, we can certainly provide the techniques, technology, and training to help do so

I would make the following points in my submission to Committee

1. *The first thing I would recommend to the Committee is to invite Professor David Lamb from the University of New England (UNE) SMART Farm down to Canberra to give a presentation and take questions.*
   - *David* not only put UNE's SMART Farm together, but through the Precision Agriculture Group also located at UNE, he is involved with numerous other Farm Projects around Australia, from the Kimberly and the far North to Victoria.
   - However I feel his biggest asset for this Committee is his ability to bridge the gap between Academia/Theory and the real world of farmers, a rare gift indeed
   - https://www.une.edu.au/research/research-centres-institutes/smart-farm
   - **Contact Details** -   Mobile

2. *We need to work towards a long term <u>integrated</u> yearly program to continue the expansion of Mobile Coverage infrastructure throughout Regional Australia.*
   - Mobile Coverage in Regional Australia is the missing link in our Telecommunications network and is vitally important for the future of:
     i. Increased food production and efficiency
     ii. Modernisation of Agriculture and the supply chain
     iii. "The Internet of Things" – Sensors connected to the Mobile Network
     iv. Agricultural "Big Data" applications that will rely on sensors connected to the Mobile network
     v. We can't physically feed the world, but we can certainly provide the Technology and Techniques to help do so, it is our future
   - By *<u>integration</u>* I mean build it into the economic strategies of Australia e.g. Free Trade Agreements with Japan, Korea, China and India right down to an LGA level.
   - Northern Inland NSW areas around Narrabri, Moree and Gunnedah have been totally missed by both the Mobile Black Spot program and rollout of NBN Fixed Wireless. They are significant areas in cotton, broad acre farming and more recently mining, coal and coal seam gas, this should be taken into consideration when deciding Mobile site coverage/locations

3. ***Following on from point 2, we need to work at a local level with both the Federal Government and the Network Providers to ensure that the optimum Mobile sites/network are built,*** good examples of this in New England are
    - Kingstown vs Balala
    - Kings Plains vs White Rock Mountain
    - Bonshaw Valley vs a hill 6km's out of Bonshaw, that will cover Bonshaw and much more
    - There are significant savings and more importantly expanded coverage at a faster rate to be made from decisions like these. The key are onsite meetings between all the parties
    - Along with Data Centres, the Internet of Things, UNE's Big Data Agricultural Project and our Come on Shopping project (www.comeonshopping.com.au), mobile coverage is a critical component of the future Digital Economy of Northern Inland NSW and Regional Australia.

4. **Build or foster the creation of Data Centres in Regional Areas, that would specialise in Agricultural and Meteorological data**
    - The closer you are to a "Data Centre" the better off you are
    - Imperative with a changing climate we use Data Centres and associated "Big Data" projects to begin predicting and preparing before we reach tip over points of no return
    - Apart from Agricultural "Big Data" projects it will also have the added advantage of attracting more high tech industries to Regional Australia eg. 3D Printing, Robotics and Virtual Reality

5. **Build practical Agricultural "Big Data" projects**
    - Must be of practical help to Farmers eg. help improve his bottom line
    - Collection of Data must be automatic, minimal work for farmer involved
    - Output must be visual wherever possible. Farmers are mostly visual people and masses of figures won't work
    - Combine data from many sources eg. existing data bases(soil and weather), in the field sensors, Satellites, cameras, markets and climate change models

6. **Encourage Regional e-Commerce web sites like Regional Development Australia Northern Inland's *"Come On Shopping"* e-commerce Web Site**
    - http://www.rdani.org.au/projects/come-on-shopping.php
    - Another important part of Regional Australia Agriculture is all the unique cottage/farm industries that produce for niche markets. We need to provide avenues, especially Internationally to not only sell their products but add to the narrative we are building for Regional Australia

7. **Establish a Regional Australia IP-TV Network with emphasis on Agricultural stories** eg. Personal support and help, Funding and Drought Assistance Programs, Technology and Innovation, Smart Farming, Robotics, Big Data, Climate Change Telecommunications(Mobile Coverage) and e-commerce platforms like "Come On Shopping"

8. **Increase rollout and implementation of IPv6 at every opportunity, make it a condition of Mobile network and RSP's**. A number of our major trading nations, China and India are rapidly introducing it as a matter of urgency and we need to be on the same wavelength to continue Australia's economic development and integration with them.

Whatever the reason, climate change, population growth, regional wars or a combination of all, the end result will be less water, food and energy to go around
Whilst Australia can't physically feed the world, we can certainly provide the techniques, technology, and training to help do so, this is Australia's future

Again, I think this is a good initiative by Minister Joyce and I hope my ideas help.
I am happy to be contacted to discuss any of the above

Regards
Alun

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Mobile