


Submission No:	25
Date Received:	20-3-09
Secretary:	

Submission by the Urban Research Centre, UWS. March 2009

This submission addresses the role of rural research in assisting farmers to adapt to the impacts of climate change. In particular, this submission argues for the importance of promoting research tools that contribute to sustainable, efficient and effective farming at the fringe of cities in the context of the challenges arising from climate change and urban growth. Urban agriculture and agriculture at the fringe of cities could be seen as a potential repository of biodiversity capable of reducing greenhouse gas emissions, storing carbon, and increasing food security in terms of food availability, accessibility, utilisation and systems' stability (FAO, 2008).

Agriculture at the city fringe

To ensure the ongoing success of urban and fringe agriculture that adapts to climate change and city growth, it is important to develop tools for accurate, consistent, and rapid monitoring of the use of land at the fringe of cities. Particular attention needs to be given to rural lands that are adequate for farming but are threatened by urban expansion. In the long-term, monitoring land uses at the fringe of cities will contribute to sustainable urban planning that integrates urban land uses with adjacent rural areas without compromising land that is adequate for agriculture. However, there is a significant gap in historical land use change studies in Australia using coherent, consistent and standardized methodologies. This situation jeopardizes the efficient monitoring of land use changes and makes difficult the detection and or protection of key agriculture areas suffering the pressures of urban expansion.

Land use mapping as a research tool

There is a need for spatio-temporal consistency and automated methodologies to be developed and applied in order to generate standardized and coherent land use data in Australia. Such monitoring tools can be used to detect changes and future pressures to sustainable systems. This idea has been supported by NSW regional governmental entities and universities from Sydney and Adelaide but yet has to be properly funded. The Urban Research Centre of the University of Western Sydney is testing an automated method for historical land use mapping of the Sydney Basin. These tools are based on the analysis of satellite imagery by specialised remote sensing software. The land use classification is based on expert knowledge while the validation of the land use maps are based on ground truthed data.

Conclusion

The development of these tools and achieving consistency of methodologies can be of great benefit to rural research. A full consistent approach to determining land use changes that are sustainable and integrated with urban and fringe agriculture is needed to better adapt to the challenges of climate change and urban's growth.

The role of the government in promoting research that tackles the monitoring of practices with potential negative impacts on sustainability should be proactive. Here we have expressed the need for a consistent and automated way of monitoring land use changes in Australia that facilitates the detection of development activities hampering the endurances of urban agriculture due to its potential contribution to mitigating climate change. Technologies are now available to undertake this work. The cost is relatively moderate. We urge that efforts be made to employ them to build

much-needed knowledge about agricultural lands, especially those on the edges of our growing cities.

Reference: (FAO, 2008. **Climate change and food security: a framework document**

<ftp://ftp.fao.org/docrep/fao/010/k2595e/k2595e00.pdf> Accessed: 05.03.2009