

Agricultural Applications

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The Satellite Remote Sensing Services (SRSS) section within the Department of Land Information (DLI) has been routinely acquiring satellite data for farmers and rural consultants and building operational processing and internet delivery systems spatial consultants for 3 years based on the Normalised Difference Vegetation Index (NDVI).

The agricultural products that are being generated routinely from this data and delivered to farmers, consultants and corporate users include:

- Prediction of **Pasture Growth Rate** (PGR) and estimates of Feed On Offer (FOO) at property and paddock level for Mediterranean annual pastures (Donald et al, 2004 and Edirisinghe et al 2004) as part of the Pastures from Space program.
- Maps for assessment of crop and pasture productivity at paddock scale from the **AGIMAGE** product range.

Processing systems have been developed by SRSS to produce the pasture growth and crop productivity information from the satellite data utilising the CSIRO models for PGR and FOO and SRSS algorithms for Agimage products. Customised maps and paddock values are then tailored to suit individual customer needs and software delivery packages.

The PGR information can be accessed and viewed graphically through an internet web browser developed at SRSS as well as third party freeware called "Pasture Watch" developed by Fairport Technologies. The PGR data can be automatically downloaded from the SRSS web server to the "Pasture Watch" software and delivered to the farmer in near real time for management decisions at paddock level.

The Agimage on-line delivery service has an internet browser interface using ArcIMS and Earth Resource Mappings-IWS and uses server side processing with ArcView and Spatial Analyst for analysis and extraction of crop productivity maps. The products are then delivered by email to the client. An important development of this system is the ability to access the cadastral property boundary information that allows search and selection of a farmer's property by title and location and an option to draw in an area of interest for map extraction. The system successfully combines the integration and delivery of vector and raster data over the internet.

This paper outlines the processing and delivery systems for these agricultural products.