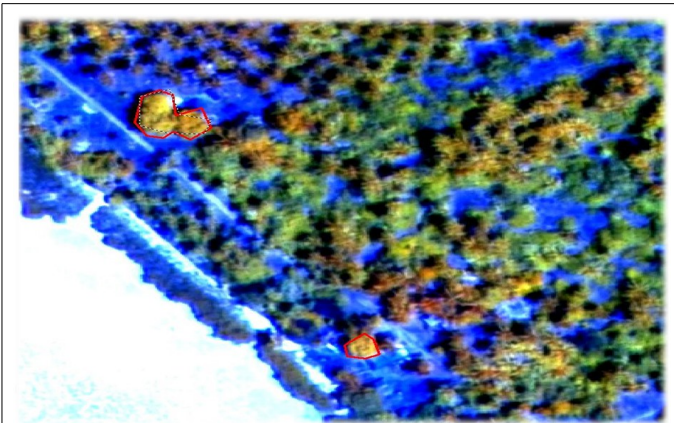


## Separating Breadfruit from other Vegetation with WorldView-2 Image Data

Litia Gaunavou, who presented is part of the GIS&RS unit at SPC. She is working besides image purchase and pre-processing on spectral separation of breadfruit from other vegetation.

The Agriculture Department in Kiribati wants to map breadfruit to be in the picture of available resource as this is the traditional main none fish food resource. Currently rice replaces breadfruit, however, rice is imported and if import stops this resource has to be re-activated. The request for mapping was addressed more than 10 years ago but there was no capacity to investigate in mapping potential and carry out the mapping.



*The read polygons show the crowns of breadfruit trees. They can be clearly separated from other vegetation with the combination of infra-red, red-edge and red.*

A thesis provided the opportunity to concentrate on the old demand. In addition, the improvement of spectral coverage supplied by WorldView-2 (WV-2) satellite image data gave a new opportunity to investigate in mapping potential.

A WV-2 dataset was ordered and field work conducted. The field work used a precision GPS system with own base station providing 80cm accuracy. Breadfruit trees, pandanus and other vegetation types were mapped in Northern Tarawa. Then, back in Suva the polygons of the mapping task were overlaid over the WV-2 image data. This was done for different of different band combinations of the image data.

The combination near infra-red, red-edge and red created a combination which clearly allows separation breadfruit by its spectral reflectance. This allows a mapping using WV-2 satellite image data. Further investigation will detect what causes the difference in reflection.

Investigator: Litia Gaunavou      litiag@spc.int  
GIS&RS unit: wforstreuter@yahoo.co.uk