Data access statement

The following data were used in the PhD thesis *Understanding landscape change in support of opium monitoring in Afghanistan,* which aims to derive seasonal and annual changes in land-use using Earth observation big data analytics.

Satellite imagery and labelled datasets

The commercial DMC imagery used in thesis chapters 2, 3 and 4 was is licenced via DMCii Ltd. and is not publicly available. The Landsat 5 and Landsat 8 imagery used in chapters 4 and 5 are available from https://earthexplorer.usgs.gov/. The Sentinel-2 imagery used in chapter 5 is available from https://scihub.copernicus.eu/.

The labelled training data for agricultural land use 2007 to 2009 were from Taylor *et al*. (2010) and are unpublished. 2015 to 2017 training data were based on manual interpretation in change areas identified using UNODC data (UNODC, 2017).

FCN model and code for agricultural mask classification and assessment

The generalised FCN-8 model trained using 2007, 2008, 2009, 2015, 2016 and 2017 data to classify agricultural land in Helmand Province, Afghanistan is included in this submission (FCN8_Helmand.ckpt for TensorFlow v1).

Code for running the model and calculating localised intersection over union (localised IoU) can be found at https://github.com/AlexMHamer/PhD-repo.

References

Taylor, J.C., Waine, T.W., Juniper, G.R., Simms, D.M. & Brewer, T.R., (2010). Survey and monitoring of opium poppy and wheat in Afghanistan: 2003-2009. *Remote Sensing Letters*, 1 (3), 179-185. doi:10.1080/01431161003713028

UNODC (2017). Afghanistan Opium Survey 2017. Available at: https://www.unodc.org/documents/crop-monitoring/Afghanistan/Afghan_opium_survey_2017_cult_prod_web.pdf