

News from the Field:

James Alden and Paul Baranowski

Honduras, Using Technology for Decision-making by Smallholder Coffee Farmers

James Alden and Paul Baranowski conducted research to design and evaluate a tool to aid science-led decision-making for smallholder coffee farmers in Central America for their MScs in Environmental Technology at Imperial College.

In 2014, the total global export value of coffee for producing nations well exceeded \$20 billion; despite this seemingly vast sum, we are currently in the midst of a 'coffee crisis', with producers being hit hardest. Breakdowns in the International Coffee Agreement (ICA) and influxes from newly emerging Asian markets have resulted in an oversupply of poor quality coffee and destabilised, low prices. These issues have been magnified by increasingly volatile climatic conditions, and a lack of access to credit for farmers, which force farmers to grow poorer quality, easily cultivated coffee strains, adding to the already harsh market environment. Farmers are being forced to sell assets, reduce expenditure from food consumption and school fees, and in some cases migrate to cities in search of alternative income, and these trends are continuing to worsen.

Our project set out to pilot a new methodology, aimed at improving coffee farm net present value, through the use of an environmental data collection toolkit and a computer simulation model, providing farmers with greater information to make better farm and crop management decisions. My specific goal was to develop and pilot the physical toolkit to enable cost-effective and accurate environmental data to be collected from farms. The data from which would be used to provide farm specific decision support on how to maximise yields and yield quality, and which adaptation strategies used to face climate change would be most appropriate for each farm. During this study, the approach was evaluated for potential efficacy, through communication to farmers and specific trials in the field.

With the support of the TAAF award, and with the help of HRNS, Fairtrade and Becamo organisations, I was able to pilot the developed toolkit on a number of

farms in Honduras. Whilst the approach being developed is still a work in progress, the pilot study enabled us to gauge exactly which parameters should be measured using the physical toolkit, and the most practical and cost-effective methods to do this under real field conditions. This will ensure that the toolkit is completely appropriate for the farms and farmers to which this project is directed. The pilot also allowed us to talk to the farmers and understand where decision support was most needed, and to gauge whether the approach being developed would be accepted and incorporated by the farmers and cooperatives themselves. The response was positive, and our experience showed that empirical data from farms to guide decision making was severely lacking in this sector, supporting the continued development of this approach. We really believe that if this project can be implemented fully, we will be able to support coffee, and other smallholder, farmers in a personal, practical and effective way that has not been attempted before, to enable farmers to increase production and income despite a deteriorating economic and environmental climate.

(James Alden)

James and Paul with their Honduran collaborator

