Reducing the costs of data collection and analysis

Collecting reliable data on forest carbon is an essential requirement of carbon certification schemes, which demand continuous geo-referenced inventories in order to assess carbon stocks. Board members and investors require transparent financial tracking, project managers need timely project information, and buyers and donors want quantified information on social and environmental co-benefits.

Forest and farm producer organizations are at a major cost disadvantage when collecting and analyzing the data required for performance-based payments. Most forestry projects manage large areas with only a handful of land-owners; producer organizations consist of hundreds or thousands of dispersed operations. In addition, small-scale operators do not have the required skills in data collection. And until recently, the costs of collecting, managing and analyzing large quantities of high-quality data made such projects prohibitively expensive.

Taking Root, an organization that develops forest carbon projects in Nicaragua, designed the Smallholder Carbon Project Information Management System to find, track, organize, monitor and communicate technical and financial information. The system does not require specialized staff, and it allows producer organizations to benefit from using professional forest carbon information at a fraction of the cost.

Community technicians are trained and equipped with cameras and GPS-enabled tablets with special software. New farmers are added to the database with profiles that include proof of land tenure, etc. The software geo-references areas to be reforested and marks randomly generated and statistically unbiased monitoring points. A personalized agreement between the farmer and the project clearly states payment milestones and criteria. Technicians return to each farm periodically to take measurements from the monitoring points. The system assesses results against agreed milestones and creates a payment receipt, which farmers sign when they receive the money and which is also uploaded into the system.

Information is automatically compiled and analyzed, allowing managers to produce reports tailored to specific stakeholders in a matter of minutes, a process that used to take months. This allows managers to see the impacts of their decisions and ensures continuous improvement. Buyers can share social and environmental impact indicators through Google Earth, allowing them to find new sources of value within projects. One client said that seeing how information was tracked was a major factor in the decision to continue providing support.

Development organizations are using the system to make forest carbon payments to thousands of farmers in Nicaragua and Guatemala, and it can now enable more smallholders to benefit from forest carbon markets.

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