SGS FORESTRY'S CARBON OFFSET VERIFICATION SERVICE[1]

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ABSTRACT

SGS Forestry, the forestry division of the SGS Group -- the world's largest international inspection, testing, and monitoring organisation -- is offering a new service of analysis and verification of forestry-based carbon offset projects. The service consists of a formal analysis of project concept and design, and an independent quantification and verification of projected and achieved carbon savings derived from a project. SGS Forestry's methodology includes the following components. Firstly, a suitability assessment of project design to ascertain whether it fulfils SGS Forestry's carbon offset project eligibility criteria, which were compiled from main GHG regulatory bodies world-wide. Second, assessment of the project's scientific methodology, focusing on data quality and statistical analysis. Thirdly, verification of projections of incremental carbon flows derived from the project utilising a model especially designed for this purpose. The model focuses on the main forest carbon pools (trees, other vegetation, necromass, soil and forest products) and their rates of change, for the project and baseline cases. Finally, a surveillance program for assessment of project development and verification of achieved offsets. In order to maintain transparency in this service and ensure a process of continuous improvement, SGS Forestry will convene an expert scientific advisory panel to assess both the state of its methodology and to review the actual project evaluations undertaken. This paper describes the various components of the service in further detail.

1) INTRODUCTION

Concern about the effects of greenhouse gas (GHG) emissions on global climate has prompted the search for methods to control the accumulation of these gases in the atmosphere. This objective is shared by the 153 nations which signed the Framework Convention on Climate Change at the Earth Summit in Rio 1992 (UNCED). Carbon dioxide (CO_2) is the most important greenhouse gas, and is released principally by fossil fuel combustion, particularly coal and oil. Other sources of CO_2 include the burning or decay of vegetation and fluxes from the oceans. Forests play a double role in this process. The loss and degradation of forests contribute about 30% of total CO_2 emissions world-wide. Forests, however, are also one of the most productive long-term carbon sinks, offering the possibility to sequester CO_2 from the atmosphere.

Carbon offsets are the result of any action specifically taken to remove from and/or prevent the release of carbon dioxide into the atmosphere in order to balance emissions taking place elsewhere. Over the past decade, forestry-based carbon offset projects have emerged as a cost-effective mechanism for companies and governments to alleviate excessive greenhouse gas emissions.

A variety of carbon offset programmes have been initiated since the Earth Summit. Over the same period, a series of GHG regulatory bodies have been created to control the development of these activities. Since reliable third party verification of carbon offsets is required by many GHG regulatory bodies, SGS Forestry has developed a service to assist with this process.

[1] In: Proceedings of the International Energy Agency conference on AIJ Technologies, Vancouver 1997. Elsevier.

2) SGS FORESTRY AND THE CARBON OFFSET VERIFICATION SERVICE

SGS Forestry is the centre of competence for all forestry activities of the SGS Group. SGS (Société Générale de Surveillance), is the world's largest international inspection, testing, and monitoring organisation. It operates in over 140 countries, has 1,180 offices, and over 38,000 employees. Founded in 1878, SGS today offers a wide variety of services over a large geographical range. SGS Forestry, based in Oxford, UK, is the largest certifier of natural and plantation forest management operations accredited by the Forest Stewardship Council -- under the QUALIFOR brand. SGS Forestry also undertakes independent forestry audits, forest management evaluations, provides log and wood product tracking and collateral management services, and monitors national log exports for several countries, including - Cameroon, Congo, Central African Republic, and Papua New Guinea.

SGS Forestry has been following the progress of carbon offset policy for some time and we believe that there is an emerging need for independent monitoring, verification and certification of carbon sequestration claims within Activities Implemented Jointly (AIJ) and domestic programmes. This service was created together with EcoSecurities Ltd, a firm specialised in forestry and environmental technologies and finance, with offices in UK, US and Brazil. As reliable third party verification is a prerequisite for any kind of national, regional or global system of GHG emissions control, we feel that the offering of this product will boost policy initiatives in this regard.

The service consists of a formal analysis of project concept and design, monitoring of project implementation, and verification, quantification and certification of projected and achieved carbon offsets derived from a project. The service is available to both buyers and sellers of carbon offsets, and is also relevant to GHG regulatory bodies and other interested parties. SGS views the offering of this service as being a risk management tool for all parties in this emerging field.

The SGS service is designed to provide a greater confidence for carbon offset projects, regulation and transactions, by being an impartial third party with a uniform evaluation methodology. Each of the bilateral relationships sketched along the outer part of the triangle (Figure 1) is enhanced through the addition of independent third party evaluation. As in any trade relationship, neutral verification of the quantity and quality of goods being promised ultimately enhances transaction flow, by alleviating performance risk.

SGS Forestry, however, is not an arbiter in accepting or rejecting the validity of particular projects. SGS must defer the ultimate judgement regarding the acceptability of particular projects and transactions to regulators in the countries involved. Through its analytic rigour SGS can, however, provide pertinent information between parties regarding the qualitative and quantitative aspects of particular projects.

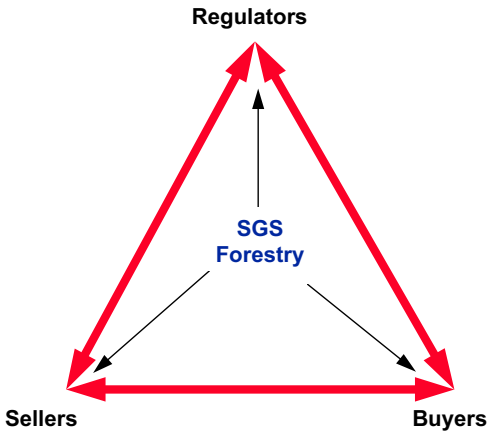

Figure 1: SGS Forestry's role as facilitator of carbon offset transactions.

The service consists of the following phases (see Table 1):

- Phase 1) Initial assessment
- Phase 2) Full assessment
    - Suitability analysis against SGS Forestry's Carbon Offset Eligibility Criteria
    - Assessment of scientific methodology and verification of carbon flows
- Phase 3) Surveillance program and issue of certificates

SGS Forestry can also assist clients on registering their projects with relevant GHG regulatory bodies, as a separate service.

These services are described in more detail in the following sections.

3) INITIAL ASSESSMENT

This initial phase involves discussion with the client about the main characteristics of the project, possibly including a field visit. Preliminary analysis of project design and scientific validity is conducted in order to define the type of service required. Other issues such as data availability and quality also have to be considered.

Since SGS Forestry's methodology is based on specially-designed software for data control and calculation of carbon flows, training is offered to project staff on how to use this package.

4) FULL ASSESSMENT

This phase includes various activities, conducted both in the office and during field visits, including:

- Suitability assessment - detailed analysis of project design in order to ascertain whether it meets SGS Forestry's Carbon Offset Eligibility Criteria (see below);
- Assessment of the scientific methodology of the project, focusing on data availability and data quality;
- Assessment of the project's management capability and infrastructure, to determine it's ability to accomplish the targets proposed;
- Verification of projections of carbon flows derived from the project by quantifying carbon flows of with- and without- (baseline) project scenarios. SGS Forestry will utilise specially-designed software for projection of carbon flows. Satellite image analysis may be utilised for verification of patterns of land use change.
- Installation of software packages and training of project staff on its use.

Based on this analysis, SGS Forestry will provide:

- a report stating the results of the suitability assessment - whether or not the project meets SGS Forestry's Carbon Offset Eligibility Criteria.
- a verified projection of carbon offsets expected from the project.

SGS Forestry can also assist clients on registering their projects with relevant GHG regulatory bodies, as an entirely separate service.

The main components of this phase are a suitability assessment (qualitative analysis of the reference case and project design) and an assessment of scientific methodology (quantitative analysis of projected GHG flows), described below.

4.1 Suitability assessment: a qualitative analysis of project design

SGS Forestry is keen to ensure that this service meets the needs of the existing GHG regulatory bodies. For this reason, a series of Carbon Offset Eligibility Criteria were compiled from the requirements of GHG regulatory bodies world-wide[2], and these are used to evaluate project design.

The main criteria are:

Acceptability:
- National level
- International level

Additionality:
- historical series
- future trends
- emissions aspects
- financial aspects
- programme aspects

Externalities:
- slippage and leakage
- social and developmental effects
- environmental impacts

Capacity:
- management
- financial
- infrastructure
- technology
- verifiability

4.2 Assessment of scientific methodology

During this Phase, SGS Forestry will analyse the following factors:

- project's management plan, looking for consistency of information and methodology of stratification of project area;
- carbon pools and flows identified as relevant;
- data collection methods and capacity of the internal monitoring program to collect and analyse the data required;
- statistical methods for data analysis;
- methods used for calculation of carbon flows and determination of offsets.

SGS Forestry has developed a Carbon Quantification Model to assist the verification of the initial projections of carbon flows provided by its clients. This model is based on the following carbon pools and their flows (positive and negative):

- trees, above and below ground components;
- other vegetation;
- necromass: fine and coarse litter, dead trees, etc.;

[2] The current criteria were compiled from the requirements of the USIJI, the Canadian JII, the Australian AIJ Pilot Initiative, the Netherlands JI Pilot Programme, and the German AIJ Pilot Phase Programme. It is anticipated that other criteria will arise, and SGS Forestry will continuously update its criteria accordingly.

- soil carbon;
- wood products, and their primary and secondary utilisation and conversion rates.

These initial projections have the aim to provide an understanding of the overall trends of carbon flows derived from the project. It will assist both SGS Forestry and its clients in establishing the schedule for the surveillance program. Certification of offsets, however, only occurs after the surveillance visits, when carbon claims can be substantiated by real data collected by the project's internal monitoring program and verified by SGS Forestry.

5) SURVEILLANCE PROGRAM AND ISSUE OF CERTIFICATES

SGS Forestry and the client will establish a surveillance program for verification of project development and certification of achieved offsets. This phase consists of periodic verification of carbon achievements, concentrating on field implementation and field data gathered by the project's internal monitoring program. This will include field inspections, verification of field books, calculations, reports, and so on.

Based on the results of assessments carried out during the surveillance visits, SGS Forestry will issue certificates stating the amount of carbon fixed by the project up to the date of the most recent assessment. While these certificates may be traded, SGS Forestry will maintain a registry of each certification in its offices in Oxford.

6) SGS FORESTRY'S SCIENTIFIC ADVISORY PANEL

SGS Forestry aims to ensure that its methodology is "state-of-the-art" and that new data and methodologies are regularly incorporated within a scheme of continuous improvement. For this reason SGS Forestry will create an expert scientific advisory panel to monitor its methodology and to review the actual project evaluations undertaken.

7) CURRENT DEVELOPMENTS

SGS Forestry is now adapting this methodology to fulfil the characteristics of Costa Rica's national carbon sequestration programme. This programme is co-ordinated by OCIC, the Costa Rican Office for Joint Implementation, and will attract part of its finance through the international sale of Certified Tradable Offsets (CTOs). The development of this programme also counts with the participation of the World Bank, the Centre Financial Products, the Earth Council and EcoSecurities Ltd.

Table 1: Services provided by SGS Forestry Carbon Offset Verification Service.

Service	Work involved	Output
1) Initial assessment (Preliminary analysis and scoping visit)	Office work. May involve field visit. Preliminary analysis of project design Provide client with SGS Carbon Offset Verification Service Working Books 1, 2 and 3, and Carbon Quantification Software.	A short report about quality of project design and suggestion of a certification workplan.
2) Full assessment (Analysis of project design and scientific methodology)	Desk analysis and field inspections. In some cases may involve analysis of satellite imagery Suitability assessment to determine if the project fulfils SGS Forestry's Carbon Offset Eligibility Criteria, or a specific standard, if appropriate or as requested by the client Assessment of scientific methodology focusing on data collection and estimation of carbon pools. Verification of baselines and projections of carbon flows using SGS's Carbon Quantification Model	A detailed report describing the qualitative and quantitative analysis of the project. A recommendation of whether the project qualifies as a valid carbon offset
2b) Registration/listing service (optional)	Desk work Prepare and submit application forms to GHG regulatory bodies using data gathered during Phase 2. The report prepared in Phase 2 will be attached to these applications. This service does not involve any development work related to project design. It consists only of handling application forms and contacting the offices of GHG regulatory bodies.	A registration or listing of the project with the relevant GHG regulatory body
3) Surveillance program and issue of certificates (verification of compliance and quantification of achieved carbon offsets)	Desk and field work. Verification of data records and calculations, for accuracy of results. Field inspection of project implementation Verification of permanent sample plots and data quality. Initial visit will include training of the project staff on use of SGS Forestry's Working Books and Carbon Quantification Software. Issue of certificates based on the volumes of carbon offsets achieved by the project to date.	Certified quantities of achieved carbon offsets Regular reports on project implementation progress