

Carbon additionality

Additionality is widely considered to be a core aspect of the quality assurance of emissions reduction and carbon sequestration activities, but remains a source of much controversy in national carbon accounting, international regulatory frameworks and carbon markets. A review of the approaches to additionality was commissioned to help inform the development of a Code of Good Practice for UK forestry carbon projects.

Background

Additionality distinguishes the positive net benefits associated with an activity or project; in a climate change context, it refers to net greenhouse gas (GHG) emissions savings or sequestration benefits over and above those that would have arisen anyway in the absence of a given activity or project. This concept is reflected in Articles 3.4, 6.1 and 12.5 of the Kyoto Protocol.

The underlying rationale is to enable activities contributing further to climate change mitigation to be distinguished from those that, although they may appear associated with carbon savings, do not offer benefits above those expected anyway. Identifying which savings are additional can help avoid credits being issued for carbon benefits that would have arisen in any case and avoid purchasers paying for no substantive gain in climate change mitigation.

Objectives

This research aimed to:

1. review core concepts, the underlying rationale for the application of additionality to carbon markets, and key issues including:
 - legal requirements relating to national reporting under the Kyoto Protocol
 - project viability
 - baselines
2. review common types of additionality tests, including:
 - regulatory tests
 - investment and financial tests
 - barrier tests
 - common practice tests
3. outline the range of additionality methodologies adopted under different international mechanisms

and voluntary carbon standards, including indicators used and evidence requirements

4. consider implications of Kyoto Protocol/National GHG Inventory carbon accounting for generation/claiming of carbon credits for woodland projects
5. compare methodologies applied to ex-ante (future carbon) and ex-post (captured carbon) projects

Methods

This work comprised desk-based literature and web research and review.

Findings

- Additionality is multi-faceted. At least fifteen forms can be distinguished (see table overleaf).
- Differences in tests do not relate to differences between ex-post and ex-ante crediting. They relate partly to rigour-cost trade-offs. The link with cost (which influences project proponents' ability to afford to register projects) is illustrated by differences in tests used for large-scale and small-scale Clean Development Mechanism (CDM) projects and different approaches to establishing baselines.
- Aspects seldom covered explicitly by additionality tests can be very significant. GHG additionality, for instance, is seldom covered, even though it is a key element under each standard.
- To the extent that the concept is open to interpretation and based upon comparisons of hypothetical scenarios, determining additionality is imprecise and is likely to remain controversial even where comparatively stringent tests are applied.

Table: Forms of additionality

Category	Form	Description
Legal, regulatory, institutional	Barrier	Overcome implementation barrier
	Compliance	Exceed statutory requirements
	Date	Activities occur after a particular date
	Incentive	Exceed benefits associated with incentives provided by regulatory framework
	Institutional	Independent of statutory emissions reduction targets
	Jurisdiction	Activities in particular location or undertaken by specific communities or social groups
	Practice	Not common practice
	Reporting	National carbon accounting /reporting additionality rules
Financial and investment	Technological	Application of specific technology
	Financial	Would not be financed without sale of carbon units
	Investment	Not financially viable or most attractive option without sale of carbon units
Environmental	Sales	Income from the sale of carbon credits a decisive factor in decision to proceed
	GHG	Positive impact on GHG balances (net reduction in GHG emissions /increase in GHG sequestration)
	Unit	Emissions per unit output below specified level
	Project	a) Afforestation and reforestation: forests unable to establish themselves in the absence of planned activities or project; b) Avoided deforestation or forest degradation: forests would have been deforested or degraded in the absence of the project

Recommendations

- It is important to remember institutional additionality when considering incentives for climate change mitigation by the forestry sector, since inclusion of forestry within national carbon accounting and reporting frameworks may reduce the market value of any associated carbon units. (A precipitous drop in the total EU voluntary carbon units purchased from 2.3 million tonnes of carbon dioxide equivalent (mtCO₂e) in 2007 to 0.2 mtCO₂e in 2008 was reportedly due partly to concerns of double counting associated with reductions being covered by national reporting under the Kyoto Protocol.)
- Focusing upon GHG and barrier additionality (i.e. that the proposed project or activity could overcome an implementation barrier otherwise preventing it occurring) along similar lines to the approach for small-scale CDM forestry projects could be justified in developing the Code for UK forestry projects if the social cost of adopting further tests was expected to exceed the social benefit. However, it could be controversial for similar reasons (i.e. the proportion of activities accepted as additional even though they would have occurred without the sale of carbon units would tend to increase).
- The Code could be extended from covering carbon sequestration alone to cover substitution benefits associated with the use of wood products instead of more energy-intensive materials (e.g. concrete and steel) and with using woodfuel instead of fossil fuels. This could be important where such savings are significant, providing their quantification and monitoring is cost-effective.

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