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Peatlands, Forests and the Climate Architecture: Setting Incentives through Markets and Enhanced Accounting

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Peatlands, Forests and the Climate Architecture: Setting Incentives through Markets and Enhanced Accounting

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Kurzbeschreibung: Ansätze für die Integration von Moor- und Waldschutzmaßnahmen in den Kohlenstoffmarkt

Die vorliegende Studie diskutiert politische und wirtschaftliche Steuerungsmöglichkeiten zur Intensivierung von Treibhausgasminderungsmaßnahmen in den Bereichen Moore und Wälder. Untersucht werden Maßnahmen sowohl auf internationaler Ebene (UNFCCC) sowie auf Ebene der EU. Ziel der Untersuchung ist die Erstellung und Bewertung von Handlungsoptionen im Sinne einer Anleitung für die deutsche und die EU-Position im Rahmen der Verhandlungen des 2015-Abkommens.

Zu den besprochenen Optionen gehören die Einrichtung eines „Moor-Hot-Spot"-Mechanismus´, die Verbesserung des Berichterstattungs- und Anrechnungsrahmens, die Etablierung separater Verpflichtungsziele für LULUCF, Aspekte bei der Verknüpfung von Handelssystemen („Linking"), Strategien zur Einbindung von LULUCF-Emissionen auf EU-Ebene, freiwillige Marktsysteme und Anreizmechanismen auf nationaler Ebene.

Die Studie schließt mit einer Evaluation der verschiedenen Optionen entlang bestimmter Kriterien, darunter Umweltverträglichkeit, institutionelle Hürden und politische Machbarkeit, und mit Schlussempfehlungen für die Bundesregierung und die EU. Besonderes Augenmerk wird dabei auf die Option der Entwicklung eines Moor-Markt-Mechanismus´(MMM) sowie im EU-Kontext auf die Option der Einbindung von LULUCF-Emissionen in den Rahmen der *Effort Sharing Decision* (ESD) und die Verknüpfung von Transaktionen unter der ESD mit Grünen Moor-Investitions-Programmen gelegt.

Abstract: Peatlands, Forests and the Climate Architecture. Setting Incentives through Markets and Enhanced Accounting

The study explores policy options to map and integrate greenhouse gas (GHG) sensitive interventions in peatlands and forests in the emerging climate change architecture both under the UNFCCC and at the EU level. The underlying purpose is to present incentives for tapping into the vast emission reduction potential presented by peatlands and forests, and to feed the results into the on-going climate negotiations of the 2015 agreement.

Options discussed include the establishment of an international peat hot spot intervention mechanism, an improved GHG accounting framework, separate accounting and commitment targets for land-use based emissions, enhanced linking of domestic emissions trading systems, strategies to address land-based emissions at the EU level, voluntary initiatives, as well as national interventions to channel finance and know-how into GHG emissions from peatlands in Europe.

The study concludes with an evaluation of options against a set of criteria including environmental integrity, governance challenges and political feasibility, and a set of recommendations for the negotiation agenda of the Federal Government and the EU as a whole. Specific attention, in the view of the authors, should be given to the establishment of a Peat Market Mechanism (PMM) and, at the EU level, the integration of LULUCF-based emissions in the framework of the Effort Sharing Decision (ESD) and the implementation of Peat Green Investment Schemes (PGIS) backing transactions under the ESD.

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List of abbreviations

AAUs	Assigned Amount Units
AFOLU	Agriculture, Land Use and Forests
ARB	California Air Resource Board
A/R	Afforestation and Reforestation
AR/D	Afforestation, Reforestation and Deforestation
AWG LCA	Ad hoc Working Group on Long-term Cooperative Action under the Convention
AWG KP	Ad hoc Working Group on Further Commitments under the Kyoto Protocol
BNDES	Brazilian Development Bank
BR	Biennial Reports
CAR	Climate Action Reserve
CDM	Clean Development Mechanism
CFI	Carbon Farming Initiative
CM	Cropland Management
CMP 7	Conference of Durban
COP	Conference of the Parties
IAR	International Assessment and Review
ICA	International Consultation and Analysis
IET	International Emissions Trading
IETA	International Emissions Trading Association
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
EDF	Environmental Defense Fund
EIA	Environmental Impact Assessment
EU	European Union
EU ETS	EU Emissions Trading Scheme
ER PIN	Emission Reduction Project Idea Note
ERT	Expert Review Team
ERUs	Emission Reduction Units
ESD	Effort Sharing Decision
FCPF	Forest Carbon Partnership Facility
FM	Forest Management
FVA	Framework for Various Approaches

GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIS	Green Investment Scheme
GIZ	German Development Agency
GM	Grazing Land Management
KP	Kyoto Protocol
LDC	Least Developed Countries
LULUCF	Land-Use-Change and Forestry
MRV	Measuring, Reporting and Verification
NAMAs	Nationally Appropriate Mitigation Actions
NC	National Communications
NMM	New Market Mechanisms
NIR	National Inventory Report
NZ ETS	New Zeland Emissions Trading System
NZUs	New Zealand Units
OECD	Organization for Economic Cooperation and Development
ODS	Ozonle-Depleting Substances
QUELROs	Quantified Emission Limitation and Reduction Obligations
PPCDAM	Action Plan for the Prevention and Control of Deforestation in the Legal Amazon
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	REDD including sustainable management of forests and enhancement of forest carbon stocks
REM	REDD Early Movers
RMUs	Removal Units
SBI	Subsidiary Body for Implementation
SCCF	Special Climate Change Fund
UN	United Nations
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UN REDD	United Nations Collaborative Initiative on Reducing Emissions from Deforestation and forest Degradation
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
WDR	Wetland Drainage and Rewetting
WRC	Wetland Restoration and Conversation

Zusammenfassung: Ansätze für die Integration von Moor- und Waldschutzmaßnahmen in den Kohlenstoffmarkt

Trotz den rasanten Verlusten der letzten Jahrzehnte weltweit (für Moorböden in Europa: der letzten Jahrhunderte) ist der Bestand an Mooren, Wäldern und Sumpfwäldern immer noch gewaltig. Dass es sich dabei um eine reiche Quelle für Treibhausgasemissionen und ein entsprechendes Einsparpotenzial handelt, ist weithin bekannt, hat aber bisher kaum Niederschlag in den internationalen Bemühungen zur Beschränkung der Erderwärmung gefunden. Insbesondere fehlt es weiterhin an internationalen Anreizsystemen wie den Kohlenstoffmarkt, um Emissionsreduktionseffekte in der für notwendig erachteten Größenordnung zu erzielen.

Die Klimarahmenkonvention der Vereinten Nationen (UNFCCC) steht der Erfassung und Berichterstattung von Emissionen die Landnutzung, Landnutzungsänderung und Forstwirtschaft (LULUCF) grundsätzlich aufgeschlossen gegenüber. Die Entwicklung methodischer Anleitungen zur praktischen Umsetzung indes hat sich über die letzten zwei Jahrzehnte hingezogen und die Praxis der Staaten ist bisher sehr uneinheitlich. Das Kyoto-Protokoll – der an und für sich striktere Rahmen für die Berichterstattung, was die Emissionen der Industriestaaten (Annex-I-Staaten) angeht – hat die Erfassung der LULUCF-Emissionsdaten für die Anrechnung der Emissionsziele (QUELROs) zudem wesentlich beschnitten. Etliche emissionsrelevante Handlungen, darunter die Entwässerung von Moorböden, fallen aus dem Kanon der verbindlichen Anrechnungsgegenstände heraus. Immerhin hat die Konferenz von Durban in einem wegweisenden Beschluss die freiwillige Erfassung von Emission aus Feuchtgebietentwässerung und Wiedervernässung (WDR) für die Anrechnungsziele unter der zweiten Verpflichtungsperode des Kyoto-Protokolls zugelassen.

Die unter dem Kyoto-Protokoll entstandenen Emissionshandelsinstrumente, insbesondere die Projektmechanismen CDM (Mechanismus für umweltverträgliche Entwicklung (CDM) und JI (Gemeinsame Projektumsetzung), haben sich ihrerseits weitgehend außerhalb der Gebiete Moor, Forst und allgemein des LULUCF entwickelt. Der CDM ist auf Aufforstungs- und Wiederaufforstungsprojekte (Sequestrierung) beschränkt, wobei diese allein zeitlich befristete und deshalb schwer handelbare Gutschriften ausschütten. JI hat diese Beschränkung nicht, aber die rechtliche Lage bleibt diffus. In jüngerer Zeit hat das russische *Bikin-Tiger*-Projekt allerdings unter Beweis gestellt, dass JI die Ausschüttung von Emissionsreduktionsgutschriften aus nachhaltigem Forstmanagement zulässt. Der eigentliche International Emissionshandel (IET) mit dem aufgesetzten Konzept der grünen Investition (*Green Investment Scheme*, GIS) ist offen für eine Kopplung mit moor- und forstspezifischen Maßnahmen. Die Praxis hat sich einer solchen Kopplung indes bisher enthalten.

Auch auf EU-Ebene grenzen die klimapolitischen Maßnahmen LULUCF weitgehend aus. Dies betrifft sowohl den Europäischen Emissionshandel (EU ETS) wie auch den Bereich der Anstrengungen der Mitgliedstaaten im Nicht-EU-ETS-Rahmen (*Effort Sharing Decision*, ESD). Neuland hat die EU allerdings mit der Verabschiedung des Beschlusses über die Anrechnung und Verbuchung von LULUCF-Emissionen (EU-LULUCF-Anrechnungsbeschluss) betreten, der dafür Sorge trägt, dass auf mittlere Sicht (der Beschluss sieht abgestufte Umsetzungsfristen vor) alle Mitgliedstaaten die Emissionsdaten aus land- und forstwirtschaftlich genutzten Flächen verbindlich erheben und verbuchen müssen. Wie unter dem Kyoto-Protokoll bleibt die Erfassung von WDR freiwillig, aber das Gros aller moorbezogenen Emissionen bezieht sich ohnehin auf die forst- und landwirtschaftliche Nutzung. Das erklärte Ziel ist, auf lange Sicht LULUCF-Emissionen in die Klimaziele miteinzubeziehen.

Andere Emissionshandelssysteme sind den LULUCF-Emissionen aufgeschlossener, als es der EU ETS ist. An erster Stelle sind in diesem Zusammenhang Neuseeland und der US-Bundesstaat Kalifornien zu nennen. Auch das australische System sah ein LULUCF-Fenster vor; das australische Parlament hat das Emissionshandelsprogramm allerdings aus politischen Gründen in diesem Jahr aufgehoben.

Als Pioniere des Emissionshandels aus LULUF-Projekten haben sich unterdessen die freiwilligen Märkte erwiesen. Insbesondere der *Verified Carbon Standard* (VCS) ist um die konsistente und kohärente Erfassung aller möglichen Projekttypen im Bereich LULUCF bzw. Landwirtschaft, Landnutzung und Forsten (AFOLU) bemüht. Der VCS hat mittlerweile 15 Methoden einschließlich solchen zu Moorerhaltung und

Moorwiederherstellung sowie zum Waldschutz (*Reducing Emissions from Deforestation and forest Degradation*, REDD+) anerkannt, und 80 Projekte weltweit sind in der Entwicklung. Daneben etablieren sich kleinere Standards, darunter die deutschen *MoorFutures* und der *UK Peatland Carbon Code*.

In den Entwicklungsländern, unter denen sich große Moornationen befinden wie Indonesien und Malaysia, hat sich die LULUCF-Diskussion bisher überwiegend um REDD+ bewegt. Daraus ist aus Moorsicht zunächst nichts einzuwenden: Moore und Wälder gehören in vielen Ländern zusammen („Torfwälder") und stehen vor denselben Bedrohungen. Allerdings gibt es auch Unterschiede, die so aus der Diskussion um REDD+ herausfallen. Gerade was die Emissionskurven und –zyklen angeht, unterscheiden sich Moore wesentlich von Wäldern.

In den vergangenen Jahren hat sich REDD+ zu einem eigenen Verhandlungsblock im Rahmen der UNFCCC entwickelt. Ein REDD+-Mechanismus ist noch nicht geschaffen, aber Fortschritte bei der regulativen und eventuell einmal emissionshandelsrelevanten Konstruktion wurden erzielt, maßgeblich auf der Konferenz von Warschau, so bei der Definition von Referenzszenarien, REDD+-Safeguards, bei der nationalen wie der regionalen Umsetzbarkeit. Daneben sind aus der Diskussion wichtige bilaterale und multilaterale Initiativen hervorgegangen, darunter das *United Nations Collaborative Programme on Reducing Emissions from Deforestation and forest Degradation* (UN REDD) und die *Forest Carbon Partnership Facility* (FCPF). Mehr als 50 Staaten sind mit der nationalen REDD+-Umsetzung beschäftigt.

Zu den umstrittenen Punkten in den REDD+-Verhandlungen zählten lange die Verfahren der Berichterstattung und Verifizierung (MRV) sowie die Verknüpfung von REDD+ mit dem Emissionshandel. Die Konferenz von Warschau dürfte mit der Verabschiedung des so genannten „REDD+-Rahmens von Warschau" den Streit um MRV im Wesentlichen beigelegt haben. Die emissionshandelsrechtliche Frage allerdings ist nach wie vor ungelöst.

Die politischen Unwägbarkeiten der letzten Jahre haben viele Beteiligte ermüdet, darunter viele REDD+-Empfängerländer (‘*readiness fatigue*’). Neuen Elan verspricht man sich von Experimenten wie `*Result-Based REDD´* – s. etwa die REDD Partnerschaft zwischen Indonesien und Norwegen und das *REDD-Early-Movers*-Programm der Bundesregierung.

Die Konferenz von Lima im Dezember 2014 hat kaum Neues produziert zu den Themen REDD+, Landnutzung und Marktmechanismen. Allerdings haben sich die Staaten auf einen ersten Entwurf des 2015-Abkommens (Pariser Abkommen) geeinigt, in dem das meiste noch strittig ist, der aber doch erste Gestaltungselemente erkennen und erwarten lässt, dass die Landnutzung einen grundsätzlich neuen Zuspruch als Zielgegenstand für Minderungs- und Anpassungsmassnahmen erfahren wird.

A. Handlungsoptionen für die Industriestaaten (Annex I und EU)

Die gegenwärtig laufenden Verhandlungen für einen Post-Kyoto-Rahmen, die Ende 2015 in Paris (COP 21) zur Verabschiedung eines rechtlichen Abkommens führen sollen, geben Raum auf moor- und forstspezifische Maßnahmen abzielende Anreizsysteme zu schaffen. Dies kann auf der Ebene der Berichterstattung wie auf der Ebene finanzierungsbezogener Mechanismen erfolgen. Im Nachgang zur Konferenz von Lima (2014) zeichnet sich wiewohl ab, dass es die ‚Big-Bang'-Lösung in Paris weder mit Blick auf die Berichterstattung und Anrechnung noch mit Blick auf Märkte nicht geben wird. Vielmehr dürfte das Pariser Abkommen den Auftakt markieren für die Formulierung detaillierter Regelungen in den Jahren danach, ähnlich wie einst die Verhandlungen von Marrakesch im Jahre 2001 erst die Anwendungsregeln für das Kyoto-Protokoll aus dem Jahre 19997 hervorbrachten.

Auf europäischer Ebene freilich können die Gemeinschaft und die EU-Mitgliedstaaten eigene Politikinstrumente zur Minderung von Emissionen im LULUCF-Bereich entwickeln.

Auf internationaler Ebene bietet sich an (Option A-1), dass (i) moorspezifische Emissionen verbindlich angerechnet werden (in der Kategorie WDR bzw. als Teil landwirtschaftlicher Emissionen, wenn diese ver-

pflichtend anzurechnen sind), (ii) bodenbezogene Emissionen streng von anderen dem Boden nicht immanenten Emissionen (etwa Düngemittel) zu trennen, (iii) gleichzeitig im Rahmen der Berichterstattung die Interdependenz von Emissionen und Emissionsquellen nach den Grundsätzen von Transparenz, Einfachheit und Äquivalenz zu gewährleisten (auch mit Blick auf eine Gleichbehandlung etwa von makroökonomischer *Force Majeure* und natürlichen Störungen („*natural disturbances*")) sowie die Anwendung eines fixen Basisjahres (bzw. einer abgestimmten Basisperiode) für alle Sektoren und die Zugrundelegung der „Net-Net"-Berechnungsmethode für alle LULUCF-Emissionen.

Option A-2 betrifft die Verbesserung des institutionellen Vermögens insbesondere auf Staatenebene. Hier werden Mechanismen zum intensiveren „*capacity-building*" und Umsetzungshilfen für Staaten bei der Berichterstattung vorgeschlagen.

Option A-3 behandelt Anrechnungs- und Emissionshandelsfragen. Eine mögliche Variante ist, LULUCF-Emissions- und Senkenwirkungen in Gänze mit den Emissionen aus anderen Sektoren zu verschmelzen, eine andere, einen LULUCF-eigenen Verpflichtungsrahmen zu schaffen. Letztere Variante würde eine Reihe technischer Probleme aus dem Weg räumen, darunter die unterschiedlichen Anforderungen an Additionalität und Langlebigkeit oder Permanenz (insbesondere von Senkenleistungen), divergierende Kohlenstoffzyklen und komplexe Fragen der Berichterstattung. Eine LULUCF-Separatlösung könnte auch so aussehen, dass die Staaten sich auf Zielvorgaben ohne Verpflichtungscharakter einigen, wobei es dann Staaten möglich sein sollte, ein schärferes Regime für moorbezogene Emissionen – die schon wegen ihrer geographischen Ausdehnung besser zu kontrollieren sind als andere LULUCF-Kategorien – im Wege eines „*Nesting*" zu schaffen.

Option A-4 greift den existierenden JI-Mechanismus auf und besteht darin, diesen für moorspezifische Maßnahmen weiter zu öffnen, insbesondere durch eine regulative Anwendungsbestätigung (Emissionsreduktionen durch Schutz- und Wiedervernässungsmaßnahmen *sind* als JI-Projekt anrechenbar) und dass die so generierten Emission Reduction Units (ERUs) aus *Assigned Amount Units* (AAUs), nicht etwa *Removal Units* (RMUs) gespeist werden.

Das Risiko der Freisetzung von Kohlenstoff („Permanenz-Problem") unterscheidet sich, je nach dem, ob es um das Risiko der Reversibilität von Sequestrierungsleistungen (eigentliches Permanenz-Problem) oder um die nachträgliche Vernichtung des Senkenbestandes („Stock-Loss-Problem") handelt. Für die Reversibilität der Sequestrierungsleistungen ist das Permanenz-Problem anerkannt. Für den Fall des Bestandsverlusts ist es umstritten. Oftmals erweist sich das Permanenz-Problem indes realiter als eine Frage der Zurechnung und Haftung. Für den Bereich von JI beispielsweise kommt es für die Emissionsfestigkeit insgesamt nicht darauf an, ob ein moorbasiertes JI-Projekt nachträglich die Senkeneigenschaft verliert, da sich am Emissionsglobalbudget des Staates nichts ändert. Ob der Staat ein eventuelles Ausfallrisiko selbst trägt oder es auf den Projektbetreiber überträgt, ist allein eine Frage der Haftung.

Option A-5 widmet sich der Überführung des JI-Mechanismus´ hin zu einem sektoralen Ansatzes. Dieser ähnelt dem oben diskutierten Verpflichtungsrahmen für moorbezogene Emissionen. Teilnehmende Staaten hätten sich dabei auf Globalziele je Staat (für das gesamte Staatsgebiet oder für einzelne Regionen) zu einigen, die Berechnung von Minderungsmaßnahmen und Gutschriften sowie MRV. Die Einbeziehung von privaten Akteuren (beispielsweise Landeigner) ist möglich, begegnet aber erheblichen Schwierigkeiten. Die Umsetzung auf Staatenebene indes – ähnlich der Vorgehensweise bei der EU-Effort-Sharing-Decision – ist ohne größeren Aufwand möglich.

Option A-6 unternimmt eine kursorische Prüfung der Wechselwirkungen zwischen der emissionshandelsmäßigen Erfassung von LULUCF-Maßnahmen und der Verknüpfung von Emissionshandelssystemen („Linking") und formuliert Minimalanforderungen an die jeweilig zu verknüpfenden Systeme, um insgesamt kompatibel zu sein und aus der Verknüpfung insgesamt Gewinn zu ziehen.

Die Optionen A-7 bis A-10 widmen sich der EU-Ebene, die sich bisher eher reserviert gezeigt hat, was die Einbeziehung von LULUCF in emissionshandelsrechtliche Instrumente betrifft. MRV, Permanenz und hohe CO2-Fluktuationsraten sowie die Risiken der Marktüberflutung und die technischen Schwierigkeiten, hun-

derttausende Landeigner in ein etwaiges System aufzunehmen, hat dazu geführt, dass bis heute sowohl der EU ETS- als auch der ESD-Rahmen LULUCF-Emissionen ausgrenzen.

Eine Möglichkeit, diese Ausgrenzung aufzuheben und den technischen Schwierigkeiten zu begegnen, besteht darin (Option A-7), einen Moor-Emissions-Mechanismus unter Artikel 24 a EU ETS zu schaffen. Blaupausen für die regulative Behandlung gibt es, und der Aufwand, diese an die spezifischen EU ETS- und ESD-Verhältnisse anzupassen, ist gering. Eine Herausforderung besteht vielmehr darin, dass der heutige Marktpreis für Emissionsrechte in vielen Fällen kaum moorbezogene Projekte finanzieren kann. Erfahrungen mit dem deutschen Standard *MoorFutures* zeigen, dass die Preise der Gutschriften erheblich über den Marktpreisen liegen. Je weiter der Marktpreis steigt, desto größer die Aussichten für kostendeckende Projekte. Die EU- Mitgliedstaaten könnten den Absatz moorbezogener Gutschriften auch durch hybride Finanzierungskonzepte stützen, etwa dadurch dass landwirtschaftliche Nutzer verpflichtet werden, einen Moorschutz-Fonds aufzusetzen, der dann gezielt Gutschriften aus Moorprojekten einkauft.

Eine weitere Option besteht darin (Option A-8), moorbezogene Emissionen in den ESD-Zusammenhang mitaufzunehmen. Dies könnte am ehesten dadurch geschehen, sämtliche LULUCF-Emissionen aufzunehmen. Gelegenheit bietet sich mit der Neufassung der ESD unter der 2030-Rahmenprogramm zu Klima und Energie, auf den sich der europäische Rat im Oktober 2014 verständigt hat. Konkrete moorspezifische Interventionen könnten dann über Artikel 24 a EU ETS abgewickelt werden oder über moorbezogene *Green Investment Schemes*, die an den Handel mit den *Annual Emission Allocation Units* (AEAs) geknüpft würden.

Option A-9 beinhaltet die Schaffung eines eigenen Verpflichtungssystems für moorbezogene Emissionen oder – im weiteren Sinne – für LULUCF-Emissionen. Eine Grundlage bietet dabei der EU-LULUCF-Anrechnungsbeschluss.

Eine weitere Option (Option A-10) besteht in der Einführung eines Hybridsystems, bei dem ein Moor-Gutschrift-Mechanismus mit anderen EU-Steuerungsinstrumenten – etwa der Energie-Effizienz-Richtlinie – verknüpft werden.

Die Optionen A-11 bis A-14 heben auf die Lage in den EU-Mitgliedstaaten ab und beinhalten die Einführung einer Reihe von „weichen“ Anreizsystemen zur Stärkung der „ökologischen Wettbewerbsfähigkeit“, darunter der Aufbau nationaler Inventare zu Moorflächen und –emissionen (Option A-11), die verbesserte nationale Durchsetzung des „Cross-Compliance“-Mechanismus in der Gemeinsamen Agrarpolitik (Option A-12), die verstärkte Werbung für Paludikulturen (Option A-13) und die Auslobung von bezuschussten Wiedervernässungsprojekten mit unterschiedlichen Laufzeiten (10-15 Jahre, 15-30 Jahre, mehr als 30 Jahre) verknüpft mit einer Altnutzungsgarantie nach Ablauf (Option A-14). Solche Projekte schaffen einen erheblichen Klimagewinn ohne grundsätzliche Reversibilitätsrisiken und halten die Kosten für die Beteiligten gering.

Schließlich zeigt sich Handlungsbedarf auch für den freiwilligen Markt. Der bisherige Permanenz-Ansatz wird dem Umstand nicht gerecht, dass die Risiken bei Sequestrationsprojekten einerseits und Emissionsreduktionsmaßnahmen andererseits verschieden sind, wobei sich auch empfiehlt, Projekte mit kurz- und mittelfristigen Projektlaufzeiten zuzulassen, die wohlgemerkt einen Langzeiteffekt für das Klima entfalten (Option A-15). Daneben sollte der VCS in die Aufarbeitung der verschiedenen Methoden im LULUCF-Bereich investieren mit dem Ziel, einen Methoden-Baukasten zu schaffen, aus dem sich Projektentwickler mit einzelnen, schlüsselfertigen Bausteine bedienen könnten (Option A-16). Auf Staatenebene (Option A-17) könnten freiwillige Projekte durch eine Markt-Fazilität unterstützt werden, die *Know-How* vermittelt, aber Projekte auch materiell unterstützen könnte (etwa durch die Leistung einer Vor- oder Zwischenfinanzierung oder durch den Aufbau eines moorspezifischen Fonds zur Ko-Finanzierung). Schließlich können staatliche Stellen auf unterschiedlichen Ebenen den Absatz von Gutschriften aus Moorprojekten fördern, indem sie eigene sektorspezifische oder Emissionshandelssysteme auf kommunaler oder Länderebene schaffen (Option A-18).

B. Handlungsoptionen für Entwicklungsländer (Non-Annex-I)

Marktgestützte Steuerungsmittel und im Besondern die Kohlenstoffmärkte als Beitrag zur internationalen Klimafinanzierung stoßen auf breite Zustimmung. Dennoch ist es bisher nicht gelungen, die alten Mechanismen CDM und JI marktfähig zu halten oder gar neue Mechanismen zu schaffen, die den projektgestützten Ansatz hin zu breit angelegten Interventionen mit hohen Reduktionsquoten transformieren könnten. Die Verhandlungen zu neuen Marktmechanismen angelegentlich der COP 19 in Warschau wurden vertagt nach Lima (COP 20). Diskutiert werden die Modelle eines „Neuen Markt-Mechanismus“ (NMM) sowie eines „Rahmens für variable Ansätze“ (Framewor for Various Approaches, FVA), wobei noch kaum Klarheit über die möglichen Konturen herrscht. Der NMM kommt den alten Mechanismen am nächsten. Er wird meist als zentralisiertes System gesehen, das Gutschriften erzeugt gegenüber einer im Vorhinein festgelegten Baseline. Meinungsverschiedenheiten bestehen darüber, inwieweit diese Quote sektorweit ermittelt werden soll (statt projektbezogen) und wie anspruchsvoll sie zu formulieren ist. Der FVA dagegen scheint eher die Funktion eines internationalen Clearing-Hauses einzunehmen, das die Vergleichbarkeit und den Austausch verschiedener Emissionsreduktionseinheiten erlaubt.

REDD+ und andere LULUCF-Interventionen könnten nach Vorstellung vor allem der waldreichen Entwicklungsstaaten einen Platz im NMM und im FVA einnehmen. Eine einvernehmliche Position dazu gibt es freilich noch nicht. LULUCF-Interventionen spielen eine bedeutende Rolle bei der Erarbeitung der so genannten *National Appropriate Mitigation Actions* (NAMAs), von Entwicklungsstaaten vorgeschlagene Mitigations- und Finanzierungspläne, die ihrerseits künftig an die Mechanismen NMM und FVA angeschlossen werden könnten.

Ein echter REDD+-Mechanismus könnte sich indes aus den separaten REDD+-Verhandlungen ergeben. Hier gibt es Meinungsverschiedenheiten dazu, ob Marktmittel überhaupt adäquate Instrumente für nationale Wälder sind und inwiefern REDD+-Minderungsmaßnahmen als Gutschriften in die Emissionsbilanzen der Industriestaaten eingehen dürfen. Darüber hinaus gibt es wiewohl konkrete Vorschläge zu zwischenstaatlichen Handelsmodellen, solchen unter Einbindung von Privaten und regionalen Programmen mit besonderen Projektfenstern („*nesting*“). Die Diskussion um Minderungsmaßnahmen von Mooren hat bisher nur wenig Niederschlag in den REDD+-Verhandlungen gefunden, aber die „Verhandler“ sensibilisieren sich zunehmend für das Thema, nicht zuletzt seitdem WDR einen Platz im Rahmen des Kyoto-Protokolls gefunden hat.

Zu den untersuchten (kumulativ, nicht alternativ zu verstehenden) Handlungsoptionen gehören ein verbessertes und verfeinertes System der Berichterstattung (Option B-1), ein um Moor- und Forsterhaltungsmaßnamen erweitertes CDM, wobei das Permanenz- bzw. Haftungsproblem über einen Puffer oder ein Versicherungssystem gelöst werden kann (Option B-2).

Option B-3 befasst sich mit der Integration eines Moor-Fensters in einem zukünftigen REDD+-Mechanismus. Unter diesem Fenster würden Moorerhaltungs- und –restaurierungsmaßnahmen anerkannte Projektkategorien und Referenzszenarien würden an die Situation angepasst, dass entwässerte Moore kontinuierliche Emissionsquellen abgeben. Aktivitäten, die eine Moorentwässerung herbeiführen oder den organischen Boden degradieren (etwa durch bestimmte forstwirtschaftliche Maßnahmen) würden vom REDD+-Mechanismus ausgeschlossen.

Option B-4 greift die Möglichkeit auf, einen sektoralen Ansatz mit NMM oder FVA zu verbinden. Teilnehmende Staaten erhalten eine Zielvorgabe für die nationalen Moorflächen insgesamt. Übererfüllung der Quote kann in Gutschriften transponiert und an teilnehmende Staaten veräußert werden.

Option B-5 beinhaltet die Einsetzung eines Moor-Hot-Spot-Mechanismus´, in dem sich die moorreichen Staaten zu konzertierten Minderungsmaßnahmen zusammenfinden. Zwölf Staaten weltweit (darunter drei EU-Mitgliedstaaten) teilen sich mehr als 80% der moorbezogenen Emissionen. 36 Staaten (darunter 10 EU-Mitgliedstaaten sowie Island) stehen für mehr als 95% der moorbezogenen Emissionen. Ihr Zusammenschluss in einem Hot-Spot-Mechanismus kann im Rahmen der UNFCCC oder auch außerhalb erfolgen. Ein Gutschrift-und-Handelssystem würde zusätzliche Finanzmittel für (vor allem) ärmere Staaten bereitstellen.

Optionen B-6.1 bis B-6.3 betreffen den europäischen Emissionshandel und Möglichkeiten für die Zusammenarbeit mit moor- und waldreichen Entwicklungsstaaten. Diese Optionen würden vor allem dann relevant,

wenn die Verhandlungen zum 2015-Abkommen scheitern oder zu einem wenig zufriedenstellenden Ergebnis führen sollten. Unter Option B-6.1 würde der EU-LULUCF-Anrechnungsbeschluss als Vorlage dienen für eine „LULUCF-Partnerschaft“, wobei das Partnerland (Drittstaat) unterstützt würde bei der synchronen Anwendung der neuen Anrechnungsregeln der EU. Diese Option würde auf eine zukünftig engere Verknüpfung im Sinne eines Handelssystems vorbereiten.

Option B-6.2 könnte auf die Option B-6.1 aufsatteln oder aber gleichzeitig entwickelt werden. Hierbei würde ein REDD+- bzw. ein Moor-Mechanismus – unter Beachtung des bisherigen REDD+-Rahmens mit Vorschriften zu MRV, Safeguards, etc. – definiert, auf dessen Grundlage Projekte in einem Partnerstaat (Drittland) entwickelt und Gutschriften in die Effort Sharing Decision gehandelt werden können. Institutionell wäre die Europäische Kommission auf EU-Seite zuständig. Allerdings ist es auch denkbar, dass die Leitung einem oder mehreren Mitgliedstaaten übertragen würde.

Option B-6.3 würde wie Option B-6.2 auf eine Partnerschaft mit einem oder mehreren Drittstaaten sowie auf ein Gutschriftverfahren angelegt. Hierbei würde die Verknüpfung allerdings mit anderen Politikfeldern und Steuerungsinstrumenten erfolgen, etwa der Erneuerbare-Energien-Richtlinie oder dem „Cross-Compliance“-System der Gemeinsamen Agrarpolitik, für die die Moor- oder REDD+-Gutschriften als flexible Mechanismen bereitstünden.

C. Evaluierung der Handlungsoptionen und abschließende Empfehlungen

Im abschließenden Kapitel werden die dargestellten Handlungsoptionen nach Gesichtspunkten der (i) Umweltverträglichkeit, (ii) Fairness und Inklusion, (iii) institutioneller und sonstiger Kosten, (iv) Effektivität/Marktgesichtspunkte sowie (v) politischer Machbarkeit ausgewertet und daraus Empfehlungen für die Verhandlungsposition der Bundesregierung und der EU insgesamt abgeleitet. Die Evaluationsergebnisse werden nach „stark“, „mittelstark“ und „schwach“ sortiert.

Insgesamt erweisen sich die dargestellten Handlungsoptionen als eher stark und mit brauchbaren Ergebnissen bei der Frage der politischen Machbarkeit. Damit bestätigt sich das methodische Vorgehen, das stets von den Zielen der Praktikabilität und Effektivität geleitet war. Es bestärkt auch die Perspektive auf den 2015-Prozess: Es gibt eine Reihe effektiver und realistischer Vorschläge, die es lohnt umzusetzen.

Einige der vorgeschlagenen „weichen“ Maßnahmen – darunter die Stärkung des institutionellen Rahmens bei der Berichterstattung, die Anpassung der Laufzeit bei freiwilligen Projekten und die Entwicklung von schlüsselfertigen methodischen Baukästen – lassen sich ohne Schwierigkeiten umsetzen und sollten Eingang in den politischen Fahrplan der Bundesregierung bzw. der EU finden.

Mehrere Vorschläge zeigen gute Sachergebnisse, liegen aber zu weit hinten auf der Verhandlungsagenda für Paris (COP 21), dass eine Berücksichtigung für das 2015-Abkommen in Frage kommt. Dessen ungeachtet empfiehlt sich, diese Vorschläge für die mittel- und langfristige Umsetzung vorzumerken und in den einschlägigen Foren weiterzuverfolgen. Zu diesen Vorschlägen zählen etwa jener zur Aufgabe der Senkenanrechnung im Bereich der nachhaltigen Forstwirtschaft und dem Konzept der „klimaneutralen“ Holzprodukte, aber auch der Vorschlag zur konsequenten Anrechnung von Naturereignissen und jener zur einheitlichen Anrechnungsmethode („gross/net“ oder „net/net“ oder Referenzszenarien).

Andere Vorschläge zeigen in der technischen Auswertung ein gemischtes Bild. Die teils schwachen Ergebnisse erklären sich hier vor allem aus Fragen des institutionellen Aufwandes, aber auch aus der noch nicht zureichend erfolgten Präzisierung und Schärfung des jeweiligen Ansatzes. Zu dieser Gruppe zählen die Verpflichtung auf Anrechnung von Emissionen aus Moorböden und die Einrichtung eines REDD+-Mechanismus´ mit Moor-Schwerpunkt. Es empfiehlt sich, dass die deutschen und EU-Entscheidungsträger die Vorschläge fortentwickeln und – eventuell als Teil des größeren „Deals“ – in den Verhandlungsfahrplan für Paris (COP 21) mit aufnehmen.

Schließlich zeigen sich bei einigen der Vorschläge gewisse Herausforderungen, aber dank ihrem hohen Transformationspotenzial verdienen sie besondere Beachtung und empfehlen sich aus unserer Sicht für eine tiefere Analyse seitens der Bundesregierung und der EU. Zu diesen Vorschlägen zählen insbesondere die

Entwicklung eines sektoralen Moor-Ansatzes als Teil des NMM bzw. des FVA („Moor-Markt-Mechanisms“, MMM) sowie – auf EU-Ebene – die Einbeziehung von LULUCF in den ESD-Rahmen und die Schaffung von moorbezogenen Anreizen über an die GIS angelehnten Grüne Moor-Investitions-Programme (*Green Peat Investment Schemes*, GPIS).

Ein Moor-Markt-Mechanismus ließe sich auf der Grundlage von Überlegungen, die zu REDD+ angestellt wurden, aber auch in Abgrenzung dazu entwickeln. In der methodischen Arbeit, dem Monitoring und der Definition von Referenzszenarien müssen die moorspezifischen Gesichtspunkte eingebracht werden. Das vielleicht stärkste Argument für die Schaffung eines MMM außerhalb von REDD+ wäre die Möglichkeit, etwaige Gutschriften mit moorbezogenen Emissionen in Industriestaaten zu verknüpfen und so einen echten Moor-Emissions-Markt zu schaffen. Beispielsweise könnten Island und Malaysia sich in einem bilateralen MMM-Fenster auf 10-Jahres-Emissionsziele für landesweite Mooremissionen verständigen. Die eigenen nationalen Anstrengungen könnte Island dann mit einem Einkaufsprogramm von solchen Emissionsgut-schriften Malaysias kombinieren, die aus der Übererfüllung der für Malaysia gesetzten Quote entstehen.

Wir empfehlen, dass die Bundesregierung und die EU die Entwicklung eines MMM wegen des hohen Minderungspotenzials und den Chancen für einen unmittelbaren Mooremissionsmarkt vorantreiben. Zu erwägen wären in diesem Zusammenhang auch, den MMM als ein Pilotsystem für die weitere Entwicklung von NMM und FVA aufzusetzen. Sollte das 2015-Abkommen lediglich einen Platzhalter für neue Marktmechanismen enthalten, sollten die Bundesregierung und die EU darauf dringen, dass in diesem LULUCF allgemein und moorbezogene Emissionen im Besonderen als prioritäre Zielsektoren anerkannt werden. Hilfsweise empfiehlt sich auch die Etablierung von Moormaßnahmen unter den Projekttypen des CDM. Sollten die internationalen Verhandlungen insgesamt ohne Ergebnis für die Schaffung von Anreizmaßnahmen für die Bereiche LULUCF und Moore bleiben, sollten die Bundesregierung und die EU auf die Etablierung von bilateralen Moor-Partnerschaften dringen.

Auf EU-Ebene bietet die Einbeziehung von LULUCF-Emissionen in den ESD-Rahmen erhebliche Chancen für die mittelbare Steuerung von Emissionsminderungsmaßnahmen. Gerade was die Anwendung von flexiblen Mechanismen betrifft, dürfte aus einer Marktperspektive die Erweiterung es ESD-Rahmens auf LULUCF der Separatlösung für LULUCF vorzuziehen sein. Zu erwägen ist, zunächst eine Versuchsphase zu organisieren (bereits vor dem Jahr 2020), in der die Mitgliedstaaten Schattenhaushalte für die LULUCF-Emissionen führen und die grundsätzliche Vereinbarkeit der Emissionstypen nach Variabilität, Monitoring und anderem testen. Sollte die Versuchsphase positiv enden, bietet sich eine volle Einbeziehung der LULUCF-Emissionsbudgets in die ESD an.

Es gilt in diesem Zusammenhang zu erinnern, dass die ESD keine eigenen projektbasierten Mechanismen bereitstellt. Solange ein Instrument nach Artikel 24 a EU ETS nicht bereitsteht, kommt es auf die Mitgliedstaaten an, etwaige Transaktionen von AEAs mit GPIS zu interlegen.

Im Falle, dass das 2015-Abkommen nicht bzw. nur unter Verzicht auf Emissionshandelsinstrumente zustande kommt, sollten die Bundesregierung und die EU dazu übergehen, bilaterale Arrangements mit Drittstaaten aufzubauen, unter denen emissionshandelsgedeckte Moorinterventionen durchgeführt werden können. Ziel soll es in dem einen wie dem anderen Falle sein, langfristig ein marktgestütztes Anreizsystem zu schaffen, um Moore weltweit nachhaltig zu schützen und wieder aufzubauen.

Summary: Peatlands, Forests and the Climate Architecture: Setting Incentives through Markets and Enhanced Accounting

Despite rampant historic losses, peatlands and forests are still abundant across the globe. Nonetheless, they have long been largely ignored as a powerful source for GHG emissions and potential target for dedicated policy intervention. While the United Nations Framework Convention on Climate Change (UNFCCC) provides generic and comprehensive accounting and reporting frameworks for human-induced land use, land-use change and forestry (LULUCF) activities, accounting methodologies have been slow to develop, and reporting outside the Kyoto Protocol – the regulatory framework, which so far imposes the strictest reporting rules, applicable to developed countries (Annex I Parties) only – has been patchy. Reporting under the Kyoto Protocol, while by and large consistently applied by Annex I Parties, is more robust, but limited in scope. Important areas of LULUCF related activities fall outside what constitutes a country's quantitative emission limitation and reduction objective (QUELRO), and vast emissions – including from drained peatlands, an abundant emissions source in many developed countries – go unaccounted for. In a landmark decision in 2011 (Durban), the Kyoto Protocol Parties for the first time decided to allow for voluntary accounting of wetland drainage and rewetting (WDR) activities.

The Kyoto Protocol's carbon market instruments mirror the accounting framework, in that there are important limitations in scope. The Clean Development Mechanism (CDM) permits afforestation and reforestation (A/R) interventions only. Joint Implementation (JI), the flexible mechanism which relates to Annex I Parties only, is broader in scope and may well apply to emission reduction intervention in peatlands, but the regulatory framework, as it stands, is not absolutely clear. Practical experience with (registered) JI interventions in the LULUCF sectors is so far confined to the *Bikin Tiger* project, a sustainable forestry management intervention in Russia. International Emissions Trading (IET) and the concept of green investment schemes (GIS) are flexible enough to accommodate peatland and forest related interventions, but so far there is little country precedence, if any.

There is a notable absence of LULUCF emissions related accounting, and interventions, in the European Unions emissions trading schemes, the EU Emissions Trading Scheme (EU ETS), on the one hand, and the trading scheme under the Effort Sharing Decision (ESD), on the other. Following the UNFCCC decision of Durban (2011), however, the EU recently expanded its rules on accounting, with a specific (voluntary) window for WDR, and with the stated long-term objective to include emissions from LULUCF in national emissions targets.

Other domestic trading schemes, especially those established in Australia, the United States (California) and New Zealand, are more open in their architecture towards the inclusion of LULUCF related emissions, and a number of offsetting protocols and methodologies, including on peatlands, are under development.

However, the most advanced framework for the integration of peatlands and forestry interventions (outside A/R) in the carbon markets so far is provided by voluntary campaigns, notably the *Verified Carbon Standard* (VCS), which has generated 15 methodologies including on peatland conservation and restoration, and more than 80 projects in the fields of agriculture, land use and forests (AFOLU). The list of methodologies and projects include interventions in peatlands and from 'reducing emissions from deforestation and forest degradation' ("REDD") and "REDD+", respectively, the "+" indicating the elements of sustainable management of forests and enhancement of forest carbon stocks. Other voluntary standards exist or are at pilot phase, among them those with an exclusive focus on peatlands rewetting and restoration. The German *MoorFutures* standard has been operational since 2011, the *UK Peatland Carbon Code* is in its final development stage.

In developing countries LULUCF related emissions, including from peatlands, are even more important than in developed countries both in absolute and in relative terms. For a number of years, almost exclusive attention has been given to REDD+ rather than peatlands. This said, forests and peatlands often go hand in hand,

and often follow a similar fate of deforestation, drainage and degradation. Important differences remain, however, in particular concerning emissions curves and cycles.

Over recent years, REDD+ has emerged as one of the main negotiation blocks between UNFCCC Parties. While a *REDD+ mechanism* proper or carbon market instrument has not yet been established, progress has been made on many fronts including the calculation of forest emission reference levels, REDD+ safeguards, REDD+ implementation phases and jurisdictional approaches. Strong bilateral and multilateral activities have supported the REDD+ development, among them *United Nations Collaborative Initiative on Reducing Emissions from Deforestation and forest Degradation* (UN REDD) and the *Forest Carbon Partnership Facility* (FCPF). Some fifty mostly tropical countries have started building a REDD/REDD+ implementation framework, supported by a large number of developed countries.

One of the most contentious issues in REDD+ negotiations – the establishment of a strong measuring, reporting and verification (MRV) framework – may have been solved with the adoption, at COP 19 in Warsaw, of the "Warsaw Framework for REDD+". However, importantly, the integration of REDD+ in the international carbon markets is far from settled. "Appropriate market based approaches" are being considered by the Conference of Parties (COP), with some countries strongly backing the establishment of a REDD+ crediting mechanism, other countries strongly rejecting it, and yet other countries approving of crediting and markets in principle, but rejecting offsetting for developed country Parties.

These political differences have contributed to the impasse in international negotiations on REDD+ – noticeable despite the many advances the international REDD+ discussions have made. While an increasing number of countries experience a REDD 'readiness fatigue', common ground is emerging around the concepts of result-based action and result-based funding, on the one hand, and an increased use of sub-national (jurisdictional) approaches, supported through bilateral initiatives and voluntary campaigns, on the other. The biggest result-based finance initiative involving peatlands in developing countries (in volume and cash earmarked), however, remains the *REDD+ Partnership* between Norway and Indonesia.

The Lima Conference of December 2014 produced few new rules of substance in the areas of REDD+, land use and market mechanisms. However, Parties agreed on the first draft negotiation text for the 2015 agreement (Paris Agreement). While few details are settled, several structuring elements emerge, and it appears that LULUCF will play an important role both for the mitigation and the adaptation agenda.

A. Policy Options for Industrialized Countries (Annex I and EU)

The ongoing negotiations of a post-Kyoto framework, in particular, set to be concluded by 2015 ("2015 agreement"), offer opportunities to create such incentives through modifications of the international reporting and accounting framework as well as through the enhancement of dedicated climate finance mechanisms. It should be noted that the 2015 agreement will probably not incorporate a "big-bang"-solution for the wide range of issues including LULUCF accounting and the creation of ready-to-go market instruments. Rather, much in the tradition of the Kyoto Protocol of 1997, which laid the groundwork for the adoption of the implement-ready Marrakesh Accords four years later, one can expect the conference of Paris to become a milestone and, perhaps, a game-changer for future rulemaking, but those future rules will be developed and adopted only in subsequenet years..

Thus, the present study, in exploring concrete policy options, is meant to inform the post-Paris process more than the Paris text itself.. All the options presented are not to be understood as exclusive; rather they are cumulative, at least in so far as they target different action levels, namely accounting, indirect funding, and implementing mechanisms:

Option A-1 relates to the field of reporting (i.e. the tracking of emissions) and accounting (i.e. the calculation of emissions against a baseline or a target) and targets improvements, which would include (i) mandatory reporting of peatland related emissions (under the category of Wetland Drainage and Rewetting, WDR, as long as Cropland Management and Grazing Land Management are not mandatorily accounted); (ii) coherent

and comprehensive concentration of land associated emissions, distinguishing direct land (soil and biomass) emissions and those sources and pools that are not or no longer (unequivocally) bound to the land (such as fertilizers); (iii) the adoption of a holistic reporting and accounting approach that focuses on the inter-dependency of sectors and that allocates (accountable) emissions according to principles of transparency, simplicity and equivalency (including concerning the treatment of natural disturbances and *force majeure*); and (iv) the use of a common historical period (base year or period) as accounting reference for all land associated emissions and removals and for all accounting categories (net-net accounting, see table 1). Harmonization of accounting for LULUCF emissions within the different accounting frameworks (today the UNFCCC and the Kyoto Protocol) and with other sectors should be a priority.

Option A-2 looks at institutional capacity to accurately account for LULUCF related emissions, which has been lacking in the past, in particular at the country level. Capacity building and procedural facilitation – through enhanced reporting, assistance and oversight – is paramount.

Option A-3 concerns accounting and carbon trading proper. Harmonizing accounting of LULUCF with other sectors ultimately aims at the creation of an all-GHG-emissions inclusive compliance framework. However, the establishment of a LULUCF-exclusive compliance framework remains an option and would address a number of barriers associated with the LULUCF sectors such as additionality, longevity of emissions (permanence of carbon sequestration), longer-term carbon cycles, and accounting uncertainty. Furthermore, within a separate LULUCF compliance framework, peat-rich industrialized countries could "nest" a dedicated and peat compliance regime. This sub-option is of particular interest in the event that the 2015 agreement will not lead to a firm (binding) LULUCF compliance framework but to a looser form of contribution (e.g. pledges).

Option A-4 starts from an assessment of Annex I-country specific mechanisms. We see an opportunity to stimulate peatland restoration and conservation measures through a reformed JI mechanism. Recommended changes to the existing JI structure include a regulatory confirmation that emission reductions from peatland rewetting and conservation represent an accepted project category, and that related emission reduction units (ERUs) may be obtained from assigned amount units (AAUs), which are altogether more liquid than removal units (RMUs).

One of the much-discussed issues in the context of crediting of LULUCF-related activities is "permanence", i.e. the risk inherent in carbon stocks that they may be released in the future thereby nullifying any carbon sink efforts realized. The problem is permanence is recognized for activities, where sequestration measures are credited; it is contested for emission reduction activities, for which it may be argued that a future stock loss is not a reversal of previously credited sequestration efforts, but a separate emissions incident. While the study discusses the merits of the argument, it is noted that in most cases the underlying issue is not one of permanence but one of liability. Credited activities under JI, for instance, are backed by a liability of the host country (from whose global emissions budget, the JI credits are converted). The respective country then needs to decide whether it retains this liability or whether it shifts it to project developers.

Option A-5 translates the project-based JI mechanism to a sectoral Annex I approach. Such a scaled-up mechanism for peatland restoration and conservation would be similar in design to a dedicated peat compliance framework. Participating countries would set targets and a string of measures, and the use of units and credits would be pre-defined. Countrywide implementation is not without challenges, when it comes to setting up and enforcing a robust MRV framework and, in particular, should countries choose to involve individuals (e.g. farmers) directly. A sectoral mechanism at the government level – similar to the 2009 Effort Sharing framework within the EU – seems feasible, however.

Option A-6 involves a cursory assessment at opportunities from "linking". Considerable market benefits for peatland interventions may flow, in the long run, from the connection of two or more emissions trading schemes in a horizontal way. The hurdles for linking systems of which one has exposure to LULUCF – and possibly peatlands – related units or credits are high, however. Other than meeting general requirements such as system reliability, equivalence in ambition, and overall compatibility, the coverage of LULUCF (and peat-

lands) interventions in an offset constellation would undergo particular scrutiny in terms of environmental stringency and system compatibility. The EU has excluded LULUCF offsets in the past and is unlikely to link its trading scheme with any other scheme that creates and supports LULUCF offsets in the near future.

With our analysis of Options A-7 to A-10, we move to the EU level. The cautious stance of EU regulators towards the integration of LULUCF in its trading environments – the EU ETS, on the one hand, the 2009 Effort Sharing framework, on the other – is due to methodological (MRV, permanence, fluctuations) but also to market (credit flooding) and technical concerns: The direct and obligatory integration of hundred thousands (or millions) of land holders is difficult, if not impossible, to maintain and govern.

A feasible approach, however, is presented by an indirect coverage option (Option A-7) involving the creation of a peat intervention mechanism under Article 24 a EU ETS. Designing such a mechanism would face few technical problems. Guiding standards exist, and the respective rules could be easily reproduced and adjusted to the European context. The marketability of peatland interventions under Article 24 a EU ETS would pose a challenge, on the other hand. Reference credit prices under the *MoorFutures* standard are forbiddingly high to create demand under the EU ETS – under current market conditions. This may change over time, however. In addition, national and/or EU legislators could help create demand by imposing a levy on the agricultural sector (depending on farm and production size, soil consistency, own efforts, and other) to feed a 'Peatland Fund', which in turn would invest in peatland rewetting and conservation projects (in combination with *paludiculture* (i.e. the wet cultivation of peatlands) techniques) implemented under Article 24 a.

A distinct option (Option A-8) for emissions trading involving peatland related sources is presented with the Effort Sharing Decision (ESD) of 2009, which sets overall compliance targets for Member States but which currently excludes LULUCF related emissions altogether. Peatland related emissions could be covered, if LULUCF is finally allowed into the scheme (something under consideration and somewhat anticipated by the recent EU LULUCF Accounting Decision). Furthermore, indirect coverage of peatland related emissions by the ESD could be arranged via Article 24 a (permitted as an unlimited offset category under the ESD) as well as through the creation of peatland focused green investment schemes attached to the sale and purchase of annual emission allocations (AEAs) among Member States. A good opportunity for the of the ESD extension of scope is presented through the European Council's appraisal of the 2030 Climate and Energy Package in October 2014, which will trigger substantial legislative revisions.

Option A-9 involves the creation of a separate accounting and compliance regime for peat related emissions building on what could be defined as "peat emission units (PEUs)" would require an architecture from scratch, but it could rely on the accounting framework provided by the EU LULUCF Accounting Decision and it would avoid a number of restrictions and challenges that would come with a pan-LULUCF approach (within the EU ETS/ESD or beyond).

Apart from the expansion or the creation of emissions trading schemes proper, a novel incentive mechanism (Option A-10) could be found in hybrid, cross-market regimes, which combine flexibility provisions in instruments such as the Energy Efficiency Directive 27/2012/EU with the option to compensate any output gaps with "peatland emission reduction units (PERUs)".

In the last two sections of this part of the study, we look at policy options at the EU Member State level and at voluntary carbon markets. At the Member State level, the prevention of peat drainage and the setting of incentives to rewet and restore mires are no longer actions confined to the sphere of environmental protection, but their importance has been recognized by the EU LULUCF Accounting Decision, with Member States being under the obligation to report on appropriate actions and plans. The decision associates both 'hard' command-and-control measures and 'soft' incentive – including market-based – schemes. There are a number of options for EU Member States to set such soft incentives and to address the "ecologic competitiveness" among landholders, including through (Option A-11) the development of a peatland inventory and a peatland atlas, (Option A-12) the improvement of the cross-compliance mechanism under the EU Common Agricultural Policy (CAP), (Option A-13) the mainstreaming of *paludiculture* techniques and the support for

paludiculture products, and (Option A-14) sustainable peatland certification and the launch of procurement procedures for peatland rewetting exercises aiming at short (10-15 years), mid-(15-30 years) and long term (beyond 30 years) intervals. Short and mid-term interventions are of particular interest from a price and market perspective, it being understood that the permanence of the related climate benefits (save for the separate issue of stock loss) are not jeopardized.

Voluntary market standards have proved remarkably innovative in addressing peatland related emissions and may influence the embracing of peatland related emissions by regulated carbon markets in the future. The Verified Carbon Standard (VCS) is centre stage as the largest and internationally available standard with a dedicated window for peatlands. Our final option recommendations are the the following: The current non-discriminatory approach on permanence for sequestration and emission reduction projects is not warranted and (Option A-15) should be replaced by a system that recognizes the permanence of emission reductions, while accounting for stock loss events through an all-in mandatory pool (LULUCF projects and possibly beyond) with an automatic, abstract retiring function. The longevity provisions in the VCS (and elsewhere) could also be changed to allow for short-term (10-15) years and mid-term (15-30 years) projects with guarantees for landholders to revert to previous practices, if so required. This would increase emission reduction options across the globe and provide a permanent climate benefit. It is further recommended (Option A-16) to simplify the off-shelf usage of methodologies and parts of methodologies and to support the project level adaptation of pre-set methodology tools. Institutionally, (Option A-17) the creation of a voluntary market support structure in the form of a publicly funded national coordination facility would help spread voluntary action and market acceptance, and it could assume a pre- or interim financing role to address a major barrier in peatland carbon projects: the advance funding gap. Last but not least, (Option A-18) the market off-take for voluntary credits could be substantially stimulated by regulators through linking emission reduction schemes for particular sectors or constituencies (e.g. a city-wide scheme) with voluntary credit sources.

B. Policy Options for Developing Countries (Non-Annex I)

Market-based instruments, in general, and carbon markets, in particular, are recognized as important elements of the international climate finance architecture. UNFCCC Parties have been struggling, however, to reach common ground regarding the design of future ‘mechanisms’, their scope, and their function. The latest negotiation session in Warsaw (November 2013) has postponed the matter altogether COP 20 (Lima). The general discussions centre on what is referred to as the “New Market Mechanism” or “NMM”, on the one hand, and the “Framework for Various Approaches” or “FVA”, on the other. The NMM is mostly conceived as the more hands-on, centralized and top-down outfit, while the FVA refers to a looser concept identified as an international tool to secure robust accounting for cross border mitigation outcomes. Both concepts foresee the issuance, or acceptance, of units to track emission reductions and, within limits, offset a Party’s mitigation obligations. Several countries, in particular developed countries, envision the NMM to target whole economic sectors or broad segments of the economy and to see target countries commit to “own contributions” when setting the baseline or reference level, while others, in particular a number of emerging countries, wish to retain a CDM-inspired project-based approach with not targets enshrined for developing countries.

REDD+ and possible more broadly, LULUCF related interventions, are considered by a range of UNFCCC Parties as an eligible sector for crediting under NMM or FVA, or both. Detailed proposals on the integration of REDD+/LULUCF in these instruments are so far missing, however. The description of LULUCF-based intervention scenarios has largely been confined to the field of nationally appropriate mitigation actions (NAMAs).

Following a separate negotiation stream during recent years, country and stakeholder submissions on REDD+ have drawn more detailed outlines of (REDD+-focused) finance and mechanisms options. Market-linked options consisting of auction revenue and carbon levy schemes contrast with Government-to-Government crediting options and private-sector driven REDD+ markets in a ‘jurisdictional’ and ‘nesting’ environment.

Little attention has been historically given to the specific role of peatlands (in this context in particular peat swamp forests) in REDD+; but there is an emerging sensibility for the issue and the need to address it as part of REDD+.

As in Part A above, we present a number of options or mechanisms, which however are not to be understood as exclusive; rather they are cumulative, at least in so far as they target different action levels, namely accounting, indirect funding, and implementing mechanisms:

Option B-1 is concerned with the improvement of the general accounting framework for developing and industrial countries alike to facilitate a coherent, comprehensive, transparent and simple assessment of land-based GHG fluxes.

Option B-2 is concerned with reinforcing the CDM by broadening its scope to include forest and peatland related measures. This option finds support from a range of developing countries, and proposals have been presented to address the problem of permanence through buffer and/or insurance schemes.

Option B-3 is concerned with expanding on the widely discussed REDD+ mechanism, adding a dedicated peatlands window. This window would treat peat forest conservation and restoration as REDD+ eligible activities, include continued land-use in the calculation of reference levels, build a robust peat spatial mapping and peat drainage and restoration MRV framework, and exclude all activities from the REDD+ scope that cause the drainage or degradation of peat soils. For a graphic overview see figure 2.

Option B-4 is concerned with establishing a sectoral approach to peatlands under NMM and FVA. In this option, peatlands would be targeted independent from forest cover, agricultural or economic use. Credits could be used directly under the 2015 climate agreement and would be rendered fungible (permanence being ensured) with other credits according to the FVA rules. The option is inspired by a (non-LULUCF) proposal from the EU (see figure 2).

Option B-5 is concerned with creating a hot spot mechanism for peatlands, bringing together peat-rich countries across the globe, those with a developed country background and those with a developing country one. Notably, peatlands are concentrated in a comparably small number of countries. Twelve countries (among them three EU Member States) account for 80% of peatland related emissions worldwide. 36 countries (of which 11 are in the EU+Iceland) account for 95% of those emissions. The institutional framework could be built inside the UNFCCC or outside (in which case future integration will be envisaged). The framework would build on three pillars: (1) accounting for peatland related emissions, (2) conservation and restoration, and (3) financial compensation. Public funds, mobilized from participating developed countries, would be used to establish a common accounting framework and to prepare all participating countries for implementing robust conservation and restoration measures. Implementation itself would be financed through a peat related emissions trading scheme connecting all participating counties, with allowance and compliance quotas established per country, balancing economic and political considerations.

In the report's final part, options for bilateral agreements between the EU and developing countries are discussed (B-6.1 bis B-6.3). It is assumed that such options would only become viable if UNFCCC Parties fail to agree on the 2015 international agreement or should the Paris outcome be seen by the EU as too weak or overall disappointing.

Under Option B-6.1, a EU-ETS-based accounting partnership would be established between the EU and a developing partner country, in which both sides cooperate in building a LULUCF-based accounting framework similar to the one recently adopted at the EU level.

Under Option B-6.2, a forests and peat trial scheme would be established within the EU carbon trading environment. For ease of implementation, the priority trading environment would be the Effort Sharing Decision, not the EU ETS. The bilateral agreement would set a reference level for the participating country, an MRV framework, safeguards and a benefit sharing structure – mostly in line with the principles enshrined in the Warsaw REDD+ Framework. Institutionally, the crediting scheme would be built between the participating

country and the European Commission, which may however delegate this tasks to a Member State. Prices per credit could be pre-arranged or left to ensuing EU Member State – partner country negotiations.

Under Option B-6.3, a forest and peatland crediting mechanisms would be established under a bilateral framework, but outside the sphere of emissions trading proper. Credits, in this option, could be used by EU business to help meet specific requirements under environment- and climate related legislation such as the Renewable Energy Directive or the cross-compliance framework under the Common Agricultural Policy.

C. Option Evaluation and Final Recommendations

The final part of our study evaluates the policy options developed for both developing and industrialized countries and draws recommendations for the German government and the EU as a whole. Applying the criteria of 'environmental integrity', 'fairness and inclusiveness', 'institutional governance and transaction costs', 'effectiveness/market considerations', and political viability, we provide each option with 'high', 'medium' or 'low' marks.

Overall, most of the options show medium to high marks and a decent level of feasibility, which reconfirms the parameters of practicability and effectiveness applied throughout the option assessment. It also highlights the availability of strong conceptual ideas with the capacity to underline a political agreement by 2015.

Some of the "soft" options assessed – including strengthening accounting capacity, adjustment of permanence tools in voluntary standards and the availability of off-the-shelf methodological tools – do not seem to face any particular challenges and are recommended for immediate implementation.

A set of options show strong performance points, but appears too far off the present negotiation agenda to address them within the negotiation mandate of Germany and the EU for Lima (COP 20) or Paris (COP 21). They should nevertheless be put forward for mid- and long-term examination in the relevant venues. Among these options are structural changes to carbon accounting in forest management ('carbon neutral harvesting wood products (HWPs)'), full accounting for natural disturbances, and the harmonization of accounting rules (gross/net *or* net/net *or* reference levels).

Several options rank very high on most criteria but suffer from low marks in one or two categories, often related to the fact that technical details yet need further clarification. Mandatory accounting for all peatlands and the establishment of a peat-focused REDD+ mechanism fall into this group. The German government is advised to flag these issues as contentious, while seeking actively further elaboration and working towards a political solution (maybe as part of a broader package).

Finally there are options, which do not necessarily show highest overall marks but which hold a high transformational potential and have a fair level of support within the international community. In our view, these options could move up in the overall ranking, if they are carefully shaped according to the technical needs and political realities. Two options deserve particular attention in this respect: (i) the development of a "sectoral" peatland approach under the widely discussed New Market Mechanism (NMM) and the Framework for Various Approaches (FvA); and (ii) at the EU level the inclusion of land-use based emissions in the framework of the Effort Sharing Decision (ESD) to instigate peatland related interventions through Green Peat Investment Schemes (GPIS) or other national emission reduction projects.

In the final part of the study we look at key design features and provide concrete recommendations for these two options. A Peat Market Mechanism (PMM) may use elements conceptualized under REDD+ but will require additional efforts and technical works on a number of issues including methodologies, monitoring and baseline setting. Perhaps its biggest opportunity lies in the fact that a PMM could link country peat targets in both industrialized and developing countries, thereby creating a direct market for peat units/credits. This means in an example that, for instance, Iceland and Malaysia could engage in a bilateral (or indeed multilateral) PMM with both countries setting an e.g. 10-year peat emission target. On the basis of such a PMM Iceland, then, could combine its domestic peatland restoration efforts with conservation and restoration interventions in Malaysia. In the event that it wishes to use credits thus generated in Malaysia, these would need to be deducted from (or compensated within) Malaysia's performance under its PMM target.

The PMM deserves a prominent place on the negotiation agenda of Germany and the EU. Peatland emissions are a high-potential and high-opportunity matter, and their relevance in both industrialized and developing countries makes them a good model for how the NMM/FVA can work in practice. Should the 2015 agreement address NMM and FVA only through a placeholder, Germany and the EU should ensure that priority sectors for further development should be LULUCF and peatlands in particular. In the absence of a PMM in the short term, the inclusion of peat interventions in the CDM are a valid contingency strategy. If negotiations fail altogether, the bilateral establishment of Peat Partnerships will be central to Germany's and the EU's international climate policy.

The inclusion of peatland-related emissions (as part of LULUCF emissions) in the ESD may be prepared by way of a trial period (which may run even before 2020), in which countries hold shadow accounts for their LULUCF emissions. EU Member States can thereby test the technical feasibility of gathering robust data in parallel to data gathering in other economic sectors and how to respond to high variabilities of emissions and removals in forests. Should the trial prove successful, full integration in the ESD should follow and is arguably the preferred option to the establishment of a wholly independent LULUCF accounting and compliance framework.

It should be noted that the ESD doe not provide for any generic crediting instruments. This means that as long as JI is no longer practiced within the EU and as long as the Article 24a EU ETS mechanism is not set up, there is no climate finance instrument that could directly target peatland interventions. Instead, relevant action would rely on Member States choosing to accompany any transactions of Annual Emission Allocations (AEAs) – the emissions trading unit under the ESD – with GPIS, a practice reminiscent of AAU transactions under the Kyoto Protocol.

Should the 2015 agreement not materialize, not provide any international market mechanisms, or set relevant incentives to develop them, the EU is finally advised to seek actively bilateral agreements with third countries and to focus on peatland interventions as creditable activities with a direct link to the ESD. With or without a 2015 agreement, the long-term goal should be the development of a mechanism that triggers peat conservation and restoration measures.

1 Introduction

As the international community is struggling to put into place a long-term international climate change regime by 2015, to enter into force by 2020, the current international regulatory situation is characterized by its transitional and preparatory nature, continued international negotiations and mushrooming, mostly bottom-up piloting initiatives. The hitherto leading climate finance instruments, the Clean Development Mechanism (CDM) and Joint Implementation (JI), will continue to exist, as Parties to the UNFCCC adopted a decision at Doha in late 2012 to install a second commitment period for the Kyoto Protocol from 2013, provided the ratification quorum of ¾ of Parties (144 countries) will be reached.[1] However, both JI and the CDM may have outlived their role and importance, not least because today's most important market, the European Emissions Trading Scheme (EU ETS), will not accept any credits from JI and CDM projects that are registered after 2012 (with an exception for least developed countries) and because, as a consequence of credit oversupply in the EU ETS, the JI and CDM asset in the secondary (trading) market has all but collapsed.[2]

In the meantime, new market mechanisms and market approaches, including those linked to domestic emissions trading schemes, to nationally appropriate mitigation actions ("NAMAs") and to so called "new mechanisms", are being defined and tested in a growing number of countries. The EU itself has, almost unnoticed by both the press and politicians, considerably strengthened the scope of emissions trading in the Union by establishing a second scheme, in force since January 2013 as an implementation measure of the Effort Sharing Decision (ESD).[3] It is important to note, however, that the ESD applies to Governments only and that the measure aims at those economic sectors, which in the past have widely been seen as inappropriate for measuring and trading at the (private) operations and installations level. The ESD introduces targets on emissions from transport (except aviation and shipping), buildings, agriculture and waste, thereby covering almost all emission sources outside the industrial emissions targeted by the EU ETS under the EU ETS Directive.[4]

It is also important to note that the ESD excludes emissions from land-use, land-use change and forestry (LULUCF), thus disregarding a key source for GHG emissions, and a major potential of emission reductions and CO_2 sequestration.[5] This said, the LULUCF exception is not an EU-phenomenon alone. Trading schemes worldwide, most prominently the trading framework established under the Kyoto Protocol, have largely discarded LULUCF from their scope (afforestation and reforestation under the CDM being a notable exception), even though the related emissions are responsible for about a quarter of global annual emissions.

Yet, despite the continued absence of LULUCF in the climate change regulatory and despite today's uncertainty over the direction the international rules on climate change in general, and carbon trading in particular, will take, the policy prospects and opportunities for integrating peatlands and forests in the climate change architecture have never been better. In particular with respect to forests, the last decade has seen the emergence of the concepts of 'reducing emissions from deforestation and forest degradation' ("REDD") and "REDD+", the "+" indicating the elements of sustainable management of forests and enhancement of forest carbon stocks. REDD and REDD+ have a powerful international advocacy base among governments and the public, and they rank high on the negotiation agenda for the 2020 architecture. The use of carbon markets in

1 By 2 September 2015, 43 countries had submitted the ratification documents to the UNFCCC. Note that the Conference of Parties recognized that Parties may provisionally apply the Doha amendment (Decision 1/CMP.8, paragraph 5).

2 Prices for forward CER sales (December 2013) currently stand at below 0,50 EUR, cf. www.pointcarbon.com.

3 Decision 2009/406/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, Official Journal (EU) L 140/136 (5 June 2009).

4 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2013 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, Official Journal (EU) L 275/32 (25 October 2003), as amended on several occasions.

5 The coverage of agriculture in the ESD is a partial one: Livestock, fertilizer and manure related emissions and fossil fuel based emissions from farm operations, horticulture and greenhouses are within the remit of the ESD, emissions from cropland and grazing land management are outside the remit of the ESD (and part of LULUCF).

the context of REDD+ remains a highly disputed issue, yet the Conference of Parties has shown itself ready to embrace it, if cautiously.[6]

There is increasing, if more recent, awareness about peatlands or, more broadly, wetlands and organic soils and their impact on climate change, which has found its reflection in climate change negotiations, too. When experts and advocacy groups raised – in 2006 – the issue of GHG emissions from degraded peatlands in the context of international climate change negotiations for the first time, they met with a largely ignorant class of climate change negotiators, many of whom had never heard of "peat" in the first place. But soon after, as early as 2008, Iceland presented a "background paper" on wetlands to the Ad hoc Working Group on Further Commitments under the Kyoto Protocol (AWG KP),[7] making the suggestion to account for emissions of peatlands under the Kyoto accounting rules. Three years later, under the *Durban Outcomes*, "Annex I Parties", i.e. those Parties listed in the first numerical annex to the UNFCCC and that have assumed emission reduction commitments under the Kyoto Protocol were given the opportunity to account for GHG emissions by sources and removals by sinks resulting from "Wetland Drainage and Rewetting" (WDR) under Article 3 (4) of the Kyoto Protocol, thereby setting in movement a busy process of regulation at the domestic and international level with the arguable perspective to make peatlands or, more generally, organic soils, accessible for the carbon markets. Milestones in fresh guidance are the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* and the *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol* (KP Supplement) proposed to the IPCC for formal acceptance at its 37th Session (IPCC-37) to be held in Batumi, Georgia, between 14 and 18 October 2013. In the meantime, quantitative research into greenhouse gas fluxes from peat soils has advanced considerably.[8]

While Governments around the globe start to realize the emission reduction potential of LULUCF activities, and the comparably moderate costs, and while science and practical experience have facilitated modules and systems in which accurate accounting and verification for emissions and emission changes has become viable, the challenge now is with policy experts and negotiators, at the international level, but also at the domestic and supranational (EU) level, to identify appropriate instruments and incentives to deliver on the potential in the most effective and efficient way.

Decision 1 CP.17, paragraph 66: "[The Conference of the Parties considers] that, in the light of the experience gained from current and future demonstration activities, appropriate market-based approaches could be developed by the Conference of the Parties to support results-based actions by developing country Parties…"

7 Wetland restoration and management, Background paper produced by Iceland for AWG-KP 6, part I meeting in Accra, 2008, http://unfccc.int/files/kyoto_protocol/application/pdf/iceland.pdf.

8 For reviews of emissions from boreal, temperate and tropical peatlands see Alm, J. /Shurpali, N.J. / Minkkinen, K., et al., 2007, "Emission factors and their uncertainty for the exchange of CO2, CH4 and N2O in Finnish managed peatlands", Boreal Environment Research, vol. 12, p. 191-209;
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Joosten, H. / Couwenberg, J., 2008, Peatlands and carbon. In: Parish, F. / Sirin, A. / Charman, D. / Joosten, H. / Minaeva, T. / Silvius, M. (ed.), Assessment on peatlands, biodiversity and climate change. Global Environment Centre, Kuala Lumpur and Wetlands International, Wageningen, p. 99-117.

This study seeks to build on the existing carbon market tools and instruments and on-going policy discussions and to explore potential policy options and to discuss them in the light of their economics (efficiency and effectiveness), on the one hand, and political viability, on the other.

2 Status Quo: Peatlands and Forests in the International Climate Change Architecture

This chapter consists of a pre-Paris 2015 *status quo* assessment of (a) how regulators have so far addressed peatlands within the existing climate change architecture, at United Nations (UN) level, at EU level and in other existing or planned emissions trading frameworks; and (b) what level of international climate change based protection (support framework) is granted to forests and peatlands in developing countries and what the status on international negotiations within the United Nations Framework Convention on Climate Change (UNFCCC) and elsewhere is.

2.1 Part A: Peatlands and Climate Change Mitigation in Annex I Countries

Peatlands have long been ignored as a powerful source for GHG emissions and potential target for dedicated policy intervention. This does not mean, however, that peatlands have altogether fallen out of the UNFCCC framework and its holistic accounting system.

There is a notable difference between reporting under the Convention and accounting under the Kyoto Protocol, the latter being narrower in scope and excluding a number of peatland-sensitive data. However, even within the limited accounting requirements for Annex I countries under the Kyoto Protocol, peatlands are – and should be – still often accounted for as part of forest, crop- and grazing land management. In the following we will *first* give an overview of the relevant accounting principles and current and agreed on reporting rules under the UNFCCC and the Kyoto Protocol, before we turn to existing instruments and incentives at the international level to stimulate peatland protection and restoration interventions. In a *second* step, we will assess the situation in the EU in terms of accounting and reporting as well as in terms of existing instruments and incentives. In a *third* step, we will look at a number of national emissions trading schemes with potential relevance for peatland interventions.

2.1.1 Accounting and reporting for emissions from peatlands under the UNFCCC

Peatlands or land with organic soil may occur under any type of land use, and emissions (and removals) from organic soils must be reported under all of the UNFCCC AFOLU (Agriculture, Forestry and Other Land Use) categories, viz. Forest Land, Cropland, Grassland, Wetlands, Settlements and Other Land. Reporting for Annex I Parties is on an annual basis in form of a National Inventory Report (NIR) and emissions and removals are summarised in tabular form in the associated Common Reporting Format (CRF, see Table 1). Reporting requirements for different types of land use and GHGs are summarised in table 1 below. The 2013 IPCC Wetlands Supplement will close various gaps in reporting. Foremost the Supplement will address emissions and removals from rewetted (and undrained, but managed) organic soils. The main source of emissions from rewetted (and undrained, but managed) organic soils is in the form of CH_4, for which previous guidance was lacking. In addition, new guidance will be included on off-site CO_2 emissions from water borne losses of organic matter as well as on CH_4 emissions from drained organic soils and drainage ditches.

Table 1: Land use options for peatlands and associated categories with their CRF reference under which emissions from organic soils are reported.

Land Use		GHG	Reported under
Pristine peatland	Undrained/rewetted	all	Irrelevant/not managed land
Forested peatland	Undrained/rewetted	all	Will be covered with Wetlands Supplement as far as managed land
	drained	CO_2	5.A Forest land on organic soil; off-site emissions (DOC) will be covered with Wetlands Supplement

		CH_4	Emissions from the field and from ditches will be covered with Wetlands Supplement
		N_2O	CRF 5(II) Non CO2 emissions from drainage of soils and wetlands
Cropland	undrained/rewetted	All	Will be covered with Wetlands Supplement as far as managed land
	drained	CO_2	5.B Cropland (on organic soil); off site emissions (DOC) will be covered with Wetlands Supplement
		CH_4	Emissions from the field and from ditches will be covered with Wetlands Supplement
		N_2O	4.D Direct soil emissions CRF 5(III) Non CO2 emissions from land conversion to cropland
Grassland	undrained/rewetted	All	Will be covered with Wetlands Supplement as far as managed land
	drained	CO_2	5.C Grassland (on organic soil); off-site emissions (DOC) will be covered with Wetlands Supplement
		CH_4	Emissions from the field and from ditches will be covered with Wetlands Supplement
		N_2O	4.D Direct soil emissions
Wetlands (peat extraction)	Emissions from extraction fields	CO_2	5.D Wetlands; off-site emissions (DOC) will be covered with Wetlands Supplement
		CH_4	Emissions from the field and from ditches will be covered with Wetlands Supplement
		N_2O	CRF 5(II) Non CO2 emissions from drainage of soils and wetlands; guidance included in Wetlands Supplement
	Off-site emissions from decay of horticultural peat	CO_2	5.D Wetlands
		N_2O	Not considered. There are no methods that would allow separation of N_2O emissions from organic matter decay and added Nitrogen fertilizers.
	Emissions from peat combustion	All	1.A Emissions from the combustion of fuel
Abandoned drained peatlands		All	Not explicitly covered by guidance. May be included under Other Land or under the land use category the land is originating from (cf. KP principle once in – always in)
Rewetted		All	To be covered (maybe under Wetlands,

peatlands (without land use)			Other Land or under the land use category the land is originating from)

At the 2011 COP/MOP in Cancun, the Conference of Parties decided that Annex I Parties should enhance reporting in national communications (NC) and submit biennial reports (BR).[9] These BRs outline progress in achieving emission reductions as pledged in the 2009 Copenhagen Accord and adopted in Cancun and in the provision of financial, technological and capacity-building support to Non-Annex I Parties. The Convention also established a review process (International Assessment and Review, IAR), carried by the Subsidiary Body for Implementation (SBI) that strives to make emission reductions transparent and comparable among Annex I Parties. Detailed guidelines for the preparation of BRs are found in Annex I and the modalities and guidelines for IAR in annex II to decision 2/CP.17. The first Biennial Reports were due January 2014 and the first rounds of IAR – which consist of two steps, a technical review of the national reports, followed by a multilateral assessment (MA) process – were completed at SBI 41 (Lima) at the end of 2014.

2.1.2 Accounting and reporting for emissions from peatlands under the Kyoto Protocol

The Kyoto Protocol, which defines quantitative emission limitation and reduction objectives (QUELROs) for developing country Parties, was mainly created as a mechanism to address industrial emissions, but also offers Parties the possibility to reduce emissions through improved land management. This possibility was used only to a limited extent during the first commitment period (2008-2012). Only the accounting for emissions and removals from the LULUCF activities Afforestation, Reforestation and Deforestation (AR/D) was mandatory, accounting for all other human-induced activities voluntary. Whereas Forest Management was elected by about half of the Parties, other Activities (Cropland Management, Grazing Land Management and Revegetation) were elected by only a handful of Parties. For the second commitment period (2013-2020) accounting for emissions and removals from Forest Management (FM) is mandatory for all Parties. Election of all other activities, including the new activity Wetland Drainage and Rewetting (WDR) has remained voluntary. Activities elected by parties for the first commitment period, are mandatory for these parties for the second commitment period.

It should be noted that the accounting under Article 3 (3) Kyoto Protocol for AR/D follows a gross-net approach meaning the countries only account for emissions and removals that occur during the commitment period, without comparing them to a (base year) reference, while the accounting under Article 3 (4) Kyoto Protocol – except for FM – follows a net-net approach meaning that only those emissions are traced that differ from the emissions in the base year. While during the first commitment period FM accounting followed a gross-net approach, second commitment period accounting will be in line with the net-net approach.

While the *Activity* Wetland Drainage and Rewetting – if elected – is limited to organic soils that have been drained or rewetted after 1990[10] and that are not yet accounted for under any other mandatory or elected activity, the *practices* of drainage and rewetting can occur under any other (mandatory) *Activity*, in which case they must be reported and accounted for accordingly (Table 2). Germany, for instance, must account for its peatlands, when forested, under the activities of AR/D and FM, regardless of whether it elects WDR or not (so far it has not).

9 Decision 1/CP.16

10 In Annex I countries, hardly any additional, hitherto undrained peatland area has been drained since 1990. Hence, accounting for the Activity WDR would almost exclusively focus on rewetting. The same applies to accounting for the practices of drainage and rewetting under Cropland Management, Grazing land Management and Revegetation, which all use 1990 as reference.

Table 2: KP LULUCF Activities with examples of the practices of drainage and rewetting and their accounting. * mandatory accounting; # mandatory accounted if elected in the first commitment period.

Activity	Practice
Deforestation*	• felling and drainage of a forest on organic soil and conversion to cropland or grassland • forest harvesting that results in REDUCED EVAPOTRANSPIRATION AND CONSEQUENT HIGHER WATER TABLES AFTER CLEAR FELLING THAT PREVENTS RE-ESTABLISHMENT OF FOREST • rewetting that raises the water table to such an extent, that FOREST CANNOT PERSIST OR REGENERATE • rewetting and felling of forest, e.g. to restore a non-forested peatland
Afforestation / Reforestation*	• drainage of a (non-forested) peatland for forestry, e.g. when a treeless or sparsely treed peatland is drained to stimulate tree growth • rewetting of a (non-forested) peatland for forestry, e.g. when a grassland on organic soil is rewetted and afforested with Alder trees
Forest Management*	• drainage of forest on organic soil that remains a forest, e.g. when a forested peatland is drained to stimulate tree growth • rewetting of forest on organic soil that remains a forest, e.g. when an Ash forest on organic soil is rewetted and replaced by an Alder forest
Cropland Management (if elected)#	• drainage of a (non-forested) peatland and conversion to cropland • rewetting of a cropland on organic soil that remains a cropland, e.g. when a potatoe field is rewetted for paludiculture
Grazing Land Management (if elected) #	• drainage of a (non-forested) peatland to improve grazing • rewetting of a grassland on organic soil that remains a grassland, e.g. when a drained grassland used for dairy cow husbandry is rewetted to a grassland for water buffalo husbandry
Revegetation (if elected) #	• revegetation and rewetting of a (non-forested) peatland, e.g. when a bare peat extraction site is converted to a vegetated wetland
Wetland Drainage and Rewetting (if elected)	• rewetting or drainage (after 1990) of a (non-forested) peatland that is not yet accounted for under any other mandatory or elected activity

2.1.3 Existing instruments and incentives

Outside the Outside the Kyoto framework, the UNFCCC does not involve a carbon market element. Through its "mechanism for the provision of financial resources on a grant or concessional basis" (Financial Mechanism, Article 11 UNFCCC) it provides an infrastructure for various climate finance interventions, with the Global Environment Facility (GEF) acting as the operating entity. The GEF operates the Special Climate Change Fund (SCCF) to mobilize funding for adaptation activities and technology transfer, and the Least Developed Countries (LDC) Fund to help the poorest countries prepare and implement national adaptation plans. By June 2015, more than 300 million USD (SCCF) and around 900 million USD (LDC Fund), respectively, have been committed.[11] The GEF also operates (together with the UNFCCC Secretariat) the interim secretariat of the Green Climate Fund (GCF), which by May 2015 had received funding pledges from 33 governments (including 8 developing country governments) in the amount of 10.2 billion USD.[12] Over the years, the GEF has indeed funded a number of peatland projects, including in Annex I countries, which are deemed Economies in Transition, though not primarily with a climate mitigation perspective. In the majority of Annex I countries, however, the GEF is not active at all, and peatland interventions in these countries, where they happen, are not facilitated by climate funding under the Convention.

The Kyoto framework, on the other hand, does involve numerous carbon market elements, setting financial incentives for interventions both in developing as well as in developed (Annex I) countries. For Annex I countries, the relevant mechanisms are Joint Implementation (JI) based on Article 6 of the Kyoto Protocol, on the one hand, and International Emissions Trading (IET), based on Article 17 of the Kyoto Protocol, on the other.

Joint Implementation (JI)

Joint Implementation (JI) is a project based *crediting* instrument under the Protocol. Any GHG emission reductions, or any GHG removals, achieved through an approved project, and verified by an accredited independent entity (AIE), translates into tradable "emission reduction units" (ERUs). JI projects can only be hosted by Annex I countries that have been found "JI eligible" through satisfying a range of requirements regarding the country-wide accounting system for emissions and the allocation of an "assigned amount", expressed in "assigned amount units" (AAUs), the base accounting unit for Annex I countries under the Kyoto Protocol.

JI has no sectoral restrictions, like the CDM, which bans nuclear projects as well as projects based on avoided deforestation.[13] Any project causing emission reductions or GHG removals falls into the scope of Article 6 of the Kyoto Protocol and allows for the issuance of ERUs. ERUs require the conversion from AAUs where emission reductions are achieved or from "removal units" (RMUs), where removals are achieved.[14] It has been argued that peatland protection and restoration projects do not qualify as JI projects, as they (predominantly) aim at emission reduction, while (the argument goes) for LULUCF projects under JI

11 Cf. Climate Funds Update, June 2015, at http://www.climatefundsupdate.org .

12 http://news.gcfund.org/wp-content/uploads/2015/04/GCF_contributions_2015_may_28.pdf.

13 For the nuclear exclusion: Decision 17/CP.7 (preamble), as confirmed by Decision 3/CMP.1, paragraph 3; for the forestry restriction to afforestation and reforestation see Decision 5/CMP.1, Modalities and procedures for afforestation and reforestation project activities under the clean development mechanism in the first commitment period of the Kyoto Protocol, Annex, paragraph 1 (definitions) and elsewhere.

14 UNFCCC Decision 14/CMP.1 Standard electronic format for reporting Kyoto Protocol units, Annex, Standard electronic format for reporting of information on Kyoto Protocol units, paragraph 13: "Under the Article 6 section, Annex I Parties shall report information relating to joint implementation projects under the Kyoto Protocol in accordance with the following paragraphs of the annex to Decision 9/CMP.1: (a) For 'Party-verified projects' (also referred to as 'track one' projects) Annex I Parties shall report information pertaining to projects where emission reductions or enhancement of removals have been verified by the host Party in accordance with paragraph 23 of the annex to Decision 9/CMP.1:

(i) Each Annex I Party shall report under 'Additions' the total quantity of ERUs issued pursuant to paragraph 29 of the annex to Decision 13/CMP.1

(ii) The Party shall report under 'Subtractions' the corresponding quantity of AAUs converted, or, in the case of land use, land-use change and forestry (LULUCF) projects, the corresponding quantity of RMUs converted, pursuant to paragraph 29 of the annex to Decision 13/CMP.1.

only removals are recognized.[15] The exclusive link between RMUs and LULUCF projects as a whole made in Decision 14/CMP.1 underscores this view.[16] It should be noted that LULUCF was integrated into the KP mainly to allow Parties to account for removals through Afforestation and Reforestation (with Deforestation included to guarantee balance). This chimes with the practice of Parties to elect under 3 (4) of the Kyoto Protocol virtually sink-sensitive Forest Management alone, while emissions from croplands and grasslands are passed over: LULUCF is seen as a sector to generate removals, not emission reductions. As a result, a strong bias emerged in LULUCF negotiations oriented towards forests and removals, which permeates decision texts making them *de facto* non-applicable to Article 3 (4) Activities that focus on emission reductions.

However, in recent years, some JI country practice in the field of LULUCF has emerged, mostly, however, under the domestic development track (so called "Track 1"), which has lately drawn a lot of criticisms for a perceived lack of transparency and integrity.[17] Romania and Russia eached approved an afforestation project. Ukraine approved seven soil related projects (no-tillage). Yet, in 2013, a project essentially based on the avoidance of deforestation (i.e. aiming at emission reduction) was finally determined under the (widely respected) international development track ("Track 2"). It has since become a feature project on the JI website ("*Bikin Tiger*").[18] The AIE in question did not once make reference to the discussion whether a LULUCF project could involve emission reduction activities, somewhat creatively relying on the Determination and Verification Manual as issued by the Joint Implementation Supervisory Committee (JISC).[19] *Notabene*, the Manual provides guidance for "forest management projects", while not mentioning avoided deforestation as a project category. The project is consequently described as involving "changes in forest management" with no harvesting in the project scenario. The methodology used is VM 0011 of the Verified Carbon Standard ("Improved Forest Management – Logged to Protected Forest").[20]

The precedent the *Bikin Tiger* project offers, together with the above-mentioned revision of Decision 16/CMP.1 through Decision 2/CMP.7, allowing Annex I Parties under Article 3 (4) of the Kyoto Protocol to report henceforth on emissions regarding Wetland Drainage and Rewetting (WDR), opens the gate for a wide field of peatland conservation and restoration projects.

There is an *caveat* related to accounting, however: The regulatory framework as it stands still implies that any and all ERUs generated from LULUCF emission reduction interventions are converted from RMUs, regardless of whether they reflect removal or emission reduction activities. This may logically be little convincing and present a practical challenge for countries and project developers[21], but it remains the law. What level of regulatory changes (or legal interpretation) was needed to change this structure will be discussed further below (see Part A 2).

Despite the newly found openness of JI, there is little to suggest that the mechanism will yield many project interventions in the short- or mid-term. Demand for JI credits has mostly come from the EU ETS, which flatly excludes any ERUs from "land use, land use change and forestry activities".[22] The EU ETS has also become the price-setter for ERU purchases in general, and today's prices at below 0.50 EUR per ERU will

15 O'Sullivan/von Unger/Biström, Finance Options, in Joosten et al., Peatlands – Guidance for climate change mitigation through conservation, rehabilitation and sustainable use, 2nd ed., Rome (2012), page 25.

16 See footnote 14.

17 Kollmuss/Schneider/Zhezherin, Has Joint Implementation reduced GHG emissions? Lessons learned for the design of carbon market mechanisms,Stockholm (2015).

18 United Nations, Framework Convention on Climate Change, UNFCC, JI Verification, Bikin Tiger Carbon Project – Permanent protection of otherwise logged Bikin Forest, in Primorye Russia, http://ji.unfccc.int/JI_News/issues/issues/I_WQX7WC91FA3W74C59962OC9AV1BFAU/viewnewsitem.html.

19 JISC, Joint Implementation Determination and Verification Manual, adopted at its 19th meeting, Article 59 (b).

20 Verified Carbon Standard, (VCS), Approved Methodology VM0011, Iethodology for Improved Forest Management – Logged to Protected Forest: Calculating GHG Benefits from Preventing Planned Degradation, San Franciso.

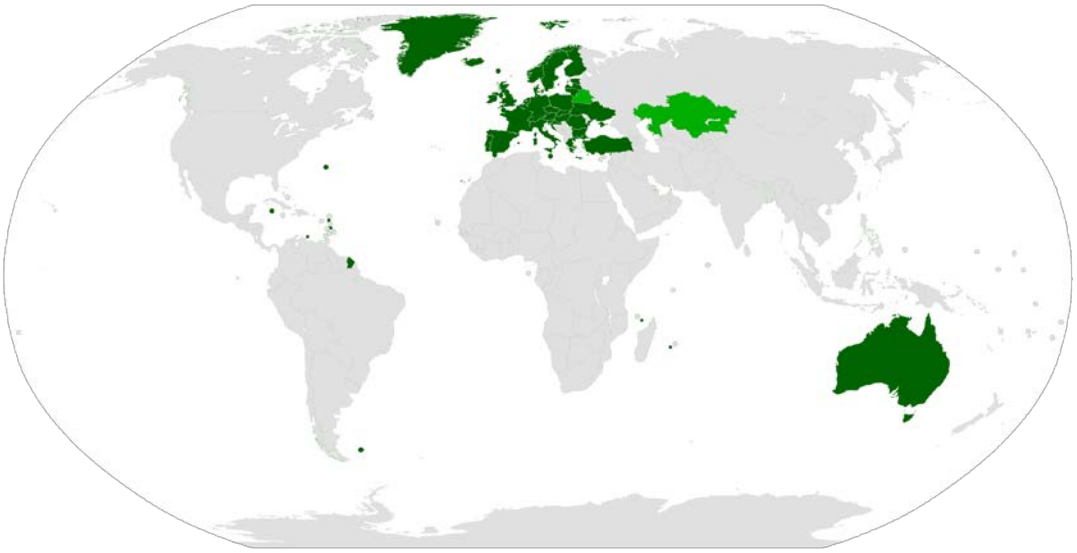
21 See O'Sullivan/von Unger/Biström, Finance Options, in: Joosten, H. / Tapio-Biström, M.L. / Tol, S. (eds.), 2012, Peatlands – Guidance for Climate Change Mitigation through Conservation, Rehabilitation and Sustainable Usage, FAO.

22 Article 1 (2) of Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms, Official Journal (EU) L 338/18.

make it hard to incite strong enough investment, even where the buyer does not depend on EU ETS compliance.

However, while project mushrooming cannot be expected, modest development of JI peatland projects, or JI peatland programmes, may still occur, with Annex I Government buyers being able to reach compliance under Kyoto's second commitment period (2013-2020), or – for EU countries – compliance with the Effort Sharing Decision (ESD). While there is no regulatory clarity to date (and certainly none is expected before 2016), any ERUs may eventually be eligible for use under the 2020 climate architecture, and prospective (Government) investors may be inclined to provide capital on this probability.

Figure 1: JI Countries during Kyoto's second commitment period; status Belarus and Kazakhstan: not yet clear.



Not all Annex I countries are eligible to host peatland JI projects (see figure 1). The host country of the *Bikin Tiger* project, Russia, as well as Japan and New Zealand are not involved in the second KP commitment period, and, thus, they will not be able to oversee any JI activities on their respective territories. The EU countries have mostly limited their regulations on JI in time, with the end date having coincided with the end of the first KP commitment period (2012).[23] The matter of prolongation is sometimes discussed,[24] but has not yet been picked up by any EU Member State. In any case, currently no ERUs can be issued for emission reductions achieved after 2012, because countries have not received their AAUs for the second commitment period (as the entry into force of the changes to the Kyoto Protocol concerning the second commitment period are pending).[25] The EU situation is further complicated by the fact that EU regulation has drastically reduced the scope for JI project development within the Union: Projects with a direct or indirect effect on emissions covered by the EU ETS are explicitly excluded (Article 11 b EU ETS); in addition, the structure of the Effort Sharing Decision (ESD) suggests that JI projects in the sectors covered by the Decision would

[23] For Germany see § 5 (3) Gesetz über projektbezogene Mechanismen nach dem Protokoll von Kyoto zum Rahmenübereinkommen der Vereinten Nationen über Klimaveränderungen vom 11. Dezember 1997 (Projekt-Mechanismen-Gesetz – ProMechG),

[24] See, for instance, the workshop organized by the German Federal Environment Agency on 24 September 2012 http://www.environment.gov.au/cleanenergyfuture/index.html, 29.10.14.

Umweltbundesamt / Dehst (German Federal Environment Agency), Further Development of the Joint Implementation (JI) Mechanism: Net mitigation effects and other criteria, http://www.dehst.de/EN/Climate-Projects/Project-Mechanism/JI/_functions/Information_JI-WS_24092012.html.

[25] Note that in the COP decision on the Doha Amendment (Decision 1/CMP.8) countries agreed to consider options for the advance issuance of AAUs during the interim period.

only be lawful if recognized as Article 24 a EU ETS project following (currently unlikely) legislative action by the European Commission.[26]

This said, LULUCF remains outside from both EU ETS and ESD (see in more detail below), and the development of projects within the EU would, therefore, be possible without legislative action by the Commission. But Member States must take regulatory action for this to happen, and they will most likely link any activity to the question whether they choose to make use of the (voluntary) accounting options under Article 3 (4) Kyoto Protocol. In other words: Member States are unlikely to allow the hosting of JI peatland projects, if they do not account for (non-forested) peatlands in the first place; since otherwise they would release AAUs without receiving a net country-wide accountable reduction of emissions.

International Emissions Trading (IET)

International Emissions Trading, based on Article 17 of the Kyoto Protocol, does not come with an inherent link to a project or other activity. Rather, countries are free under Article 17 to trade AAUs between their country accounts with no strings attached. However, in practice "naked" AAU deals have been rare. Most countries have linked their AAU transactions to some form of green investment scheme (GIS). The concept of GIS goes back to discussions among negotiators of the Kyoto Protocol and debates in private sector circles during the 1990s.[27] Responding to concerns that vast amounts of surplus AAUs could be traded cheaply thereby undermining domestic efforts to curb emissions worldwide, a group of countries, supported by stakeholders, floated the idea to *green* the AAU trade.[28] A greened AAU trade would mean that the carbon transaction is accompanied by greenhouse gas emission reducing projects or other activities. Technically, this implies that the funds generated by the AAU sale would be earmarked for certain projects or activities as defined between seller and buyer, or even stricter, that payments would follow performance.

There is no fixed structure for the GIS. In general, no commonly shared definition of eligible projects or activities, and no pre-designed level of seller/buyer engagement regarding the use or misuse of funds and the involvement of the buyer in the roll-out of the greening scheme has been agreed. However, two broad categories of greening AAUs have emerged over time: quantifiable (or *hard*) schemes and non-quantifiable (or *soft*) ones.[29] The former links the number of AAUs sold to the number of emission reductions achieved by a particular investment. The relation between greening and payment is often expressed by the "greening factor". A greening factor of 1 would mean that the number of AAUs sold and the emission reductions achieved by the scheme applied are equal. Non-quantifiable schemes are not measurable in emission reductions but in qualitative output. Capacity building, technical or research assistance, technology transfer and other measures and activities fall under this category. In practice, non-quantifiable and quantifiable schemes are often mixed, even though there is a clear dominance of the latter.

While not all transactions are reported, we assume that in total around 400 million AAUs have been transacted under IET and GIS.[30] The growing surplus in the Kyoto framework – a staggering 13 billion AAUs at the end of the first commitment period, with substantial surplus amounts spreading in Russia and Ukraine, but also the EU[31] – and low-ambition targets under the second commitment period are likely to reduce IET trading volumes over the next years. However, several countries will still show an AAU demand, and they

[26] von Unger/Conway/Hoogzaad, 2011, Carbon Offsetting in Europe Post 2012: Kyoto Protocol, EU ETS, and Effort Sharing).

[27] See for a summary Blythe and Baron, Green Investment Schemes: Options and Issues, OECD, Paris 2003; see also Tuerk, A., et. al., 2010, Working Papger, Green Investment Schemes: First Experiences and Lessons learned, Graz.

[28] Mainly the EU, Japan and Canada, triggered by debates among the World Wide Fund for Nature (WWF), Greenpeace, Friends of the Earth and others, see Koch and Michaelowa, "Hot Air" Reduction Through Non-Quantifiable Measures and Early JI, Joint Implementation Quarterly, 5 (1999) 9; Kokorin, Green Investment Schemes as a Way of Promoting Environmentally-Sound Cooperation among Russia, Canada, Japan and Other Nations under the Kyoto Protocol, IISD, Winnipeg 2003.

[29] Cf. Kokorin, ibid.

[30] In September 2012, Point Carbon, a carbon market news provider, reported that by then 314 million AAUs had been transacted in 56 deals. Adding for the time passed since and for contingencies for non-reported deals, a number of 400 million AAUs seems likely.

[31] UNEP, The Emissions Gap Report 2012. The revised Kyoto Protocol for the second commitment period, however, if enacted, substantially limits the capacity to trade the surplus from the first commitment period.

may focus on an IET / GIS combination with peatland restoration as a target. Peatland carbon projects may indeed have an advantage over other project types, as they promise a *hard* greening scheme with a *strong* greening factor at, in many cases, a *low* price.[32] So far, no peatland related GIS has been developed; but both Ukraine and Belarus Government officials have raised the issue repeatedly.[33]

2.1.4 Accounting and reporting for emissions from peatlands in the European Union

Following the embrace by the Kyoto Protocol of WDR at COP 17 (Durban), the EU aligned its own accounting rules with the new international standard and adopted *Decision No. 529/2013/EU of 21 May 2013 on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land use, land-use change and forestry and on information concerning actions relating to those activities*.[34] Under the new rules, accounting for emissions and removals from Cropland Management (CM) and Grazing Land Management (GM) shall become mandatory from 2021 onwards, while those for Wetland Drainage and Rewetting (WDR) remain voluntary with Parties given the opportunity to prepare and maintain annual accounts to reflect emissions and removals from this Activity. In the decision's recitals, the EU legislator calls the new accounting rules "a first step towards the inclusion of [CM and GM] activities in the Union's emission reduction commitment". With respect to peatlands, the recitals continue, "the Union should endeavour to advance the issue at the international level with a view to reaching an agreement within the bodies of the UNFCCC or of the Kyoto Protocol on the obligation to prepare and maintain annual accounts" for Wetland Drainage and Rewetting, "with a view to including this obligation in the global climate agreement to be concluded no later than 2015." Despite the voluntary nature of WDR accounting, this new decision effectively imposes mandatory accounting for most rewetting activities, as they fall under either CM or GM. WDR accounting proper would virtually cover little more than rewetting of current and former peat extraction sites would additionally be included. Hardly any drainage for agriculture or peat extraction of hitherto undrained sites has taken place in the EU since 1990 and emissions from drainage do not counterbalance emission reductions associated with rewetting in any meaningful way.

2.1.5 Carbon Incentives and Instruments for Peatlands

To date no carbon related financing instrument targeting peatland conservation or restoration exists. The EU regulatory framework does provide for peatland protection at several levels, including the Habitat Directive[35], the Environmental Impact Assessment (EIA) Directive[36], the Water Framework Directive[37] (as groundwater dependent ecosystems) and arguably the common agricultural policy cross-compliance mechanism.[38] However, a policy linking the carbon sensitivity with peatland intervention does not exist. Article 24 a of the EU ETS could be used to provide e.g. a peatland crediting standard, but the European Commission has not signalled that it would use the Article 24 a of the EU ETS mechanism any time soon. There is, however, an express statement in the 2013 LULUCF monitoring decision[39] to the effect that the monitoring measure constitutes a "first step" toward the inclusion of LULUCF in the EU's emission reduction commitment. Once

[32] The authors are involved in a number of voluntary peatland carbon projects – including in Germany, Ukraine and Belarus, among others – and the price range reaches from low price costs (5 EUR) to high-end costs of 30-70 EUR per tonne.

[33] For Belarus, this is true since 2007, see the country's presentation at the UNFCCC negotiations of that year: Grebenkov, A. / Tarasenko, V. Belarus: Joint Implementation Status, https://seors.unfccc.int/seors/attachments/get_attachment?code=V970PU11KPJ0FW02RQRLT7Y5NG739LZM.

34 Official Journal (EU) L 165/80 of 18 June 2013.

35 Council Directive 92/43/EC of 21 May 1992 on the conservation of natural habitats and wild fauna and flora, Official Journal (EU) L 206 of 22 July 1992.

36 Directive 85/337/EC, codification through Directive 2011/92/EU of the European Parliament and of the Council on the assessment of the effects of certain public and private projects on the environment, Official Journal (EU), L26/1 of 28 January 2012.

37 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, Official Journal (EU), L327 of 22 December 2000.

38 Article 4 and 6, and Annex 3 of Council Regulation 2009/73/EC of 19 January 2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers, amending Regulations (EC) No 1290/2005, (EC) No 247/2006, (EC) No 378/2007 and repealing Regulation (EC) No 1782/2003.

39 Decision No 529/2013/EU of the European Parliament and of the Council of 21 May 2013 on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land use, land-use change and forestry and on information concerning actions relating to those activities.

an emission reduction commitment for the LULUCF sector is adopted, the chances for a crediting mechanism will certainly be a lot better.

2.1.6 **Foreign Regulatory Systems**

Australia

With an estimated 3.75 % of the global forest estate, Australia has the world's sixth-largest forests, but it has seen extensive rates of forest loss and degradation to this day: Australia has lost nearly 40% of its forests since European settlement, and now only 149.4 million hectares of both native forests and plantations remain.[40] After a decade of net forest growth in the 1990s, the country saw substantial net losses during the early 2000s, not least because intensive droughts and fires have increased over the past decade.[41] A comprehensive regulatory framework designed to achieve the conservation and sustainable management of forests is therefore in place at state, territory and national levels comprising jurisdictional approaches, multilateral agreements and other regulatory instruments including forest certification schemes.[42] Australia is also rather rich in peat- and other wetlands. It holds almost 11 000 km^2 of peatland (mainly in Tasmania) of which 2000 km^2 are degrading[43]. It hosts 65 *Ramsar* wetlands (covering more than 8 million hectares) and 900 other wetland sites are declared "nationally important".[44] Despite the wide protection focus, loss of habitat and wetland degradation has been stark, in particular throughout the 20th century.[45]

In 2012, Australia enacted the *Clean Energy Future* legislation package integrating measures on renewable energy, energy efficiency, land use and carbon pricing.[46] In its land-use related window, the Government had earmarked 1.7 billion AUD with most of the funds reserved for the Biodiversity Fund, which may be drawn for peatland restoration purposes (although this has not happened to date).[47] Under the mandatory carbon pricing scheme (in fact 'schemes' as there are several sector-specific regimes) the Government targeted some two thirds of greenhouse gas emissions. The scheme was meant to contribute substantially to reaching a nation-wide reduction target of 5% below 2000 emissions by 2020. It started as a fixed price per tonne mechanism (23 AUD) but was meant to move to a trading scheme proper, linked to the EU ETS, as of 1 July 2014. In September 2013, the incoming government announced that it plans to introduce new legislation to repeal the existing legislation replacing it with what it calls a "Direct Action Plan".[48]

The Carbon Farming Initiative (CFI), an offsetting standard meant to accompany the emission trading scheme and adopted under the Carbon Credits (Carbon Farming Initiative) Act 2011,[49] may, however, survive the change in government. In its announcement of September 2013, the new government explicitly mentions the CFI as one out of two pillars of the future Direct Action Plan (the other being the installation of an Emissions Reduction Fund). Potential abatement activities under the CFI include re-vegetation and reduced emissions or increased sequestration in agricultural soil. The CFI distinguishes "Kyoto offset projects" and "non-Kyoto offset projects", Kyoto offset projects being those that have a direct impact on GHG emissions accounted for under the Kyoto Protocol, non-Kyoto offset projects being those that have not. Note that the terminology does not imply registration or non-registration under the flexible mechanisms of the Kyoto Protocol.

40 State of the Environment 2011 Committee, Australia state of the environment 2011, 2011; Bradshaw, Little left to lose: deforestation and forest degradation in Australia since European colonization, Journal of Plant Ecology 5 (2012), 109.

41 Adams, Eco-Economy Indicators, Forest Cover (31 August 2012), http://www.earth-policy.org/indicators/C56/forests_2012.

42 For an overview on the policies and certification schemes implemented in Australia is available at http://www.daff.gov.au/forestry/policies.

43 Joosten, The Global Peatland CO2 Picture. Peatland status and drainage associated emissions in all countries of the World. Wetlands International, Ede (2009).

44 http://www.environment.gov.au/topics/water/water-our-environment/wetlands/ramsar-convention-wetlands (with further links).

45 Finlayson, Loss and degradation of Australian wetlands (December 2000), http://www.environment.gov.au/ssd/publications/ir/pubs/ir351.pdf.

46 For a summary on the package see Australian Government, An overview of the Clean Energy Legislative Package (April 2012); the documentation is no longer available online, and the incoming Government has announced to repeal the legislation, see http://climatechange.gov.au/reducing-carbon/news-article/repeal-carbon-tax-and-introduction-direct-action-plan.

47 Australian Government, Department of the Environment, Land Sector Package, http://www.environment.gov.au/cleanenergyfuture/index.html.

48 http://climatechange.gov.au/reducing-carbon/news-article/repeal-carbon-tax-and-introduction-direct-action-plan.

49 http://www.comlaw.gov.au/Details/C2011A00101/Download.

Emission reductions achieved under Kyoto offset projects are eligible for the generation of "Kyoto Australian carbon credit units" ("Kyoto ACCUs"); emission reductions from non-Kyoto offset projects generate "Non-Kyoto Australian carbon units" ("Non-Kyoto ACCUs"). Under the still existing legislation, Kyoto ACCUs may be used for compliance under the Australian emissions trading scheme (initially with a ceiling of 5% of total emissions of an operator), Non-Kyoto ACCUs can only be used on the voluntary markets. In what way credits can be used under the future Direct Action Plan remains to be seen.

With respect to the still existing scheme: Whether peatland related emission reductions would generate Kyoto ACCUs or Non-Kyoto ACCUs depends on whether the reductions contribute to Australia meeting its target under the Kyoto Protocol. For the first commitment period (2008-12) the country chose not to account for any of the voluntary activities from Article 3 (4) of the Kyoto Protocol,[50] and only activities under Article 3 (3) of the Kyoto Protocol – afforestation, reforestation, deforestation – were eligible for recognition as Kyoto offset projects. Peatland conservation and restoration projects, consequently, would have only come into the focus of Kyoto offset projects, then, as part of an AR/D (Afforestation, Reforestation or Deforestation) measure. Soil carbon management, non-forest re-vegetation, and other activities with a peatland impact would have remained outside the scope of the Kyoto offset projects.

If for the second commitment period Australia elects the various activities under Article 3 (4), including WDR – the *Environmental Defense Fund* (EDF) and the *International Emissions Trading Association* (IETA) report that Australia had announced to do so –[51] then the situation will be different and peatland related activities as a whole may be eligible for Kyoto-ACCU generation.

Note that as of August 2013, no peatland related methodology had been approved by the CFI nor was there any in development.[52] From a regulatory point, however, the implementation of peatland conservation and/or restoration projects as an offset credit generating activity – whether under the mandatory or the voluntary market – is possible. Note also that funding approval from the Biodiversity Fund does not hinder the registration as an offset project under the CFI.[53]

On the international side, the mandatory scheme allows for CDM and JI credits to be used by Australian compliance buyers, up to a ceiling of 12.5%. Thus, JI peatland projects may find increased demand from inside Australia.

California

Of California's rich natural resources, few have fared as poorly as the state's wetlands. California lost more than 90% of its pristine wetlands,[54] and while California's forest land, tightly regulated, grows at the tune of 890,000 m^3 per year, the state's peat- and wetlands remain heavily disturbed and degrading.[55] The large peatlands of the Sacramento-San Joaquin River Delta, have long been used as heavily drained croplands resulting in high rates of subsidence and associated greenhouse gas emissions.

This notwithstanding, over the past decades moves towards peat- and wetland protection and restoration have been made,[56] and nature conservationists hope that the state's newly created cap-and-trade program – established on the basis of California Assembly Bill 32, the Global Warming Solutions Act ("AB 32") –[57] can

50 The Government cited the risk of droughts and bushfires, which can release large quantities of emissions, as the reason not to elect an activity under Article 3 (4) Kyoto Protocol, see Parliament of Australia, Background Note, 14 October 2009, http://www.aph.gov.au/binaries/library/pubs/bn/sci/kyotoaccrules.pdf. Note that emissions resulting from "natural events" are not accounted for; however, for land-based emissions, the distinction is often hard to make, and under current rules all emissions from a land with human activity exposure are considered human-induced (managed land proxy), except the ones that fall under "natural disturbances" Cf. Decision 2/CMP.7 (Durban), Annex, paragraph 33.

51 EDF and IETA, Australia The World's Carbon Markets: A Case Study Guide to Emissions Trading (June 2013), http://www.ieta.org/worldscarbonmarkets.

52 See the collection of approved methodologies and those in development at http://www.climatechange.gov.au/reducing-carbon/carbon-farming-initiative/methodologies.

53 See http://www.environment.gov.au/cleanenergyfuture/biodiversity-fund/faqs.html.

54 USGS, http://www.npwrc.usgs.gov/resource/wetlands/wetloss/table_1.htm.

55 Cosby, Peat Soils of California, Soil Science Society of America Journal 16 (2001) 102.

56 See, for instance, the CALFED Delta Program, http://www.calwater.ca.gov, which restores peatlands to secure water supply from the Sacramento and San Jaoquin to some 2/3 of California's population.

57 Assembly Bill No. 32, act to add Divison 25.5 to the Health and Safety Code, relating to air pollution, http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf.

further boost investment in peat- and wetland restoration. The program is meant to contribute to California's emissions target of stabilizing its 1990 emissions by 2020. Having started in 2013, the program will phase in participation of economic sectors to cover, by 2015, some 85% of the state's emissions. The annual volume of allowances is set at 162.8 million tonnes CO_2e for 2013; in 2015, due to the expansion in scope, the volume will be at 235 million tonnes CO_2e, decreasing then by 12 million tonnes CO_2e every year through 2020. Allowances will partly be given out for free and partly auctioned with current auction prices standing at 12 USD per allowance/tonne of CO2eq. 50% of all auction proceeds – estimated for the years 2013-2020 at 12 billion USD[58] – are earmarked for the Air Pollution Control Fund, which is to advance the objectives of AB 32, including natural resource protection.[59]

Compliance operators are allowed to offset up to 8% of their emissions through approved offsets (2% of which may come from international project interventions); by 2020, a maximum of 232 million offsets may be used by compliance buyers, 81 million of which may come from international sources.

The program's governing authority, the California Air Resources Board (ARB), has so far approved four offset protocols, all of which originate in the Climate Action Reserve (CAR), a California based not-for-profit carbon registry and standard. The protocols are for ozone-depleting substances (ODS), livestock, urban forests, and US forests, with the regional application being restricted to the US, Canada and Mexico. Peat- and wetland restoration is not yet acknowledged in its own right under a protocol.[60] Note, however, that the CAR is encouraging the development of a number of soil and wetland related offset protocols – one on wetland carbon sequestration for coastal and deltaic wetlands in California is currently in the making, funded by the Coastal Conservancy, a government body, with the ultimate aim to have the ARB integrate the protocol in its cap-and-trade scheme[61] –and that CAR has issued, in January 2013, a scoping paper on a "Reserve Peatland Protocol", which found that the emission reduction potential of a "U.S. peatland restoration protocol" is "significant", that existing tools, methods, and primary data would make the development of a suitable protocol "feasible and relatively simple", that it would "generate sufficient revenues to make some activities feasible", while complying with the principle of additionality.[62]

On the side of forests, the ARB is currently assessing the possibility to adopt a REDD+ offset protocol with a jurisdictional focus on the Brazilian state of Acre and the Mexican state of Chiapas. The three states are engaged in the Governors' Climate and Forest Task Force (GCF)[63], a global network of regions to enhance forest protection, and are committed to develop a sectoral offset program for REDD.[64]

New Zealand

New Zealand's position among developed countries is peculiar not least for its strong dependency on agriculture, which contributes close to 50% – or some 35 million tonnes CO_2e (some 4 million tonnes coming from peatlands[65]) – of countrywide greenhouse gas emissions. The forestry sector – afforestation, reforestation and

58 Environmental Defense Fund (EDF) and International Emissions Trading Association (IETA), California The World's Carbon Markets: A Case Study Guide to Emissions Trading (May 2013), http://www.ieta.org/assets/Reports/EmissionsTradingAroundTheWorld/edf_ieta_california_case_study_may_2013.pdf.

59 According to the draft Cap-and-Trade Investment Plan, published in April 2013, "natural resources & waste diversion" are one out of three priorities (the others being "sustainable communities & clean transportation" and "energy efficiency & clean energy"). See http://www.dof.ca.gov/cap_trade/documents/DraftCapandTradeInvestmentPlan.pdf.

60 Under the latest version of the Forest Project Protocol (version 3.3), however, a methodology is included to account for net soil carbon emissions and sequestration in forests. This version has not yet been approved by the ARB.

61 California Wetland Carbon Sequestration Protocol Development, http://scc.ca.gov/webmaster/ftp/pdf/sccbb/2013/1306/20130620Board3F_Wetland_Protocol.pdf.

62 http://www.climateactionreserve.org/wp-content/uploads/2012/12/Reserve_Peatlands_Scoping_

Paper_013113.pdf.

63 www.gcftaskforce.org.

64 For the background see The REDD Offset Working Group, California, Acre and Chiapas: Partnering to Reduce Emissions from Tropical Deforestation (draft version), http://www.unredd.net/index.php?option=com_docman&task=doc_details&Itemid=&gid=9893 (2013).

65 Joosten,H., 2009, The Global Peatland CO2 Picture. Peatland status and drainage associated emissions in all countries of the World. Wetlands International, Ede.

deforestation – offsets about half of these emissions so that New Zealand's yearly overall net emissions remain just about below the 1990 baseline (the country's target under the Kyoto Protocol for the first commitment period).

Developed within the framework of the 2002 Climate Change Response Act[66], the New Zealand Emissions Trading System (NZ ETS) came into being in September 2008.[67] It covers a wide range of sectors either directly – imposing obligations to surrender New Zealand Units (NZUs) for the emissions produced – or indirectly, allowing for voluntary participation to earn NZUs from emission reduction or sequestration activities.

Land owners with pre-1990 forest coverage (above a certain size threshold) are directly covered by the scheme: If they deforest (more than two hectares within any 5 years from 2008), they need to (i) surrender NZUs, or (ii) purchase international (Kyoto) credits, or (iii) pay a fine for NZ$ 25 per tonne of CO_2e emitted, or (iv) plant a new forest – with the same area extension and (future) carbon stock – elsewhere. Land owners of land that was not forest by 31 October 1989, can voluntarily participate in the scheme and earn NZUs for afforestation/reforestation activities.

Overall, carbon pricing appears to have an impact on forest growth in New Zealand. As of March 2012, around 318 thousand hectares of the forests established after 31 December 1989 were registered in the NZ ETS.[68] It is unclear, however, if the healthy trend will continue, should the significant losses the NZ ETS has experienced (prices decreased from $20.24 per tonne in April 2011 to $4.50 per tonne in September 2013) persist.

Peatland restoration or conservation is not in itself recognized as an offsetting activity, nor does peatland destruction in itself impose obligations under the NZ ETS. However, mining is an activity that *a priori* falls in the scope of the NZ ETS and peat mining has a long tradition in the country, but contributes less than 1% to the country's overall emissions.[69] According to the Climate Change (General Exemptions) Order 2009, any peat mining operation that does not exceed 10,000 tonnes of coal per annum is exempt from NZ ETS coverage.[70]

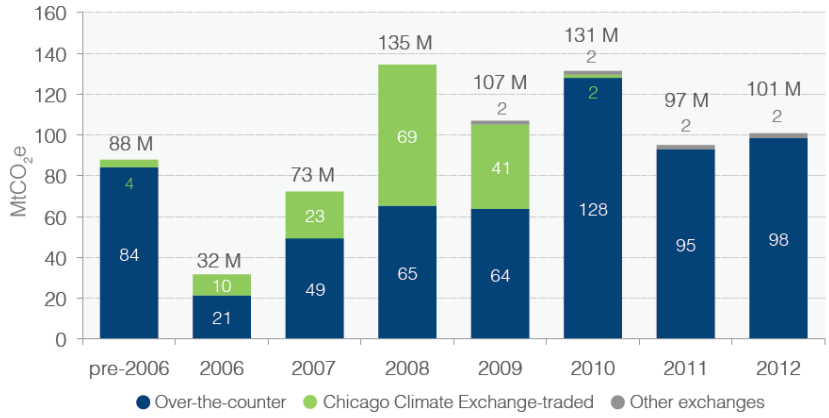
2.1.7 Voluntary Campaigns

The voluntary market is driven by the ever-growing awareness of the general public, including companies and consumers, of the importance of dealing with climate change. Therefore, and contrary to the development of the compliance markets, this market has shown a steady increase in over-the-counter sales since its start in the 1990s.

According to the State of the Voluntary Carbon Markets 2013 report[71], in 2012, 101 million carbon credits were traded, an increase of 4% compared to 2011 (Figure 1). The demand for carbon offsets from forestry projects (approximately 32% of the total market) that were certified to the Verified Carbon Standard and the Climate, Community and Biodiversity Standards increased considerably, with a market share of 65% amongst some 10 standards. The 523 million USD traded on the voluntary market in 2012 is expected to increase to 1.6 to 2.3 billion USD in 2020 (*cf.* Figure 2). In 2012, 51% of the transacted over-the-counter volume went to Europe, with most of the carbon credits contracted by European players originated from SE Asia, while trades in the USA were a rather more domestic affair.

[66] http://www.legislation.govt.nz/act/public/2002/0040/latest/DLM158584.html.
[67] It was further amended in June 2009 and November 2012, see Climate Change Response (Emissions Trading Forestry Sector) Amendment Act 2009; Climate Change Response (Emissions Trading and Other Matters) Amendment Act 2012, http://www.legislation.govt.nz/act/public/2002/0040/latest/versions.aspx.
[68] Ministry for Primary Industries, *Situation and Outlook for Primary Industries 2012*, http://www.mpi.govt.nz/Default.aspx?TabId=126&id=1356.
[69] Joosten, op.cit., 2009.
[70] New Zealand, Ministry for the Environment, emissions trading bulletin No 16, http://www.mfe.govt.nz/publications/climate/emissions-trading-bulletin-16/index.html.
[71] Forest Trends' Ecosystem Marketplace & Bloomberg New Energy Finance, 2013 - www.ecosystemmarketplace.com.

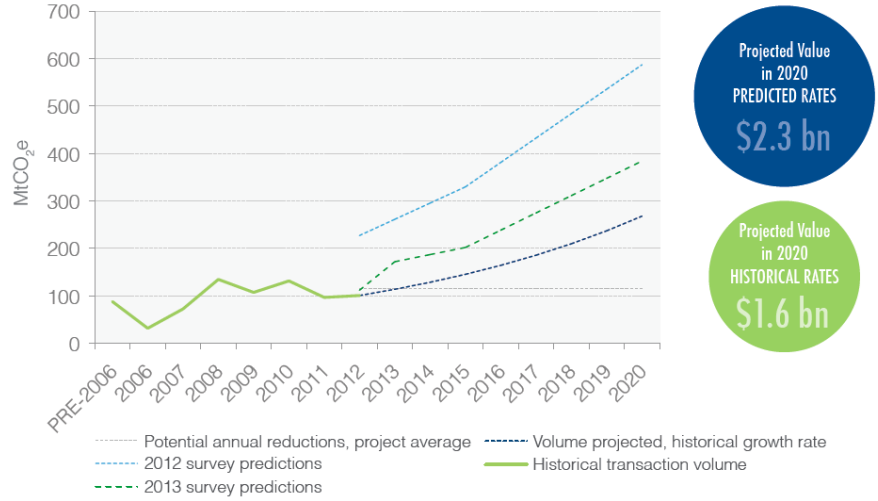
Figure 2: Historical Offset Demand by Transacted Volume, All Voluntary Carbon Markets.



Notes: Based on 763 $MtCO_2e$ of offsets transacted and reported to Ecosystem Marketplace over 7 survey years.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013.*

Figure 3: Market Projections, Historical Data and Supplier Predictions.



Notes: Based on 87 organization responses.

Source: Forest Trends' Ecosystem Marketplace. *State of the Voluntary Carbon Markets 2013.*

Carbon credits from peatland are a relatively recent phenomenon but carbon projects in the land use sector go a while back. They were first developed in the early 1990s with tree planting programs pioneering certification with in-house greenhouse gas verification services of certification companies. The CDM followed a decade later with its afforestation and reforestation (A/R) project category, for which to date more than 10 greenhouse gas accounting methodologies have been developed, all consolidated into 4 methodologies for wetlands and non-wetlands, large scale and small scale, and with 51 A/R CDM projects registered. Other carbon standards – operating in the voluntary carbon markets – have subsequently covered the vast unexplored ground left by the CDM. The Verified Carbon Standard (VCS) since its launch in 2007 has initiated projects and methodologies for forest conservation, improved forest management, agricultural land management, and, more recently, wetlands restoration and conservation. In the land use category, the VCS has approved more than 10 methodologies and a myriad of modules for specific accounting procedures, as well as more than 30 individual projects. Four peatland-related methodologies (3 for tropical regions and one for temperate climates) are currently under validation by the VCS. The American Carbon Registry (ACR) recently approved a wetlands restoration methodology for the Mississippi Delta.

The United Kingdom is now piloting a Peatland Carbon Code, thus incentivising the restoration of UK peatlands, which for over 80% have been degraded due to agriculture, forestry, track building or peat extraction.

The IUCN UK Commission of Inquiry on Peatlands suggested a target of 1 million ha of peatlands in good condition or under restoration management by 2020[72]. This can be achieved through the creation of regional carbon markets, that allow to lower accreditation costs while adapting schemes to local conditions. It also builds on experience with the UK Woodland Carbon Code and experience with peatland restoration in Germany through the MoorFutures standard. The MoorFutures standard was launched in 2011 to support restoration in Mecklenburg-Vorpommern[73]. The standard has been developed based on the Wetland Restoration and Conservation (WRC) guidance of the VCS, with various cost-saving simplifications justified by the regional scope of the standard. MoorFutures credits are retired and recorded in a federal state registry. While the standard is consolidating (with a new version dubbed "Moor Futures 2.0" being released shortly), it is also growing. Brandenburg has been the second state to adopt it, and there are discussions to increase the ambit further.[74] To date more than 8000 MoorFuture credits have been sold with a total volume of some €300.000. The MoorFutures scheme has allowed for the rewetting of two peatland areas, which will be entirely financed by credit revenues.

Summarizing the status of LULUCF, in general, and peatlands, in particular, under the various carbon standards assessed, we conclude the following (Table 3):

Table 3: Carbon Standards, LULUCF and Peatlands. The colour orange indicates compliance regimes, green stands for voluntary schemes. The darker shading and "X" indicate Yes/Positive, the lighter shading and "-" indicate No/Negative.

Carbon Standard	Compliance Standard (CS) or Voluntary Standard (VS)	Accounting for LULUCF	Accounting for peatlands	Offsetting LULUCF allowed	Offsetting peatland conservation and/or restoration allowed	Offsetting peatland projects in practice
Convention level	CS	X	X	-	-	-
Kyoto level	CS	X *(restricted)*	X *(partial /voluntary)*	X *(JI and GIS)*	X	-
EU ETS	CS	-	-	-	-	-
ESD Framework	CS	-	-	X *(CDM, JI, potentially Art. 24a)*	X *(JI)*	-
Australian Cap & Trade	CS	-	-	X	X	-
California Cap & Trade	CS	-	-	X	*(not yet)*	-
New Zealand	CS	X	X *(emissions, with*	X	-	-

72 Bain, C. et al, 2011, Commission of Inquiry on UK Peatlands. IUCN UK Peatland Programme, Edinburgh. http://www.iucn-uk-peatlandprogramme.org/resources/188.

73 (MLUV 2009) Konzept zum Schutz und zur Nutzung der Moore. Fortschreibung des Konzeptes zur Bestandssicherung und zur Entwicklung der Moore in Mecklenburg-Vorpommern (Moorschutzkonzept). Ministerium für Landwirtschaft, Umwelt und Verbraucherschutz Mecklenburg-Vorpommern, Schwerin. http://www.regierung-mv.de/cms2/Regierungsportal_prod/Regierungsportal/de/lm/_Service/Publikationen/?publikid=2351.

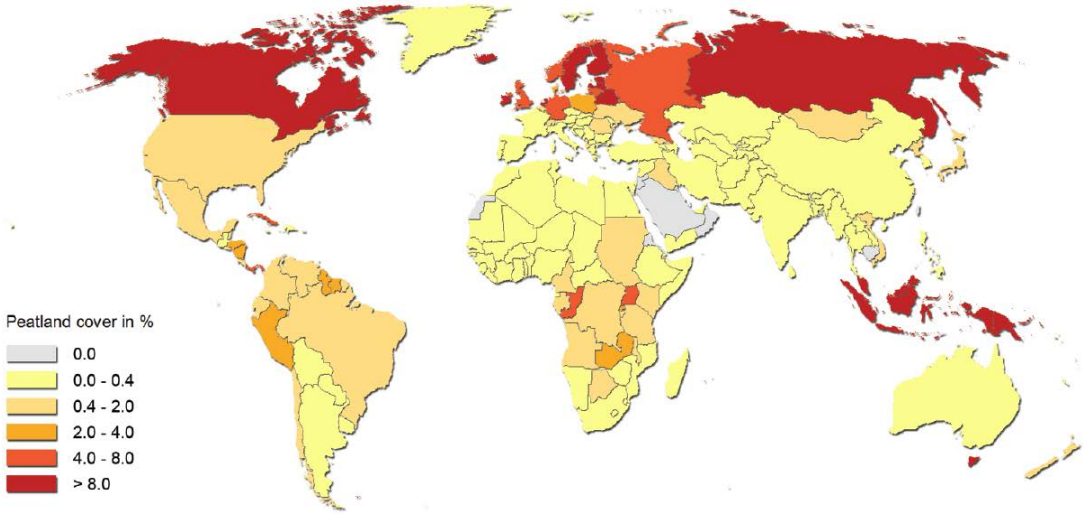
74 From a federal perspective see S. Wolters / D. Tänzler / L. Theiler / M. Drösler, Entwicklung von Konzepten für einen nationalen Klimaschutzfonds zur Renaturierung von Mooren, Umweltbundesamt (2013).

			exceptions)			
VCS	VS	X	X	X	X	X
Peatland Carbon Code (UK)	VS	-	X	-	X	X
MoorFutures (Germany)	VS	-	X	-	X	X

2.2 Part B: Peatlands and Forests in Non-Annex-I Countries

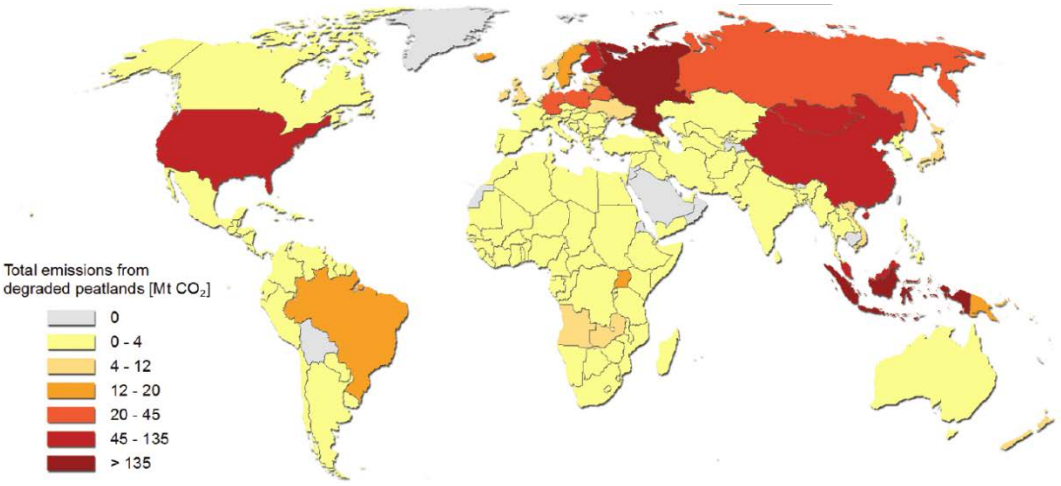
Just as with mitigation action in Annex I countries, peatland restoration and conservation in *developing countries* has long been a neglected topic for its climate change abatement potential. This is unfortunate not least given that actual emissions from degraded peatlands in these countries are disproportionately high (see Figures 4 and 5) and steadily on the rise. 13 million hectares of disturbed peatlands in Indonesia and Malaysia alone are responsible for over 1 Gt CO_2, or half of the world's annual peatland emissions (the total global peatland area covering over 4 million km^2, see Figures 4 and 5). This 1 Gt of CO_2 is also not a negligible amount in absolute terms – it easily accounts for $1/8^{th}$ of annual global emissions from the land use sector as a whole.[75] Both countries, together with China and Papa New Guinea, show the steepest year-to-year increase in emissions from peatlands worldwide.[76]

Figure 4: Global peat areas by country, based on data from the IMCG Global Peatland Database, Joosten 2009 (map: Stephan Busse).



75 Joosten (2009).
76 Ibidem.

Figure 5: Emissions from peatlands by country (excluding fires), based on data from the IMCG Global Peatland Database, Joosten 2009 (map: Stephan Busse).



Not surprisingly, peatlands in tropical countries have received growing attention from climate policy makers, if only in connection with above-ground biomass, in particular forests. Tropical peat (swamp) forests make up some 60% of tropical peatlands, storing vast amounts of carbon. Both peat degradation from drainage and deforestation rates are rampant, and growing policy efforts to reduce deforestation and forest degradation (REDD) have come to realize that the soil carbon stock matters, too. The most recent UNFCCC Conference of the Parties (COP) Decision on REDD+ safeguards and reference levels instructs developing country Parties wishing to undertake REDD+ activities to report on "pools and gases" and to state "reasons for omitting a pool" in the understanding that "[no] significant pools and/or activities should… be excluded".[77] It is noted in this respect that soil carbon (soil organic matter) is one out of six recognized forest carbon pool categories (the others being aboveground biomass, belowground biomass, dead wood, litter and harvested wood products).[78]

There are manifest differences between emissions from peatlands and emissions from forests, including regarding the spread in emissions and timing. The deforestation of a hectare of land may easily happen in a single day, releasing, in that case, one-off emissions. The peat underneath, if drained, continues to cause emissions often for hundreds of years, until the last available organic matter has been oxidised.

The reversal activities – reforestation and rewetting, respectively – have different effects, too. While reforestation leads to sequestration of CO_2, the rewetting of peatlands primarily reduces emissions (by stabilizing the organic soil). This has an important impact on the abatement concept of permanence.

There are, on the other hand, important similarities between peatland degradation and deforestation. First of all, in most cases, both activities go hand in hand (*simultaneity*): When a peat swamp is deforested for a certain usage, it is drained at the same time to make the land more accessible and usable. Second, the *economic drivers* of deforestation and peatland degradation are often identical or similar: Both timber and peat are used as fuel, and the deforested and drained land is used for the same purpose, be it plantations, crop planting, or other purposes.

Addressing REDD and peatland conservation at the same time, therefore, while compelling for its dual carbon effect, is logically consistent, as long as the conceptual differences, and their effects, are taken into account. That is, as long as forest coverage is maintained, both REDD and peatland conservation intervention will naturally overlap and complement each other. However, once the forest coverage is lost, when REDD intervention has become redundant, the peat conservation intervention becomes ever more relevant.

77 Decision 12/CP.18, Annex, paragraph (c).

78 Intergovernmental Panel on Climate Change (IPCC), 2000, Special Report Land Use, Land-Use Change and Forestry, Cambridge University Press, Section 3.3.2.5.

In the following, we will give an overview of the two climate policy fields in developing countries: international, in particular tropical forest protection, on the one hand, and peatland conservation, on the other. We will once more start at the level of the UNFCCC and the Kyoto Protocol, before we turn to relevant multilateral, bilateral and domestic campaigns, and then discuss, in a concentrated form, the vibrant voluntary carbon market focussing on REDD+.

2.2.1 Accounting for LULUCF Emissions in Non-Annex-I countries

The UNFCCC accounting rules for LULUCF related emissions are those presented in Part A above. However, the Convention recognizes different capacities of Annex I countries and Non-Annex I in establishing the national inventory, and the reporting requirements, including the procedures for reporting, differ between the groups. Guidelines for the preparation of initial national communications from Non-Annex I Parties were adopted at COP 2 (Geneva) in 1996, and subsequently revised at COP 8 (New Delhi) in 2002.[79] Guidelines for the establishment, and the timetable, of second and third national communications from Non-Annex I countries were adopted at COP 11.[80]

Reporting results have so far been mixed. While an overwhelming majority of Non-Annex- Parties submitted its initial communication (145 countries), the numbers for the second communication are more modest (92 as of September 2013), and those for subsequent communications weak (5 in total). While (some) forest data has been improving significantly over recent years, the measuring of peatland related data is still in its infancy.

At the Conferences of Cancun and Durban, Parties agreed to a new, and additional, reporting format for Non-Annex-I countries, International Consultation and Analysis (ICA). The ICA installs a review cycle for biennial "update reports [of Non-Annex-I Parties], containing updates of national greenhouse gas inventories including a national inventory report and information on mitigation actions, needs and support received".[81] The first such reports are due by December 2014. If Parties comply with the new reporting obligations in decent numbers, the ICA may substantially improve the coherence, comprehensiveness and quality of Non-Annex-I country reporting.

2.2.2 Existing Mechanisms

The Clean Development Mechanism (CDM) is the only carbon market instrument within the Kyoto framework that links emission reduction activities in developing countries to credit demand from Annex I countries. It has been largely successful in leveraging project-based climate finance interventions[82] across the globe and can be considered the world's largest carbon market by number of participating countries.

The CDM's LULUCF window accounts for more than 50 projects with a credit volume of some 4.3 million tonnes CO_2. This is a small share in the CDM's total of more than 6 thousand projects. However, by some accounts the sector has proven surprisingly strong with the development of more than 10 methodologies that have been consolidated into 4 for wetlands and non-wetlands, with large and small scale projects, and with a decent performance rate among LULUCF projects. The good results have been achieved despite a substantial *restriction in scope* and *limitation in crediting capacity*.

With respect to the restriction in scope, the Marrakesh Accords have excluded most LULUCF-interventions from the CDM: "The eligibility of land use, land-use change and forestry project activities under [the CDM] is limited to afforestation and reforestation."[83] Any REDD and in fact any land-use related activities, including peatland conservation and restoration, are therefore disqualified from the mechanism.

79 Decision 17/CP.8 (revised Guidelines).

80 Decision 8/CP.11.

81 Decision 1/CP.16, paragraph 60.

82 The UNFCCC Secretariat, in 2011, calculated that by then more than 140 billion USD had been invested in registered CDM projects, see UNFCCC Secretariat, Benefits of the Clean Development Mechanism 2011.

83 Decision 16/CP.1, Annex, paragraph 13.

With respect to the limitation in crediting capacity, the annual ceiling for Annex I Parties wishing to use CDM LULUCF credits for compliance purposes is set at 1% of base year emission and is thus very tight.[84] Moreover, credits issued are limited in time: Afforestation and reforestation projects can only generate either Temporary CERs ("tCERs") or Long-term CERs ("lCERs"), which expire at the end of the following commitment period or project crediting period, respectively.[85] This limitation requires Annex I Parties wishing to use CDM LULUCF credits for compliance purposes to replace them each time they are about to expire.[86] This feature puts a material disadvantage to LULUCF credits as it adds a continuous liability to the credits that other CDM credits do not have. The temporal limitation of the credits is related to the issue of "non-permanence of afforestation and reforestation project activities" in the Marrakesh Accords,[87] addressing the possibility that removal from afforestation or reforestation may be reversed (through fire, logging, or otherwise).

2.2.3 REDD Architecture and Carbon Markets

The restriction of the CDM to afforestation and reforestation measures has always been contested, and the Marrakesh negotiators felt the need to stress that the "treatment of land use, land-use change and forestry project activities under [the CDM] in future commitment periods shall be decided as part of the negotiations on the second commitment period".[88] No such decision has yet been made, and it is unlikely that any extension of LULUCF-based project eligibility under the Kyoto Protocol will be agreed in the years to come.[89] The international negotiations on REDD+, in particular, are almost exclusively linked to the work under the Convention and the integration in the future climate architecture.

A REDD policy environment was first proposed at COP 11 (Montreal) following a joint submission from Costa Rica and Papua New Guinea[90] and has been treated as a priority negotiation issue since COP 13, when State Parties in the Bali Action Plan decided to "launch a comprehensive process to enable the full, effective and sustained implementation of the Convention… by addressing, inter alia… enhanced national/international action on mitigation of climate change, including, inter alia, consideration of policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of carbon stocks in developing countries",[91] and initiated a work programme to that effect.[92]

There have been intense, if altogether slow, negotiations since then. In the Copenhagen Accord, State Parties recognized the "crucial role" of REDD+ and agreed "on the need to provide positive incentives to such actions through the *immediate establishment of a mechanism* including REDD-plus, to enable the mobilization of financial resources from developed countries" with a funding commitment of initially USD 30 billion

84 Decision 16/CP.1, Annex, paragraph 14.

85 Decision 5/CP.1, Annex, paragraph 1 (g) and (h).

86 Decision 5/CMP.1, Annex, paragraph 41 et seqq.

87 Decision 5/CMP.1, Annex, paragraph K.

88 Decision 16/CMP.1, Annex, paragraph 15.

89 Cf. Decision 2/CMP.7 (Durban), Annex, paragraphs 17 and 18: "17. Afforestation and reforestation are eligible project activities under the clean development mechanism in the second commitment period. Activities additional to afforestation and reforestation will be eligible if agreed by any future decision of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol.

18. The modalities and procedures contained in decision 5/CMP.1 for afforestation and reforestation project activities under the clean development mechanism, and in decision 6/CMP.1 for small-scale afforestation and reforestation project activities under the clean development mechanism, shall apply, mutatis mutandis, to the second commitment period. Alternative approaches to addressing the risk of non-permanence may apply in accordance with any future decisions of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol."

90 The submission set out "two general options by which to address emissions from deforestation": the adoption of an "optional protocol" on REDD, on the one hand, and the integration into the CDM, on the other. The submission was supported by Bolivia, the Central African Republic, Chile, Congo, the Democratic Republic of the Congo, the Dominican Republic, and Nicaragua.

91 Decision 1CP.13, paragraph 1 (b).

92 Decision 2/CP.13, paragraph 7.

("Fast-Start Finance" covering the years 2010-2012) and of 100 billion annually long-term (from 2020).[93] Under the Cancun Agreements a year later (COP 16), talk was no longer about the imminent establishment of a mechanism, rather State Parties clarified what they considered eligible REDD+ actions, namely:

- Reducing emissions from deforestation;
- Reducing emissions from forest degradation;
- Conservation of forest carbon stocks;
- Sustainable management of forests; and
- Enhancement of forest carbon stocks.[94]

REDD+ host countries, the Cancun Agreements continued, would need to develop (i) a "national strategy or action plan", (ii) a national or (provisionally) a jurisdictional "forest reference emission level" as the baseline against which REDD+ activities would be measured, and (iii) a robust and transparent national forest monitoring system, while always respecting a catalogue of safeguards, including legal compliance, transparent governance, respect for the knowledge and rights of indigenous peoples and members of local communities, and full participation of stakeholders.[95] REDD+ implementation is structured in phases, the Cancun Agreements outlined, the first phase (Phase 1) being devoted to the development of the national strategy of action plan, supported by capacity building, the second phase (Phase 2) targeting the implementation of policies and measures in accordance with the national strategy or action plan and including "results-based demonstration activities", and the third phase (Phase 3) consisting of "results-based actions that should be fully measured, reported and verified".[96] Developed countries were invited to support "through multilateral and bilateral channels" the first and the second phase, while "financing options for the full implementation of the results-based actions" (third phase), the Cancun Agreements conclude, would be explored.

This certainly spurred countries into action, and a strong REDD+ infrastructure has been built over recent years through many bilateral and multilateral initiatives, among them the United Nations Collaborative Initiative on Reducing Emissions from Deforestation and forest Degradation ("UN REDD") and the Forest Carbon Partnership Facility (FCPF). UN REDD is a collaboration of the Food and Agriculture Organisation (FAO), the UN Development Programme (UNDP) and the UN Environment Programme (UNEP), which promotes and facilitates REDD activities in (today) 47 countries with the support of, among others, Norway, Denmark, Spain, and since 2011 Japan and the European Union. The FCPF is a global partnership of governments, international finance institutions, business, civil society and indigenous peoples, active in (today) 36 countries, supported by 18 donors. It has two separate funding mechanisms, the Readiness Fund (with a capital of about 260 million USD) and the Carbon Fund (with a capital of about 390 million USD)[97].

93 Copenhagen Accord, published as part of Decision 2/CP.15; italics added.

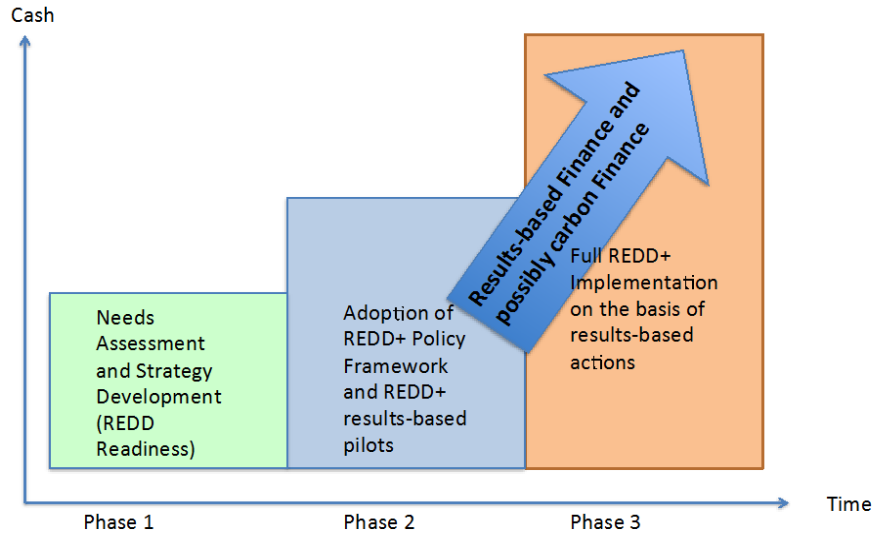
94 Decision 1/CP.16, paragraph 70.

95 Ibid. and Annex I to Decision 1/CP.16.

96 Decision 1/CP.16, paragraph 73.

97 Carbon Fund donor participants (as of June 2013) are Australia, BP Technology Ventures, Canada, CDC Climat, the European Commission, Germany, Norway, Switzerland, The Nature Conservancy, the United Kingdom, and the United States.

Figure 6: REDD+ Implementation in Phases.



However, for all the REDD+ activism among international finance institutions, donors and REDD+ host countries, REDD+ implementation – in the sense of Phase 3 implementation – is lagging behind. The magnitude of the 'REDD Readiness' task has indeed led in various corners both on the end of the donor and the recipient to a "readiness fatigue"[98]. The determination of a forest reference emission level is a complex calculation; the development of a national strategy for REDD+ – which necessarily touches upon fundamental elements of both the economy and the society – is cumbersome, to say the least; and the establishment of a REDD+ enabling regulatory and institutional framework is a Herculean task.

Yet important ground has been made in the international context. The Cancun Agreements – which some considered to be sufficiently comprehensive and clear to allow for full-fledged REDD+ implementation –[99] and later the Warsaw Framework for REDD+[100] have defined the main conceptual elements, laid out the milestones for the (phased) implementation process, brought clarity on the long contested forest reference emission levels calculation, the REDD+ safeguards, the guiding principle of "national circumstances, capacities and capabilities", and even paved the way for (equally long contested) jurisdictional approaches. As it stands, the major bottlenecks for REDD+ negotiations remain MRV and the question of REDD+ finance and mechanisms.

Monitoring and MRV

In Cancun, Parties had agreed to a "robust and transparent national forest monitoring system", and the Subsidiary Body for Scientific and Technological Advice (SBSTA), had prepared guidance on the details, i.e. what would need to be measured, reported and verified and how the (step-wise) process and the results would be linked to the setting (and updating) of reference levels. In the run-up to Doha in 2012, however, it emerged that a variety of issues remained open (or "bracketed" in the language of the negotiators) regarding monitoring and MRV of result-based actions, in particular concerning the institutional verification responsibility. Some countries (including Brazil) supported the proposal to have this responsibility linked to the country-led "international consultation and analysis process (ICA)", a new general reporting mechanism under the Convention, while others (including Norway) wished the establishment of an "independent, inter-

98 Cf. NEFCO KfW, Proceedings of the Roundtable: Options to Promote Market-Based Mechanisms (7 May 2013), http://www.nefco.org/sites/nefco.viestinta.org/files/KfW%20NEFCO_Roundtable%20Summary%20and%20Proceedings.pdf.

99 Tuttle, A, Whither REDD+ after Doha? New Realities for forest advocates. Observations from COP 18, Forest Carbon Asia, 30 January 2013, http://www.forestcarbonasia.org/articles/whither-redd-after-doha-new-realities-for-forest-advocates-observations-from-unfccc-cop-18/: "In a practical sense, the Cancun agreement on REDD-Plus incorporates all the main elements needed by a country to proceed."

100 Decisions 9-15/CP.18.

national verification process".[101] The issue was finally settled at Warsaw by agreeing on a package on monitoring, safeguards, and a robust ICA link.

REDD+ Finance and Carbon Markets

The other big and largely unresolved matter concerns REDD+ finance and where funding should come from. Ultimately, the question resonates around whether REDD+ should be built with the trajectory of creating a carbon asset (generating tradable units) or whether REDD+ should primarily be built outside the framework of "market-based instruments".[102] The pragmatic solution so far has been not to specify the matter and to "consider" the possibility of developing "appropriate market-based approaches"[103], while "[noting] that non market based approaches… could [also] be developed".[104]

In the absence of a clear conceptual commitment, the notions of "results-based actions" and "results-based finance" have become the common denominator, leaving it largely to the unilateral or bilateral interpretation of State Parties what exactly to make of it.[105] Norway and Indonesia, for instance, in their bilateral "REDD+ Partnership", which aims at both halting deforestation and suspending peatland conversions, have clarified that financial "contributions" are made for "verified emission reductions".[106] In its 2012 submission on REDD+, Norway reiterated this cash-for-carbon approach:

"By REDD+ "results" we mean reduced emissions, avoided emissions and/or enhanced removals that are fully measured, reported and verified (tCO2eq per year)… Thus, "financing of results-based actions" means payments for verified emission reductions relative to an agreed incentive level…"[107]

Other than with Indonesia, Norway is testing its approach in special programs with Brazil, Guyana, Tanzania and Ethiopia. In Brazil, Norway receives for its REDD+ contributions "certificates", which identify the donator and the amount of the contribution; the certificates are defined by the Amazon Fund as "nominal, non-transferable and [not generating] rights or credits of any nature".[108] The Forest Carbon Partnership Facility (FCPF), for its part, refers to "performance-based carbon payments"[109] for "pilot results-based demonstration activities"[110] and has circulated among its participants various (draft) versions of a REDD+ "Emission Re-

101 See the draft conclusions by the SBSTA Chairs, prepared for the COP, from SBSTA's 37th session (26 November – 1 December 2012), http://unfccc.int/resource/docs/2012/sbsta/eng/l31.pdf. See for in-situ observations for negotiation positions of countries at Doha http://news.mongabay.com/2012/1203-redd-doha-update.html#2GTYMHo6RZKRT412.99.

102 Among the pro-market countries are Colombia, Papua New Guinea, Mexico, Indonesia, Ghana, and the US (see for instance, the USAID findings for Colombia: Colombia REDD+ Finance and Markets Assessment (May 2013), http://www.fcmcglobal.org/documents/Colombia_Finance_Report.pdf); among the market-skeptic countries are Bolivia, Sudan and Tanzania (cf. Bolivia's presentation from August 2013: United Nations, Framework Convention on Climate Change, The Joint Mitigation and Adaption (JMA) Approach for the integral and sustainable management of Forests, http://unfccc.int/files/methods/redd/redd_finance/application/pdf/redd_20130822_cop_wp_ws2_bolivia.pdf. Brazil holds a middle position: It is open, "at a later stage", for the development of market-based approaches, but it rejects the "use of offset mechanisms"; in the short term, results-based funding should not give rise to the generation of any rights, and a country's efforts shall be "non-transferable", see for all quotes Brazil's submission to the UNFCCC, August 2013, http://unfccc.int/files/methods/redd/coordination_of_support/application/pdf/20130820_cop_redd+_programme_submission_by_brazil_final.pdf.

103 Decision 1/CP.17 (Durban), paragraph 66.

104 Ibid., paragraph 67.

105 For a broad overview of international standards and how they treat "performance-based" actions see Streck/Costenbader, Standards for Results-Based REDD+ Finance: Overview and Design Parameters (2012), http://www.climatefocus.com/documents/files/standards_for_resultsbased_redd_finance.pdf.

106 Letter of Intent between the Government of the Kingdom of Norway and the Government of the Republic of Indonesia on "Cooperation on reducing greenhouse gas emissions from deforestation and forest degradation", http://www.regjeringen.no/upload/SMK/Vedlegg/2010/Indonesia_avtale.pdf.

107 Norway's Submission to the UNFCCC on Views on Results-Based Finance for REDD+ (March 2012), http://unfccc.int/files/bodies/awg-lca/application/pdf/norway_submission_on_results-based_finance_for_redd+_final.pdf.

108 Amazon Fund, http://www.amazonfund.gov.br/FundoAmazonia/fam/site_en/Esquerdo/doacoes/.

109 The World Bank, Forest Carbon Partnership Facility (2009), http://www.forestcarbonpartnership.org/sites/fcp/files/New%20FCPF%20brochure%20--%20low%20resolution%20051809_0.pdfu_8_z_0.pdf.

110 The World Bank, The Carbon Fund of the Forest Carbon Partnership Facility (2013), http://www.forestcarbonpartnership.org/sites/fcp/files/2013/june2013/Carbon%20Fund-web_1.pdf.

ductions Payment Agreement (ERPA)" as well as recommendations on pricing methodologies, which could become the nucleus of a REDD+ carbon trading framework.[111]

Brazil: Amazon Fund

Even though Brazil experienced the world's greatest net loss of forests due to deforestation, the country with its estimated 519 million hectares still boasts the second largest forest area in the world (after Russia). Yet, since the 1970s deforestation has occurred at a massive scale and still accounts for approximately 70 % of the country's annual CO_2 emissions.

With the aim to erase the net loss of forest coverage by 2015, Brazil has therefore launched in 2004 an Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (PPCDAM). In compliance with the PPCDAM, the Brazilian government established the *Amazon Fund* under the terms of Decree Nº 6.527 in 2008, aiming to raise donations compensating land owners for emissions not emitted due to deforestation. Brazil also finances incentive programs for ranchers and farmers to adopt "greener" practices, improved law enforcement, and better monitoring.

The Amazon Fund is operated by the Brazilian Development Bank (BNDES), a federal public company. BNDES signed the first donation agreement with the Ministry of Norway in March 2009. Since then, important donations have further come from Germany and Petrobras, Brazil's largest oil company.

Fundraising among donors occurs ex post for achievements in slowing down emissions, measured against historic deforestation rates. Thus, the 2006-2009 reduction objective was 40% below historic deforestation (1996-2005). The 2010-2013 target is 30% below the rate from the previous period. Fund allocation has been provided on the basis of 5 USD per tCO_2 reduced in 2011.

Thus far the de-facto national deforestation rate has been below the targets, allowing for funding commitments from Norway in the order of 636,000,000 USD and from Germany in the order of 21,000,000 USD.

On the spending side, the Amazon Fund had approved 36 projects by the end of 2012, with a budgetary toll of more than 215,000,000 USD.

From Readiness to Implementation

It is perhaps little surprising, despite widespread efforts to move from the readiness phase (Phase 1) to the pilot phase (Phase 2) and even full implementation (Phase 3), that implementation output concerning "results-based action" and deployment of "results-based finance" remain scarce. The FCPF Carbon Fund has so far included a single "Emission Reduction Project Idea Note (ER PIN)" into its pipeline (step 2 out of 8), for Costa Rica, and the adoption of the first carbon transaction is still distant. Norway has regularly increased its contribution to Brazil's Amazon Fund (totalling approximately 640 million USD in commitment and 130 million USD in funds delivered, by August 2013),[112] but it is unclear whether it will have spent the amount of 1 billion USD by 2015, as it has pledged. Disbursement of donations is linked to the Fund's needs and the project approval rate has been lagging behind for a number of years.

The Indonesia-Norway-REDD+ Partnership has seen strains;[113] and other big donors such as the UK and the United States face difficulties in spending the funds they have.[114] While poor readiness performance is cer-

111 For the January 2013 term sheet version see https://www.forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/Jan2013/FCPF%20ERPA%20Term%20Sheet%2001-23-2013%20REV%20CLEAN%20DRAFT%20EN.pdf; for the Working Group results on pricing methodologies see the 2012 paper http://www.forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/June2012/FMT%20Note%202012-8%20Working%20Group%20Recomm%2006-09-12%20EN_0.pdf.

112 Amazon Fund, http://www.amazonfund.gov.br/FundoAmazonia/fam/site_en/Esquerdo/doacoes/.

113 For an update in 2012 see Christ Lang, Deforestation in Indonesia continues, despite the moratorium 4 May 2012, REDD-Monitor.

114 For a UK assessment see Funding for Forests: UK Government Support for REDD+ (2011), http://www.climatefocus.com/documents/files/funding_for_forests_uk_government_support_for_redd.pdf.

tainly part of the problem, the lack of REDD+ funding clarity – in simple words: what amount is paid when, for what action, in line with which indicator – is obvious and on the current basis the development of REDD+ market elements – where demand seeks supply through the help of Adam Smith's notorious "invisible hand" – is still far away. Indeed, some have started to question the Norwegian REDD+ initiative for Brazil noting that its main beneficiary, the Amazon Fund, has managed to draw only small portions of the available funding, while deforestation has all the same been falling steadily.[115]

Jurisdictional Approaches: REDD+ Crediting Niches and the VCS

Stronger Phase 3 implementation results are perhaps under way at the sub-national level. While Brazil's central government remains ambiguous on the question of emissions trading in the context of REDD+ – it promotes market-based approaches, but refutes "developed country offsetting" –[116] some of its provinces have resolutely embraced it. The Brazilian state of Acre negotiated with the Mexican state of Chiapas and the US state of California a memorandum of understanding to work toward "[integrating] Reducing Emissions from Deforestation and Forest Degradation (REDD) and other forest carbon activities into emerging greenhouse gas (GHG) compliance regimes in the United States and elsewhere".[117] Within the Governors' Climate and Forests Task Force, a network of subnational regions from five continents, the three states have continuously engaged in establishing a tri-partite REDD crediting framework, supported by a REDD Offset Working Group (ROW), which issued its recommendation for implementation earlier this year.[118]

However, to remind policy makers of the political sensitivity of regulating REDD+ and of sometimes fierce grassroots resistance, a group of local NGOs from Chiapas, supported by the international active pressure group Friends of the Earth and a few others,[119] recently published a highly critical letter addressed to Governor Jerry Brown of California, in which the campaigners take issue with what they see as transforming "Mother Earth" into a "business", into something "sold",[120] and it has been reported that Chiapas State Minister for the Environment Carlos Morales suspended the tri-party program for the Mexican State.[121]

Nevertheless, REDD+ action at the jurisdictional level is taking up speed. The German Development Bank KfW and the German development agency GIZ, for instance, have initiated the "REDD Early Movers" program ("REM"), which targets pilot initiatives from REDD+ governments at the national and at the subnational level. Under REM, Acre and KfW concluded a REDD+ performance based funding agreement valued at 16 million EUR. Much support for the jurisdictional approach has come from the voluntary carbon market and, in particular, one of its lead standard providers, the Verified Carbon Standard (VCS), which in 2010 launched the development of "new jurisdictional accounting frameworks for Reducing Emissions from Deforestation".[122] The jurisdictional initiative was partly an answer to the difficulties faced by many countries to establish countrywide REDD+ (monitoring and accounting) frameworks; partly it was born out of the understanding that many subnational regions were eager to engage in REDD+ and more "hands on" than

115 Müller/ Fankhauser/ Forstater, 2013.

116 See above footnote [102].

117 Memorandum of Understanding on Environmental Cooperation Between the State of Acre of the Federative Republic of Brazil, the State of Chiapas of the United Mexican States, and the State of California of the United States of America of 16 November 2010, text accessible at Tropical Forest group, http://tropicalforestgroup.blogspot.com/2010/11/text-of-ca-chiapas-acre-mou-on-redd.html.

118 The REDD Offset Working Group, California, Acre and Chiapas, Partnering to Reduce Emissions from Tropical Deforestation (2013), http://greentechleadership.org/documents/2013/07/row-final-report-executive-summary.pdf.

119 http://www.foe.org/news/archives/2013-05-california-redd-a-false-solution.

120 Reported by REDD-Monitor, 30 April 2013, http://webcache.googleusercontent.com/search?q=cache:QPjHwLDZjDQJ:www.redd-monitor.org/2013/04/30/we-reject-redd-in-all-its-versions-letter-from-chiapas-mexico-opposing-redd-in-californias-global-warming-solutions-act-ab-32/+accre+chiapas+california+redd%2B&cd=1&hl=en&ct=clnk&gl=us&lr=lang_de%7Clang_en%7Clang_fr%7Clang_es&client=safari.

121 El Heraldo de Chiapas, 8 July 2013, http://www.oem.com.mx/elheraldodechiapas/notas/n3045308.htm.

122 Voluntary Carbon Standard (VCS), 2010, VCS to lead development of new jurisdictional accounting frameworks for Reducing Emissions from Deforestation, ehttp://www.v-c-s.org/sites/v-c-s.org/files/VCS%20Statement%20Jurisdictional%20REDD%20Frameworks%201208.pdf.

many of their national Governments, to whom REDD+ is merely one of a multitude of other economic and policy sectors in international climate negotiations. In 2012, the Jurisdictional and Nested REDD+ (JNR) requirements were released, offering to states and provinces a "comprehensive framework for accounting and crediting emission reductions and removals from state, provincial and national REDD+ policies and programs as well as individual REDD+ projects".[123]

The VCS JNR standard is used by KfW and the Government of Acre, by the Norwegian Agency for Development Cooperation (Norad) and Costa Rica and regions in Brazil, Peru and the Democratic Republic of the Congo, by Chile and potentially Vietnam and Laos.

Other Crediting Initiatives[124]

With 77 projects and programs on five different continents the VCS has become the most visible standard for climate projects in the broad segment of agriculture, forestry and other land use (AFOLU) in the world, with specific requirements for peatland and other wetland accounting methodologies and project activities that are as of yet lacking in other standards. Yet, other AFOLU carbon crediting standards have been developed and are in use, if at a smaller scale. The Climate Action Reserve (CAR), mentioned in Part A of this Status Report I is applicable not just for the US but also for Mexico; maintaining its feature as a project-level standard, it allows for the full range of forest related emission reduction projects including REDD, A/R and improved forest management (IFM). The American Carbon Registry (CAR) offers a methodology to account for creditable emission reductions from restoring degraded deltaic wetlands; but so far it is only applicable for the Mississippi Delta.[125] Other regional standards are the Brazilian Brasil Mata Viva standard (forest and biodiversity protection) and the Chinese Panda Standard (IFM and A/R). Standards with an international focus are Plan Vivo – which allows for projects concerning non-commercial A/R plantations, agroforestry and REDD+ – and the Gold Standard, which recently acquired the Carbonfix Standard and now offers carbon certification from A/R, while methodologies for the certification of climate smart agriculture (CSA) and IFM interventions are being developed.[126]

Global REDD+ Funding: Current Trends

Tracking REDD+ support proves difficult, and the demands for a robust MRV on REDD+ and climate finance becomes ever more vocal. A number of research institutions and initiatives attempt to assemble international cash flows, but in the absence of clear rules for countries or international bodies such as the UNFCCC what to report and how, the results differ. The Word Resource Institute suggests that the fast-start monies (2010-12) pledged for REDD+ have reached 3.5 billion USD; the Prince's Charities International Sustainability Unit calculates 4.5 billion USD, while the REDD+ Voluntary Database – covering the years 2006-2017 sets the total amount at 4.58 billion USD.[127] Whichever figure is closest to the reality, it sits uncomfortably with the needs assessments for REDD+. UNEP's Green Economy Report estimates that an annual additional investment of 40 billion USD is required to halve global deforestation by 2030 and to increase reforestation and afforestation by 140 per cent by 2050 (relative to business as usual).[128] This is even more than the EUR 15-25 billion the European Commission and the 18-27 billion USD Johan Eliasch had

123 VCS, Press Release of 4 October 2012, http://v-c-s.org/news-events/news/groundbreaking-jurisdictional-redd-requirements-released, with links to the detailed requirements.

124 For an overview see Streck, C. / Costenbader, J., 2012, Standards for Results-Based REDD+ Finance: Overview and Design Parameters, Amsterdam.

125 American Carbon Registry, Restration of Degraded Wetlands of the Mississippi Delta, http://americancarbonregistry.org/carbon-accounting/standards-methodologies/restoration-of-degraded-deltaic-wetlands-of-the-mississippi-delta.

126 http://www.cdmgoldstandard.org/luf/luf_requirements.

127 For the World Resource Institute see http://pdf.wri.org/climate_finance_pledges_2010-08-12.pdf; International Sustainability Unit, 2011, The Rainforests Project: Emergency Finance for Tropical Forests, http://www.pcfisu.org/wp-content/uploads/2011/11/Two-years-on_Is-interim-REDD+-Finance-being-delivered-as-needed.pdf; for the Voluntary REDD Database see http://reddplusdatabase.org/#introduction.

128 UNEP, 2011, Forests in a Green Economy, A Synthesis, St-Martin-Bellevue.

previously calculated.[129] In 2011 and 2012, each time just under 150 million USD, flowing from some 15 million transacted tonnes of CO_2 under REDD+ and A/R projects came from the carbon markets proper (without bilateral cash-for-performance).[130] The share in REDD+ credits is falling (while A/R is growing). Peatland conservation based carbon transactions have not been reported at all. This again is a far cry from earlier projections as to the financial capacity of REDD+ carbon markets: Johan Eliasch had attributed an annual capacity of 7 billion USD.

129 Communication from the Commission to the European Parliament et al., Addressing the challenges of deforestation and forest degradation to tackle climate change and biodiversity loss, COM(2008) 645/3; Eliasch Review, Climate Change: Financing Global Forests (2008), http://www.official-documents.gov.uk/document/other/9780108507632/9780108507632.pdf.

130 Ecosystem Marketplace, Developing Dimension: State of the Voluntary Carbon Markets 2012.

2.3 Preparing the Paris Agreement (COP 21)

The latest negotiation session, the Lima Conference of December 2014, has brought about few developments on either LULUCF or markets in terms of substance. The Lima Call for Climate Action[131] makes a reference to ongoing work in technical expert meetings (paragraph 19) and welcomes the creation of a high-level forum on climate action (paragraph 21), known since as as the Lima Paris Action Agenda.

In a separate decision, the COP notes "with appreciation" that the Standing Committee on Finance has progressed on the issue of financing for forests and that it plans its third forum, in 2015, to address finance for forests.[132] In another, it requests the Green Climate Fund to "consider" decisions relevant to REDD+.[133]

The CMP, for its part, postponed its decision on whether to open the CDM to other LULUCF activities than afforestation and reforestation.

More relevant than the actual decisions, however, was the issuance of the first draft negotiation text of the Paris agreement. The issuance came in the form of an annex document to the Lima Call for Climate Action, containing "elements for a draft negotiation text".[134] These "elements", while identified as a "work in progress" *not* meant to "indicate convergence on the proposals" or to "preclude new proposals from emerging",[135] have since become the central reference point and touchstone for negotiations.

The "Elements text" had about 40 pages when issued. Since then, however, while mostly keeping the initial structure, the text has grown in size to more than 90 pages. A negotiation session in February 2015 in Geneva produced this long-list, referred to since then as the "Geneva Negotiation Text" or GNT. There are a number of provisions and "options" (i.e. proposals from Parties for which there are one or more counter-proposals from other Parties), which deal with LULUCF matters. Most of these are bracketed, i.e. contentious, and there is little agreement on core (non-contentious) provisions, but there is room for consolidation.

The GNT-Preamble notably contains an acknowledgement of the "special characteristics of land use systems": "Recognizing the special characteristics of land use systems, including the importance of food security, the diversity of global management systems, and the need to manage multiple sustainability objectives, may require particular consideration within actions under this agreement." A wide and general statement, this is still an important acknowledgement that the LULUCF sector in its capacity both as source of emissions and sinks, and taking into account relevant (other) objectives ranging from food security to sustainable development, needs to be specifically addressed.

It has become clear by now that the Paris Agreement itself will include few details on substance or process. Rather, it will establish a set of principles, rules and targets, while setting out a new institutional and governing structure for the Post-Kyoto period. This includes anchoring (or using terminology from ongoing negotiations: "mooring") provisions for the process of nationally defined targest and contributions ("intended nationally determined contributions" or "INDCs"), a Post-Paris work programme, and a regulatory framework for the "Pre-2020 ambition".[136]

In a substantial dimension, the Paris Agreement is likely to include specific sections on (i) mitigation, (ii) adaptation and loss and damage, (iii) finance, (iv) technology transfer, (v) capacity-building, (vi) transparency of action and support, and (vii) timing, process and institutional matters. It appears[137] that the GNT leaves sufficient room to negotiate, as part of the Paris Agreement, a number of LULUCF-related details. The Paris Agreement, then, could:

- *With respect to Mitigation*:
  - Encourage all Parties to use land use approaches to mitigate climate change;
  - Identify land use GHG mitigation in INDCs;

[131] Decision 1/CP.20.
[132] Decision 6/CP.20, paragraphs 15 and 16.
[133] Decision 7/CP.20, paragraph 18b.
[134] Decision 1/CP.20, paragraph 5 in conjunction with the annex.
[135] Cf. footnote 1 on page 6 of Decision 1/CP.20.
[136] Cf. the "Scenario Note" of the ADP Co-Chairs of 24 July 2015, at http://unfccc.int/resource/docs/2015/adp2/eng/4infnot.pdf.
[137] See, in this context, the policy analysis of Lee, D./Penman, J./Streck, C., Land use in a future climate agreement (2015).

  - Define a market mechanism applicable also to LULUCF activities (in particular concerning GHG emissions);
  - Set out land use accounting principles building on relevant UNFCCC decisions (including on REDD+) and Kyoto Protocol practice (including the recognition of WDR accounting); and
  - Seek synergies between adaptation and mitigation approaches to work towards the integral and sustainable management of ecoystems;
- *With respect to Adaptation and Loss and Damage*:
  - Emphasize LULUCF-related interventions, including for national planning purposes, that mitigate the risk of global warming and sea-level rise;
- *With respect to Finance*:
  - Recognize the need to finance LULUCF mitigation and adaptation interventions, through REDD+ but also independent from it;
  - Mobilize cumulative funding streams including with a view to markets for countries that wish to engage; and
  - Prioritize LULUCF interventions that serve both adaptation and mitigation; and
- *With respect to Transparency of Action and Support*:
  - Provide guidance on harmonizing or synchronizing LULUCF accounting methods in terms of coveage, reference levels, etc.) across countries;
  - Provide parameters for the establishment of MRV principles related to INDCs;
  - Provide a link between INDCs and a future market mechanism; and
  - Provide guidance on how to account funds leveraged through markets as climate finance.

By contrast, a range of issues will be left to subsequent negotiations within the Paris framework. These include, among others, the design of one or more market mechanisms and the definition of detailed LULUCF accounting rules.

3 Options for Industrialized Countries (Annex I)

The following chapter consists of an analysis of political options to create direct and indirect incentives for peatland related mitigation actions in industrialized countries. The analysis first discusses opportunities to improve the accounting framework for peatlands in industrialized countries under the 2015 agreement (Paris Agreement) or within its framework (chapter 3.). We then explore a number of concrete incentive options, in particular the expansion of the Joint Implementation (JI) mechanism and the creation of a sectoral market mechanism transcending project-based crediting towards national intervention-cum-crediting (chapter 4.). In a third step, we assess international horizontal opportunities, i.e. linking national and/or supra-national emissions trading systems, when one of the linked systems allows for peatland or, more generally, LULUCF-related allowances or credits, but the other does not (chapter 3.3). In a fourth step, we close in on the EU emissions trading system, exploring (i) crediting options for peatland related mitigation actions under the EU ETS and the ESD based on Article 24 (a) EU ETS, (ii) compliance, trading and crediting options within a separate peatland or, more broadly, LULUCF regime, (iii) other market-based incentives to stimulate relevant mitigation action in an EU perspective, and (iv) market-based incentives in the national context with relevance for the national LULUCF information to be developed in line with Article 10 of Decision No 529/2013/EU ("EU LULUCF Accounting Decision") (chapter 3.4). Finally, we outline options to strengthen voluntary markets including their impact for the establishment of a compliance regime in the future (chapter 3.5).

3.1 Improved 2015 Accounting Framework (Option A-1, A-2 and A-3)

Accounting for peatland-related emissions – an exotic and sketchily reported item, when the Kyoto framework was first drawn up – has been consistently strengthened in recent years (see chapter 3 above). The Conference of Durban (CMP 7) introduced the accounting option of Wetland Drainage and Rewetting (WDR) focussing on the rewetting of drained peatlands. Accounting for Forest Management (FM), including that of forests on organic soil, has become mandatory, as have all other activities that already had been chosen by

Parties for the first commitment period. The adoption, at IPCC level and subsequently referenced by COP and CMP, of the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* and the *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol* (KP Supplement) have made peatland-related reporting more comprehensive and generally more robust. A new reporting process consisting of Biennial Reports (BRs) and International Assessment and Review (IAR) for industrialized nations promises to strengthen the reporting capacity across sectors including peatland related emissions. The BR and IAR processes also mark a significant milestone in that they link emission trends with concrete policies and measures of intervention. This said, the BR primers submitted by industrialized countries until 1 January 2014 do not yet point to a specific emphasis on peatland coverage.[138] However, national reporting on the issue, by and large, becomes more refined. The EU LULUCF Accounting Decision, intended to implement the revised UNFCCC accounting rules to be "fully consistent" with the relevant decisions,[139] further manifests the emergence of a more thorough and comprehensive accounting capacity. Indeed, it goes further than the respective UNFCCC rules in a significant way: It phases in *mandatory* accounting for grassland management and cropland management. These activities are responsible for the large majority of peatland emissions. Overall, the accounting task is certainly not negligible: Forests and agricultural lands cover about three quarters of EU territory with highly diverse and fluctuating patterns of carbon stock. Work on implementation guidelines at the EU and at Member State level is on-going.

3.1.1 Enhancing Coherence in Reporting/Accounting (Option A-1).

Important inconsistencies in the different accounting regimes remain, and there is no reason why – at least for industrialized nations –[140] peatland related emissions from agricultural land use or from peat extraction,[141] should be reported, and accounted for, on a voluntary basis only. Apart from comprehensive and mandatory coverage, there are a number of (cumulative) options to render peatland accounting and, indeed, accounting for 'land' as a whole more simple, transparent, and robust. The following options are recommended for consideration under the 2015 agreement:

- Reporting on and accounting for WDR should become obligatory in the 2015 agreement. WDR would, as long as cropland management and grazing land management are not included in mandatory accounting, for many countries act as an effective approach to cover the majority of the emissions from land in agricultural use (see fig. 7[142]). WDR additionally covers the hitherto neglected emissions from peatland under peat extraction.

138 Cf. the collection of BR reports submitted at http://unfccc.int/national_reports/biennial_reports_and_iar/submitted_biennial_reports/items/7550.php. We have surveyed the reports of Belarus, the European Union, Finland, Germany, Lithuania, and Poland.

139 Decision No 529/2013/EU, recital 5. See also recital 6, where emphasis is put on the fact that the new Union rules "should not generate an additional administrative burden" in excess of what is required under UNFCCC guidance.

140 For improved obligatory peat related accounting at the universal level, see chapter 5 below.

141 Peatland emissions from Afforestation, Reforestation and Deforestation, as well those from Forest Management must be mandatorily accounted for in the second commitment period.

142 Data form the latest CRF tables. For countries using default IPCC emissions factors (Estonia, Iceland, Latvia, Lithuania, Poland, Russia) these emission factors were substituted with the updated factors provided in the IPCC 2013 Wetland Supplement. Emission percentages can be above 100% because some countries claim (large) sinks in mineral soil croplands and particularly grasslands. Total net carbon emissions and removals from agricultural soils can thus be lower than the losses from organic soils alone.

Figure 7: Emissions from Land in Agricultural Use

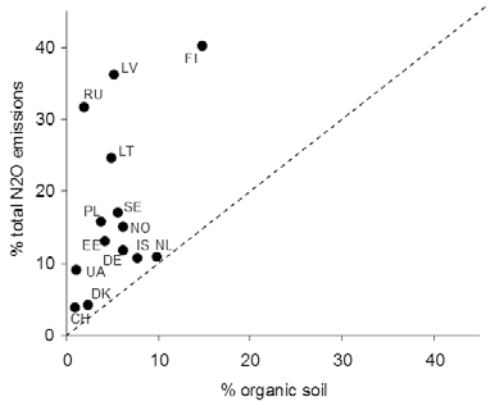


Fig. 7a: N_2O emissions from organic soils vs. area of organic soils under agriculture in selected European countries. Emissions are expressed as percentage of total N_2O emissions from agricultural soils; the area of organic soils as percentage of total area under agriculture (cropland and grassland). The dashed line depicts the 1:1 ratio.

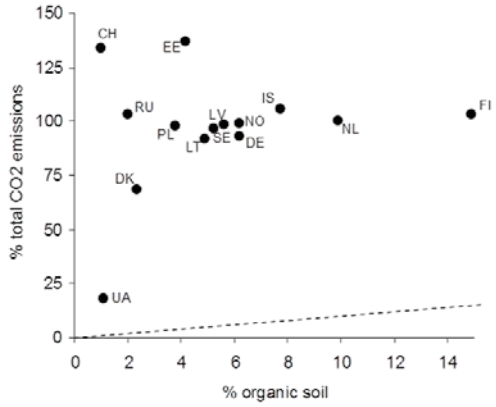


Fig. 7b: Net CO_2 emissions and removals from organic soils vs. area of organic soils under agriculture in selected European countries. Emissions are expressed as percentage of total CO_2 emissions from agricultural soils; the area of organic soils as percentage of total area under agriculture (cropland and grassland). The dashed line depicts the 1:1 ratio.

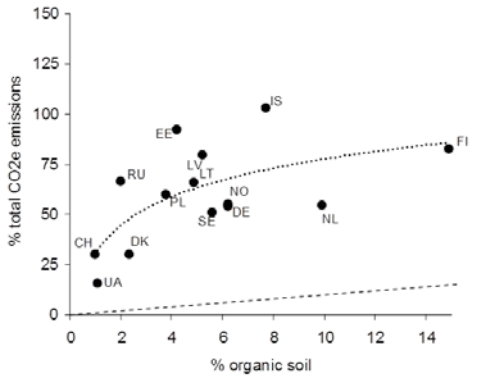


Fig. 7c: Net greenhouse gas emissions from organic soils vs. area of organic soils under agriculture. Emissions are expressed as percentage of total CO_2e emissions from agricultural soils; the area of organic soils as percentage of total area under agriculture (cropland and grassland). The dashed line depicts the 1:1 ratio, the dotted line a crude logarithmic fit. (GWP of N2O = 298)

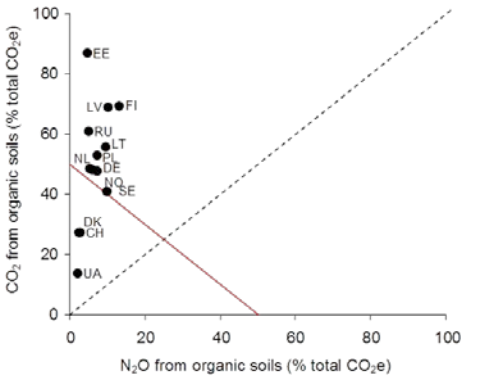


Fig. 7d: CO_2 emissions vs. N_2O emissions from organic soils expressed as percentage of total CO_2e emissions from agricultural soils. The dashed line depicts the 1:1 ratio. For data points above and to the right of the red line emissions from organic soils constitute the majority of emissions from agricultural soils.

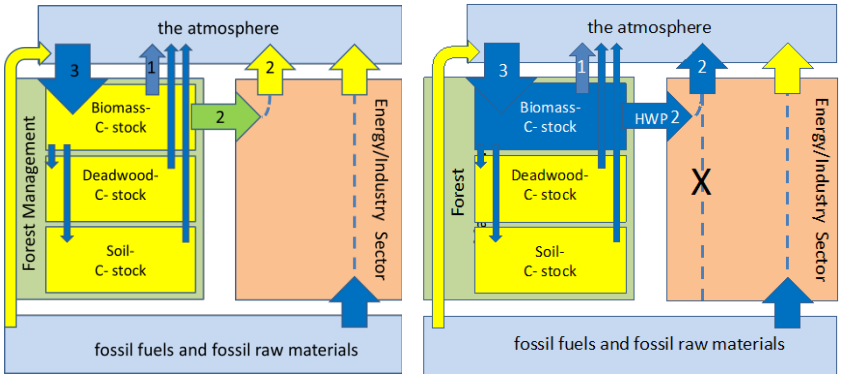
There are good arguments to follow the 2006 IPCC Guidelines and to combine the sectors "Agriculture" and "LULUCF" in one single, comprehensive AFOLU (Agriculture, Forests and Other Land Use) sector and, more generally, to concentrate – and look comprehensively at – all forms of land-use associated emissions.143 Currently land-use associated GHG fluxes are accounted under various sectors, notably under the sectors Agriculture and LULUCF, but also under Energy, Industrial Processes, Settlements and Waste. While

143 Parker, C et al., 2014, The land-use sector within the post-2020 climate regime, Norden.

fragmentation is not necessarily a disadvantage, a fragmentized reporting and accounting approach may lead to complexity, non-transparency and inconsistency. This said, a clear distinction within the AFOLU sector should be made between emissions and removals that unequivocally depend on "land" sensu stricto (i.e. the soil as a means of production) and those that are associated but not bound to the land.

- Consider AFOLU holistically, i.e. not only as the combination of land-use based emissions and agricultural ones, but as an integral part of the overall emission reduction framework. In the past the accounting rules of LULUCF have often been modified without regard to the interdependency with other sectors. A holistic approach that better recognizes the links of AFOLU with these other sectors (notably Energy and Industrial Processes) could, for example:
    - Exclude from the "land" sensu stricto the sources and pools that are not or no longer (unequivocally) bound to the land and that can more easily be monitored without reference to land areas (i.c. N2O from fertilizer application, Harvested Wood Products (HWP), see below).
    - Link N2O emissions from use of fertilizer and manure directly to fertilizer and manure production (i.e. to industrial ammonia production and – similar to enteric fermentation - to cattle), not to the land.
    - Subject to our point below: Account for CO2 emissions from Harvested Wood Products HWP (and similar products from other land use activities that may arise144) as soon as they have left the land. The land sector would than again account for all CO2 emissions related to the production of these goods to the effect that it provides non-accountable 'carbon free' products to other sectors.145 Whereas this to some extent would thwart the accounting of emissions "at the right moment in time", it would – without consequences for climate change mitigation – simplify the accounting labyrinth developed for HWP146 considerably and would be beneficial for climate change mitigation efforts in other sectors, where fossil fuels and raw materials are replaced (see figure 2);

Figure 8: Option from accounting for Forest Management.



Left: current situation; right: alternative option in which changes in biomass carbon stocks are no longer accounted and HWP are provided "carbon-free" to other sectors. Blue: stocks or fluxes not monitored and not accounted for; green: fluxes monitored but not immediately accounted for; yellow: monitored and accounted for.

144 E.g. Harvested Grazing Land Products such as carpets and insulation material made of wool, Harvested Wetland Products, such as construction materials made of reeds, Harvested Cropland Products, such as biomass based plastics.

145 This would imply returning to the Kyoto Protocol first commitment period (Decision 16/CMP.1) procedure.

146 See the IPCC 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol (KP Supplement), chapter 2.8, pp. 2.106 – 2.131.

- Account for the biomass sink in Forest Management only via the soil and dead wood pools (see figure 2). Such accounting would be consistent with the fact that
    - forest management ultimately aims at the sustainable provision of wood to other sectors, not at stockpiling it in the land sector;
    - a sustainable biomass flux is from a climate change mitigation perspective –certainly on the longer term – more effective than a static, steady state or even an increasing biomass carbon stock.[147]
    - Accounting for the biomass sink only via the changes in dead wood and soil carbon stock would largely change the land from an offset-sector to a sector that – like all other sectors - has to reduce its emissions (from fuel, fertilizer, soil carbon etc.) while maintaining and increasing the delivery of its products. The sector would than conceptually not claim but solely "manage" the biomass sink capacity of the land and handle strictly quantified "carbon free" wood – HWP – and other biomass products over to other sectors. This would solve the key problems of LULUCF:
    - non-permanence of the biomass carbon stocks, as the permanence would be realised in the biomass receiving sectors, where biomass materials replace fossil raw materials and fossil fuels and even instantaneous oxidation will lead to much more permanent emission reductions than forest biomass carbon stocks can ever provide. Sequestered carbon that (e.g. by regular decomposition but also by *force majeure*) does not end up in HWP nor in the (more persistent) deadwood and soil pools but returns in the atmosphere would not constitute a monitoring or accounting burden, as it sequestration was also not monitored and accounted for (zero sum game, but with much less monitoring effort),
    - the large uncertainties concerning emission/removal estimates that are inherent to natural systems, as only the simply measurable "delivered" carbon would be accounted,
    - additionality, i.e. the factoring out of natural effects on removals[148], which FM and the Managed Land Proxy currently simply ignore), and
    - the legacy effects, because not the stock changes but solely the emissions from technical management would be accounted for (under Energy).

The incentive for arriving at an optimal management from the climate perspective would then also be via HWP, which other sectors can acquire "carbon free". This said, to control a lasting change in biomass carbon stock, it is necessary to keep on monitoring and accounting for A/R and D.

    - Harmonize the handling of *force majeure* events across sectors: the differential treatment[149] of disasters and inter-annual fluctuations and uncertainties in LULUCF and in other sectors is unwarranted and should be done away with. The incentive effect is dubious: Parties will eagerly claim natural sequestration benefits as accountable effort, while shifting responsibility for disaster events, which all too often are man-made. This aside, natural disturbances (e.g. tsunamis, hurricanes, fires, pests and diseases) almost

147 Other carbon pools than biomass in forests (and agricultural land) do have an important ecological role beyond the climate, such as dead wood for biodiversity, soil carbon for hydrology and nutrient cycling, etc. and should be monitored and accounted for. This is especially relevant for the soil carbon stock, especially in case of peatlands (The soil carbon stock in peatlands is in general an order of magnitude larger than the biomass carbon stock.

148 Most Forest Land sequesters carbon without management.

149 For the (fairly recently adopted) differential treatment of "natural disturbances" see Decision 2/CMP.7, Annex, paragraph 1 (a). For a wider discussion see Iversen, P./Lee, D./Rocha, M., Understanding Land Use in the UNFCCC (2014), accessible at http://www.climateandlandusealliance.org/uploads/PDFs/Understanding_Land_Use_in_the_UNFCCC.pdf.

always strongly affect sectors outside LULUCF[150] and are conceptually similar to other *force majeure* events such as economic peaks and crises or industrial catastrophes, which are also largely 'beyond the control of, and not materially influenced by, a Party'[151] without corrections in accounting having been claimed as a consequence. On the side of fluctuations, indeed year-to-year variations in emissions and removals within LULUCF can be large. But also other sectors face this problem, including fugitive emissions, landfills, wastewater management, and indirect N_2O emissions from agriculture. A better way to address *force majeure* and inter-annual fluctuation events is to account for them but to agree on flexibility instruments for affected Parties (such as the extension of compliance periods; the banking and borrowing of units between compliance periods, and other).

- Use a common accounting method for all GHG fluxes and, in our view,[152] choose net-net accounting, i.e. set historical period (base year or period) as accounting reference for all land associated emissions and removals and for all accounting categories:
    - With respect to 'land' three fundamentally different references for accounting are currently in use (see table 1): ARD uses gross - net accounting, Forest Management uses the (forward looking) reference level. *All* other LULUCF activities and *all* other sectors use the base year as a reference for accounting. Not only does this result in complexity and non-transparency, the divergent accounting modalities also create 'carbon values' of completely different denomination (in terms of how the atmosphere sees it), with major – but largely unnoted – consequences for an equitable emissions trading framework and the fungibility of units: with respect to ARD and FM the principle "a tonne is a tonne" simply does not hold. The reference level approach used in Forest Management may provide "emission reductions", independent of whether a country with respect to forest is a source or a sink, or indeed create perverse incentives, in particular when it comes to rewetting drained peatlands.[153] This approach makes Forest Management unique in the Kyoto Protocol in the sense that an increase (i.e. a reduced increase) can be booked as a decrease and converted into tradable units. On the other hand the reference level approach leads to the bizarre situation that planned changes in management that are positive for the climate also in an absolute sense (according to net-net accounting), have to be excluded from the reference level calculation to be accountable as an emission reduction.[154]

Table 4: Accounting Methods for LULUCF.

Name of Accounting Method	Gross/Net Accounting	Net/Net-Accounting	Reference Level
Name of Accounting	Gross/Net Accounting	Net/Net-Accounting	Reference Level

150 See, in this context, also the liability discussions for carbon capture and storage (CCS) – the majority of risks would well qualify as force majeure (seismicity, groundwater contamination, and the like).

151 Ibidem.

152 The matter is disputed. Ellison et. Al. , favor "continuous gross-net accounting"; Canaveira argues for a reference level approach.

153 A perverse incentive not to rewet (and not to restore the natural habitat) arises, for instance, in the scenario, in which a drained peatland is used as managed forestland (FM): If you rewet (causing ongoing emissions from the soil to stop), the forest may be cleared as a consequence; the land then moves from FM to AR/D. Given an RL approach, however, the CO2 emissions arising from the drainage are embedded in the RL and not seen in the accounting. The move from FM to AR/D only looks at the loss in forest biomass. After rewetting of the now deforested peatland, the arising methane emissions will have to be accounted (this is now 'D' land that must be tracked 'forever'). So in accounting you end up with 1) a loss of biomass and 2) an increase in accounted soil emissions. In reality you have 1) loss of biomass and 2) a reduction in net soil emissions.

154 Canaveira, p. 49.

Method			
Method of calculation	Assesses the *real* net GHG flows over a given period (Period X[155])	Assesses the difference between the *real* net GHG flows over a given period (Period X) and the *real* net GHG flows over a *preceding period* (Period A[156])[157]	Assesses the difference between the *real* net GHG flows over a given period (Period X) and the *beforehand assumed* net GHG flows over *that same period* (forward-looking projection)
Object of awarding	Awards (gross) result	Awards (net) emission reduction *achievements*	Awards emission reduction *efforts*
Nature of calculation reference	No reference (= reference is 0)	Reference is a past situation that really has existed	Reference is an assumed future that never will exist
Example[158]	Country L removes 5 m tonnes of CO_2eq in Period X	Country L removes 5 m tonnes of CO_2eq in Period X, while in the base period A it had removed 6 m tonnes of CO_2eq	Country L removes 5 m tonnes of CO_2eq in Period X, whereas it had beforehand assumed to remove 3 tonnes of tCO_2eq in Period X
Booked emission reduction	credit of 5 m tonnes of CO_2eq	debit of 1 m tCO_2eq	credit of 2 m tonnes of CO_2eq
Base of comparison	No comparison	Allows for comparison of *achievements* between countries and sectors	Allows for comparison of *efforts* between countries
Environmental integrity	Reveals short-term trends and shows what the atmosphere sees *in the short run*, but not what it sees on the longer run	Conceals short-term trends, but shows what the atmosphere sees *in the longer run*	Conceals real short and long-term trends. Shows only what the atmosphere *would have seen in the short run*
Main advantage	Shows GHG flows over a concrete (short) period	Aligns LULUCF sector with other economic sectors	Accommodates individual national circumstances; removes effects of age class structure
Main disadvantage	May generate "credits" where a long-term cli-	Single base year is inadequate to reflect	Calculation may be subject to 'political'

155 Period X is the commitment period.

156 Period A is generally the base year 1990.

157 With time correction in case of different lengths of time between the periods concerned.

158 Mind that the examples represent the same situation in the commitment period.

matic benefit is not achieved	the long-term dynamics of forestry	baselines; may generate "credits" where a climatic benefit is not achieved

- The reference level approach in forest management[159] is generally defended by pointing at "legacy aspects", i.e. historically determined age-class structures and management effects. Legacy effects are, however, treated very diversely among sectors. Whereas past-management decisions control the performance of many industries over long periods, legacy effects are only used to provoke special references for forests. In the first Kyoto Protocol commitment period, gross-net accounting provided forestry with (short-term) benefits compared to all other sectors, which were subject to net-net accounting. As gross-net and net-net accounting converge the longer a commitment period lasts, gross-net accounting was exchanged for the reference level approach in the second commitment period. This ensured that Forest Management - in contrast to all other sectors and activities – continues to be rewarded for its assumed *efforts*, not for its actual *achievements* in reducing the atmospheric GHG burden. In striking contrast, similar legacy effects of former Soviet states were rendered largely irrelevant when their 'hot air' allowances were effectively curtailed as a consequence of the Doha decision[160].
- Different starting conditions of countries (with respect to age classes, historical management, etc.) should – in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions – be addressed by their differentiated commitments, instead of accommodated by fact-veiling accounting rules.

3.1.2 Harmonized Reporting and Accounting (Option A-1 cont`d)

As described in more detail above in chapter 3.1, emissions *reporting* under the Convention includes the broad range of land-related emissions: Forest Land (FL), Cropland (CL), Grassland (GL), Wetlands (WL), Settlements (S) and Other Land (OL), while *accounting* under Kyoto was restricted to Afforestation/Reforestation (A/R) and Deforestation (D) on the mandatory side, and Forest Management (FM), Cropland Management (CM), Grazing Land Management (GLM), and Revegetation on the voluntary side. For the second commitment period, FM becomes mandatory, and Wetland Drainage and Rewetting (WDR) becomes a new voluntary activity.

Harmonizing UNFCCC-based reporting and Kyoto-based accounting has been discussed for a number of years,[161] and the Durban COP in 2011 established a work programme for SBSTA to "explore more comprehensive accounting of anthropogenic emissions by sources and removals by sinks from land use, land-use change and forestry, including through a more inclusive activity-based approach or a land-based approach".[162] Negotiations have so far not produced any clear conceptual guidance.

A harmonized reporting and accounting framework could – at its basis – synchronize reporting and accounting in that all land-use related reported emissions would be the basis for comprehensive emissions accounting. Harmonization would remove the patchwork of today's KP accounting and aim at what is referred to as a "land-based" approach rather than an "activity-based" approach: It would treat all emissions/removal sources as mandatory in terms of reporting and accounting, and it would cover all land-based emissions,

[159] See Canaveira, p. 55.

[160] FCCC /KP/CMP/2012/L.9.

[161] Cowie, A.L. / Kirschbaum, M.U.F., 2007, Options for including all lands in a future accounting framework, Environmental Science & Policy, vol. 10 (4); for a recent overview of the discussion Prag, A. / Hood, Ch. / Martin Barata, P., 2013, Made to Measure: Options for Emissions Accounting under the UNFCCC, OECD, Climate Change Expert Group, Paper No. (1).

[162] Decision 2/CMP.7, paragraph 5.

possibly including "unmanaged" lands (forests, grasslands, wetlands) to avoid arbitrary reporting decisions.[163]

As a correlate, it may be advisable to retain a two or more tiers stringency approach in terms of specific emissions/removals sources and areas,[164] as long as there is a continuous and verifiable effort to improve the accounting tier over time, similar to the Expert Review Team (ERT) approach under the Kyoto Protocol.[165] In a submission to SBSTA in 2012, Australia suggested a "nesting approach" consisting of (i) "monitoring and reporting of all land sector emissions and removals" using remote sensing data, and (ii) concrete accounting for anthropogenic emissions/removals.[166] This may point to a workable solution.

Where reporting and accounting differ, however, is the treatment of the baseline. Except for gross-net accounting (see above chapter 3.1) accounting implies the comparison with a baseline period or a forward looking reference level. As discussed in section 3.1 above, net-net accounting, i.e. measuring the carbon flux minus ('net') the carbon flux of the base period, seems the more robust alternative for the 2015 agreement, as it is not dependent on uncertain projections and comparably easy to calculate, once historic emissions are established.[167] It also streamlines accounting methods for industrial (fossil-fuel-based) emissions and land-used related emissions. It is true that long-term trends in non-anthropogenic emissions may obscure the accounting method; however, arguably such long-term trends are comparable to macro-economic developments, which impact industrial emissions and which are not specifically accounted for either (see section 3.1 above).

In a graphical dimension, a separate LULUCF accounting and compliance framework for industrialized countries would look as follows (Fig. 10, see below):

[163] For the pitfalls of differentiating between "managed lands" and "unmanaged lands" see Ecosystems Climate Alliance, Deconstructing LULUCF and its Perversities, http://www.ecosystemsclimate.org/WatchRead/tabid/1602/mod/6294/articleType/ArticleView/articleId/2274/DECONSTRUCTING-LULUCF-and-its-perversities.aspx

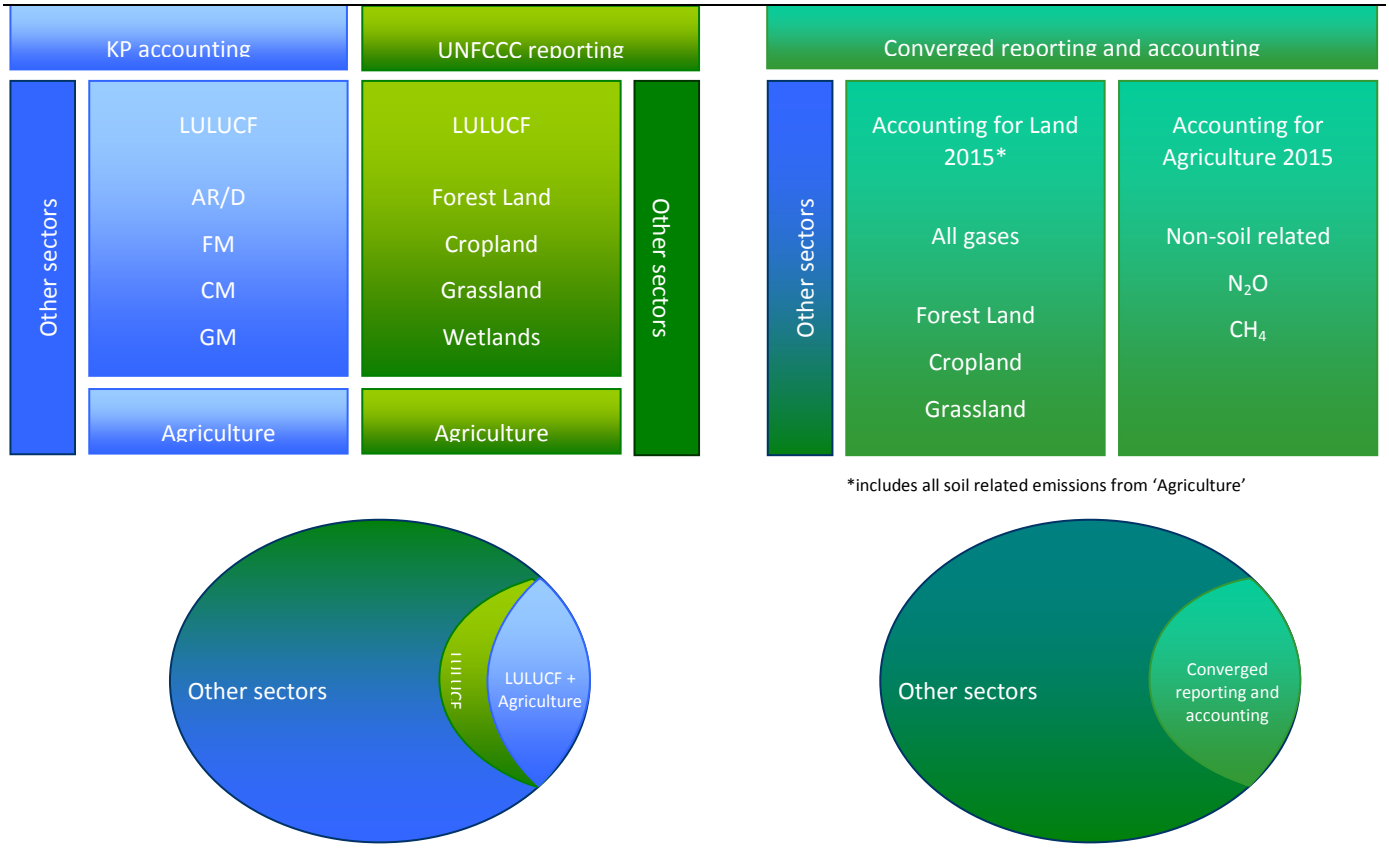
[164] Parker, C., et al. argue for the consideration of different capabilities in line with the common but differentiated responsibilities approach, see footnote 143 above.

[165] Canaveira proposes a variety of different entry points for Parties and defines minimum accounting levels.

[166] UNFCCC, Views on issues relating to a more comprehensive accounting of anthropogenic emissions by sources and removals by sinks from land use, land-use change and forestry, including through a more inclusive activity-based approach or a land-based approach, Submissions from Parties, 12 October 2012, FCCC/SBSTA/2012/MISC.19.

[167] In support for net-net-accounting under a future agreement see also Liu, S. et al., Analysis of LULUCF Accounting Rules after 2012, Advances in 2 (2011) Climate Change Research 178. In support for a ubiquitous reference level approach Canaveira.

Figure 9: Today agreement vs. Option for the 2015 Accounting Framework



3.1.3 Enhancing the Institutional Framework (Option A-2)

Kyoto Protocol reporting, accounting and control of emission data of industrialized countries is subject to a particular set of rules and a dedicated institutional framework. Guiding rules are Articles 5, 7 and 8 of the Kyoto Protocol (KP) and corresponding decisions of the CMP. Among these requirements, countries commit to

- having in place a national system for the estimation of greenhouse gas emissions by sources and removals by sinks (Article 5 (1) KP); and
- the adherence to agreed methodologies, chiefly
    - e revised 1996 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines 1996); along with
    - the 2000 IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (IPCC GPG 2000);
    - the 2003 IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry (GPG-LULUCF);
    - and the above-mentioned 2013 Supplements.

They are also put under the obligation to submit annual national greenhouse gas inventories (NGHGIs) and, in regular intervals, national communications (Article 7 KP) and, since recently, the Biennial Reports (BRs). The KP-based information is subject to a formalized review cycle in accordance with Article 8 KP, in which expert review teams (ERTs) may raise so-called "Questions of Implementation" to the Kyoto Protocol Compliance Committee. Within the framework of the Convention, the new BR/IAR review cycle has yet to become fully operational; in any case, it will have less 'sanction leverage' than the review cycle under the Kyoto Protocol.

While the institutional framework – in particular the one set under the Kyoto Protocol – has proved to be overall resilient,[168] many countries have been struggling with meeting the full range of requirements, especially in the field of LULUCF,[169] and capacity at the review team level is under stress.[170] With a view to institutional implementation of reporting and accounting of LULUCF related emissions under the 2015 agreement, a number of improvements could be made, *inter alia*:

- In-country capacity should be strengthened and horizontal cooperation and harmonization of practices (e.g. regarding soil monitoring)[171] improved. The EU holds the potential[172] to spearhead enhanced coordination among the 28 Member States and to give technical assistance to its Eastern neighbours and beyond;
- Strengthen ERT capacity by removing thresholds of geographic team representation and multi-language options. Review teams should be assembled from roasters irrespective of their nationality and English should be the sole reporting language. Geographic representation for experts and the retention of all official UN languages, in turn, should be guaranteed in the proceedings of the Compliance Committee;
- The Facilitative Branch of the Compliance Committee – currently virtually inactive – should be put in use to assist countries with accounting and reporting challenges. In most cases the Facilitative Branch would appear the more appropriate forum to deal with inaccuracies compared to the Enforcement Branch.

3.1.4 Creating a Separate Compliance Framework (Option A-3)

Finally the option to install a separate quantified emission limitation and reduction obligation (QUELRO) and compliance framework for LULUCF deserves attention. The European Union has long argued that the Kyoto LULUCF rules would "entail lowering the actual stringency of the current emission reduction pledges and imply that reductions can be claimed without additional actions".[173] Establishing a separate – *prima facie* non-fungible –compliance regime for LULUCF would permit to, *inter alia*

- Neutralize the issue of additionality – distinction of human-induced effects from variable non-anthropogenic developments – in comparison to fossil-fuel emissions;
- Balance the issue of longevity of sequestration and LULUCF-based emission reductions;
- Manage remaining uncertainties concerning emission/removal estimates;
- Take into account the need for longer commitment periods to account for long rotation periods in forest management, inter-annual variations, and other effects; and
- Strengthen the transparency, predictability and, potentially, the ambition of economy-wide country targets.

Whether the overall ambition of economy-wide country targets could be enhanced or not, would depend on a number of factors. The 'net gain' expectation under current Kyoto rules for most industrialized countries was

[168] The expert review teams (ERTs) have raised and transferred Questions of Implementation to the Compliance Committee in only eight (8) incidents, cf. http://unfccc.int/kyoto_protocol/compliance/items/2875.php.

[169] For a case study (Lithuania) see Raginyte, G. / Nauekaite, J., Managing land use, land use change and forestry in the context of climate change, Sustainable Development Strategy and Practice 1 (2012) 6, accessible at https://www3.mruni.eu/ojs/sustainable-development-strategy/article/view/329;

[170] See the various briefs and motions from Parties concerned in proceedings before the Compliance Committee (e.g. from Romania), accessible at http://unfccc.int/kyoto_protocol/compliance/items/2875.php.

[171] For current deficits see Kuikman, P., et al., 2011, Policy Options for Including LULUCF in the EU Reduction Commitment and Policy Instruments for Increasing GHG Mitigation Efforts in the LULUCF and Agriculture Sectors, at http://ec.europa.eu/clima/policies/forests/lulucf/docs/synthesis_report_en.pdf.

[172] See e.g. the EU support by the Joint Research Centre: http://forest.jrc.ec.europa.eu.

[173] European Commission, International climate policy post-Copenhagen: Acting now to reinvigorate global action on climate change, Communication COM(2010) 86 final, p. 5.

a decisive factor for Annex I governments to accept the targets in the first place.[174] Thus, removing LULUCF from the overall balance may have the contrary effect of having governments argue for less ambitious targets than they would if they were left with the LULUCF flexibility option. Yet, this remains to be seen.

In any case, removing the LULUCF sector from actual country commitments – e.g. the European Union has offered to adopt a binding 20% target for 2020 without regard to LULUCF emissions – should not lead to a situation where LULUCF emissions fall altogether outside the international compliance system. Rather, we argue that the LULUCF sector should be given its own target and compliance system under the Convention, with comprehensive emissions and sink coverage from all sources – including peatlands – and ambitious targets expressed relative to a baseline year or period.

Compliance can come in different forms, and there may be flexibility in setting the threshold. Kyoto-styled compliance – countries have to meet a pre-defined emissions budget and are sanctioned if they fail – may be the long-term goal; but there are options of lesser intensity and with fewer enforcement powers that could be initially agreed on.

Compliance options may include:

- Annex I countries undertake commitments in the form of non-binding mitigation pledges: On the basis of harmonized international accounting rules (see above, section 3.2) each Annex I country sets a *voluntary target* for a certain target period (e.g. 2020-2030). 'Compliance' with the target will be internationally audited, and findings on 'compliance'; or 'non-compliance' with recommendations will be published; but no sanction will be imposed;
- The 2015 agreement will set *internationally agreed* non-binding targets for Annex I countries; 'compliance' will be assessed as above ("no-lose target");
- Annex I countries set their *own binding LULUCF QUELRO* and define compensation measures to redress any instance of non-compliance;

Binding targets (QUELROs) for Annex I countries will be agreed internationally; and compliance will be assessed and enforced similarly to the enforcement of the Kyoto Protocol; emissions trading is an option.

3.1.5 Separate Accounting and Compliance for Peatlands (Option A-3 con`d)

A further option would consist in establishing a separate accounting and compliance framework for peatland (or organic soil) related emissions only. Such an approach would also allow for an exclusive accounting and compliance window for peat-rich Annex I countries, among them Belarus, Canada, the EU (representing specifically the Baltic and Nordic countries as well as Germany, the Netherlands and Poland), Russia and Ukraine.

This option would ideally be wholly compatible with a broader LULUCF related accounting and compliance framework for all Annex I countries, and act as a 'nested' approach: A firm peatland compliance regime for a number of Annex I countries could be integrated in a pledge or "no-loose" variation (i.e. that missing the target will be noted but not sanctioned) of a broader LULUCF compliance framework (see above, section 3.4), addressing issues of double-counting, harmonized accounting rules, and other. This option is a minimalist variation of a sectoral approach – containing provisions on the target, compliance and trading alone without any reference to actual mitigation implementation means – and will be discussed below under section 4.2.

174 Böhringer, Ch., The Kyoto Protocol: A Review and Perspectives, Center for European Economic Research, Discussion Paper 03/61.

3.2 A Flexible Mechanism for Industrialized Countries: Options for Peatland Interventions (Option A-4 and Option A-5)

In recent years, the fate of the Clean Development Mechanism (CDM) and the potential for new mechanisms targeting developing countries have taken centre stage in international negotiations (on these see below chapter 4.3.2). However, designing a mechanism, or several mechanisms, targeting industrialized countries and their 'capped environments' (i.e. those economic areas which are subject to one single or a range of separate QUELROs) may ultimately have a higher long-term effect, as emerging economies may gradually embrace targets for themselves and as 'capped environments' may ultimately be the rule, not the exception.

In the following, options for reforming the Joint Implementation (JI) mechanism will be discussed as well as sectoral approaches among industrialized countries, with a view to facilitate peatland-related interventions.

3.2.1 Reformin JI (Option A-4)

We have discussed the existing JI regulatory framework for LULUCF projects in chapter 3 above. The current set of rules offers opportunities for LULUCF interventions – including for emission reduction and not only sequestration projects – and after years of lacklustre action, 2013 has seen the approval of the first forest-based emission reduction project (*Bikin Tiger*, Russian Federation).[175]

However, in the discussions on the reform of JI, LULUCF interventions have so far not played any noticeable role. This may be due to the fact that today's market shows a significant over-supply with both CDM and JI credits: The EU ETS remains the only significant source of demand worldwide with an overall demand for the years 2008-2020 of about 1.6-1.7 billion,[176] while supply from CDM and JI credits for the period until 31 December 2012 stood at roughly 1.8 billion and 800 million, respectively, together 2.6 billion.[177] These figures may reduce the appetite for widening the scope of JI project activities. Yet, as the recommendations for a reformed JI made by the Joint Implementation Supervisory Committee (JISC)[178] and others[179] focus on institutional and conceptual improvements of the mechanism, which may impact future (namely post-2020) demand, the question of LULUCF and, more particularly, peatland interventions as part of the mechanism deserves further attention.

175 For the period June 2009 and October 2012 some 520,000 Emission Reduction Units (ERUs) have been verified, see UNFCC, Joint Verification, http://ji.unfccc.int/UserManagement/FileStorage/AZS7KT85WOJNRE912PXC0LMHV3FBIQ.

176 The figures are a calculation on the basis of (i) the number of credits used in Phase 2 of the EU ETS (1.058 billion), cf. statement of the European Commission, Climate Action, International Carbon Market at http://ec.europa.eu/clima/policies/ets/linking/index_en.htm, and (ii) the international credit ceiling as per Commission Regulation (EU) No 1123/2013 of 8 November 2013 on determining international credit entitlements pursuant to Directive 2003/87/EC of the European Parliament and of the Council, OJ L 299/32 of 9 November 2013.

177 For CDM figures see the summary notice at the UNFCCC CDM website, at http://cdm.unfccc.int/Statistics/Public/CDMinsights/index.html; for JI figures see the Annual Report of the Joint Implementation Supervisory Committee to the CMP, 21 October 2013, FCCC/KP/CDM/2013/4, at http://unfccc.int/resource/docs/2013/cmp9/eng/04.pdf.

178 See text box on this page.

179 See the numerous interventions from the Joint Implementation Action Group (JIAG) at www.jiaggroup.com; Warnecke, C., 2012, Project-based mechanism for climate protection in Europe: Net-mitigation-effects and further development of the Joint Implementation (JI) Mechanism ; Alessi, M. / Fujiwara, N., 2011, Briefing Paper „JI Track 1 Preliminary Assessment", CEPS; Shishlov, I. / Bellassen, V. / Leguet, B., 2012, Joint Implementation: A Frontier Mechanism Within the Borders of an Emissions Cap, Climate Report.

Reforming Joint Implementation

The JISC proposes[180] a reform of JI along the following lines:

- Introduction of a unified JI track that allows for host Party implementation at the national level "under the international guidance and oversight of a governing body and under the authority of, and with accountability to, the CMP";
- Merging the accreditation process for third-party validators and verifiers under the CDM and JI;
- Allowing for a "streamlined demonstration of additionality" for JI projects;
- Require project support ("letter of approval") from the host country alone ('unilateral JI');
- Harmonize national approval procedures;
- Set aside credit reserves – possibly in a dedicated registry account of the JISC – when the project is 'registered' (i.e. the project design document has successfully undergone determination);
- Reform the fee structure to secure financial stability and sustainability of the JI institutional framework; and

(provisionally, with regard to the pending ratification and entry into force of the second commitment period)

- Advanced issuance of assigned amount units (AAUs) for the second commitment period in the order of 1% of a country's AAU quota for the first commitment period to allow for issuance of ERUs from JI interventions.

Furthermore, a number of Parties[181] have suggested that a future JI mechanism should strengthen the emission reduction output both through new and "innovative" methodological approaches and perhaps overall 'sectoral contributions' of the host countries. Crediting above/below any sectoral targets in the LULUCF sector has not been explicitly proposed, but the reasoning could be readily applied.

It is noted that that financial impact of 'stronger' JI credits is not yet determined. While the production costs are likely to be higher per unit, less supply may also increase demand and thus credit prices.

This is in stark contrast to the discussions on the future of the CDM, where strong emphasis is made on the option to widen the LULUCF activity scope and to overcome concerns of non-permanence by other means than the issuance of temporary credits.[182]

To improve the situation for LULUCF projects, in general, and peatland-related interventions, in particular, within JI, the following changes may be considered:

- ***Emission Reduction Interventions***: Clarify that LULUCF emission reduction projects are eligible intervention categories;
- ***Complete Peatland Portfolio***: Allow for the integration of all peatlands in the mechanism, regardless of whether a voluntary reporting category is concerned and whether a country has elected this category or not;

180 JISC, Annual Report 2013, see footnote 177; JISC, Annual Report of the Joint Implementation Supervisory Committee to the CMP, 21 October 2012; see also the background document prepared by the JISC: Report on Experience with the Verification Procedure under the Joint Implementation Supervisory Committee and Possible Improvements in the Future Operations of Joint Implementation, Report Annex 2, adopted at the JISC's 23rd meeting.

181 Cf. Submission by Ireland and the European Commission on behalf of the European Union and its Member States, of 18 February 2013, accessible via UNFCCC, 2013, Subsidiary Body for Implementation, 39th Session, http://unfccc.int/resource/docs/2013/sbi/eng/misc03.pdf.

182 See chapter 4.3.2.

- ***ERU Issuance***: Link the issuance of ERUs for LULUCF emission reductions (as opposed to LULUCF sequestration) to AAUs, not RMUs, a change that may be part of a broader alignment of LULUCF with non-LULUCF accounting rules (including streamlined net-net accounting);
- ***Permanence***: JI has so far not shared with the CDM the temporary credit approach (see the next chapter below) and negotiators should not transpose the CDM A/R discussion into JI, in particular not with respect to emission reduction activities, which have a distinct exposure to the permanence risk than sequestration activities (see box on this page). Aside from this debate, however, JI is implemented in a 'capped environment' and any carbon releases that may happen in the future (stock loss risk), will be accounted towards the cap at the time they occur. Whether or not the host country will want to delegate its related responsibility to the project operator that has been credited in a previous year, is a matter of *liability attribution*, but does not question that permanence is assured.
- ***Stock Loss Liability***: The question of *liability attribution* arises in case the project fails after the first ERUs have been issued. Note that the case for liability could not arise in a simple case of project cessation (and the return to the previous land-use): The emission reductions once achieved yield a permanent climate benefit (see figure 3b in the box above). The case for liability may arise in the stock loss scenario, however, that occurs as a consequence of e.g. a fire in which the entire peat stock of a project perishes. If the project developer caused the stock loss event (e.g. the developer staff set fire), the State Party may claim damages under public and private law (which could arguably extend to the country's 'carbon accounting liability'). Yet, to what extent could and should the project developer be held liable if the stock loss event was caused by an event entirely outside its control? The answer depends on whether the State Party concerned considers emission reductions in the LULUCF sector once achieved as permanent or not (see next chapter). If the answer is positive (permanent), then the stock loss event is a new, unrelated event; the project developer foregoes the opportunity of continued crediting, but otherwise does not assume responsibility. If the answer is negative (non-permanent), then the State Party could (i) claim credit compensation from the project developer, or (ii) require project developers to collateralize the related risks (along the model of a shared buffer introduced by the VCS, or other), or (iii) nationalize the risk and install a government-funded insurance system, or (iv) choose a mixed system. Note that for any case of stock loss (except the developer is liable for negligence or wilful intent), the liability would appropriately be capped at the number of credits issued and not include all stock emissions.
- ***Additionality***: The additionality test for peatland interventions does not present any particular problems except perhaps where a particular intervention collides with one of the – often rather generally phrased – restoration obligations, e.g. under the EU Habitat Directive for habitats with an unfavourable conservation status (…"*Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats*…").[183] In many such cases, EU Member States or any other public or private body subject to the obligation are left with wide discretion as to the nature of the intervention, the scope and the timing, so that the additionality of the concrete peatland intervention rarely is put in doubt. Where the particular intervention is specifically prescribed by the existing law, then it may still qualify as additional, if it can be shown that the existing laws are badly, or not all, enforced.[184]
- ***Project Categories and Methodologies:*** The VCS AFOLU class of projects may serve as an inspiration for JI peatland interventions. The VCS covers the entire spectrum of projects from peatland res-

183 Article 6 (2) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206, 22 July 1992, p. 7.

184 See the additionality test as defined under the CDM (CDM EB 39/10), which is also applicable for JI: "If an alternative does not comply with all mandatory applicable legislation and regulations, then show that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country. If this cannot be shown, then eliminate the alternative from further consideration…"

toration to conservation and links these activities to other categories such as reforestation and forest conservation. Typical examples for non-forested areas include the restoration of drained peatland by rewetting in combination with paludiculture[185] (which may include reforestation), or the avoided drainage in combination with the avoided conversion of grassland and shrubland. Typical examples for forested areas include the avoided drainage of peatland in combination with avoided deforestation. Avoided peat mining is as of yet not seen as a viable *project* category, as market leakage is expected to fully eradicate any climate benefit, unless a project mitigates this effect with alternative production methods of horticultural substrates (for example by sphagnum farming in paludiculture[186]).

The VCS is in the process of approving a GHG accounting methodology incorporating procedures for avoided deforestation on peatlands, as well as a peatland rewetting methodology developed for a German-funded project in Belarus based on methods that also underlie the MoorFutures programme[187]. The principles of accounting presented in these methodologies can be easily adopted in JI projects.

These changes can go hand in hand with other reforms such as strengthening the environmental integrity through adding multiplying crediting factors (e.g. 1 credit for the reduction of 2 tCO_2eq.) or setting sectoral (all-country) targets or benchmarks (on this see below 4.2).

Multiplying Factors: JI Country Example

New Zealand launched two domestic JI tenders under its Projects to Reduce Emissions (PRE) programme.[188] The first tender was launched in 2003, well before the Kyoto Protocol entered into force and well before the JISC drafted its JI guidelines.[189]

Under the first tender 15 projects were awarded, targeting emission reductions in the order of 3.7 million tCO_2eq up to 2012. The second tender was launched in 2004 and resulted in 26 projects targeting emission reductions at a pace of 6.0 million tCO_2eq up to 2012.

The core innovative element of the PRE programme was that it offered ERUs (or replacement AAUs) to project developers with projects offering the highest reduction in emissions in exchange for the least number of emission units requested.[190] As a result the first tender scored an average of 0.96 carbon credits per tonne of emission reduction achieved. In the second tender the New Zealand government strengthened this selection criteria even more, thus making it explicit that the higher the greening factor, the higher the chances to win the tender. The average score for the second tender turned out to be 0.85.[191]

However, the merits of the PRE programme are disputed. The New Zealand government discontinued it in 2005 citing additionality concerns.[192] The tendering process may have ultimately created a price race to the bottom, which the environmentally more robust projects may have lost.

185 On the concept of paludiculture see below chapter 3.4.5.

186 http://paludiculture.uni-greifswald.de/en/projekte/sphagnumfarming/

187 http://www.moorfutures.de/en

188 More information on the PRE programme can be found at: http://www.mfe.govt.nz/issues/climate/policies-initiatives/projects.

189 Freestone, D. / Streck, Ch., 2005, Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work, Oxford, Hoogzaad, Chapter 8 JI A mechanism with a bright future, p. 181.

190 Hodgson, P., 2004, New Zealand - Dutch emissions trading agreement signed (23 August, 2004) article available at the official web-site of the New Zealand government: http://www.beehive.govt.nz/node/20700.

191 Climate Focus, Domestic Offset Projects in Denmark: An Assessment of JI Host Country Experiences (2010), at http://climatefocus.com/downloads/Denmark%20JI%20Country%20Assessment%20v2.0%2013Dec10.pdf.

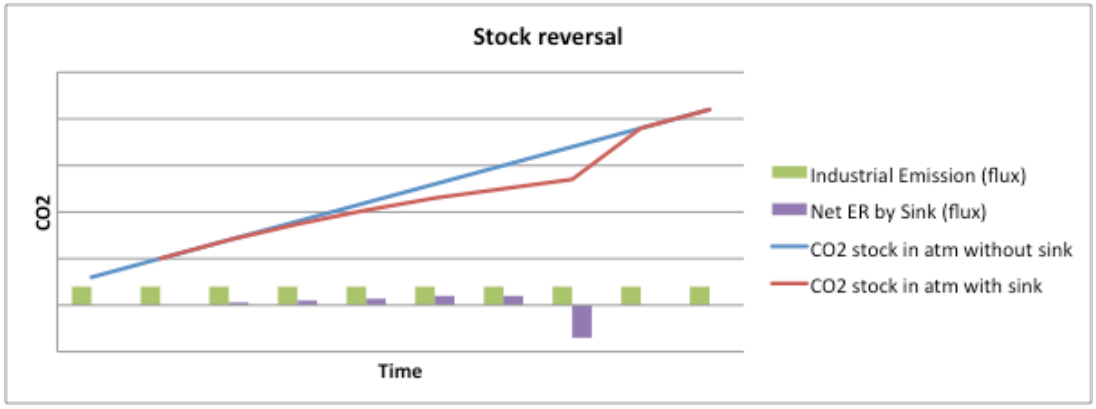
192 See footnote 191.

3.2.2 Crediting of LULUCF Emission Reductions and Permanence

For years one of the most contentious points discussed in the area of emissions trading and LULUCF has been the issue of permanence. The risk of non-permanence, goes the argument, makes LULUCF unfit for carbon crediting and trading, whether JI, CDM or any other.

In various projects it is clear that an emission reduction cannot be reversed. Methane from a waste dump, that is captured and burned, cannot be turned back into methane and consequently the realized emission reductions are permanent. In contrast, the sequestration of carbon dioxide in ecosystems can be reversed. ***Carbon sequestration*** by afforestation or reforestation can be made undone deliberately (through land use change or wood harvest) or unintentionally (by wildfires or other calamities), so that the carbon stored in the forest is emitted again into the atmosphere and the carbon credits issued are annihilated (see figure 3a).

Figure 10: Stock reversal



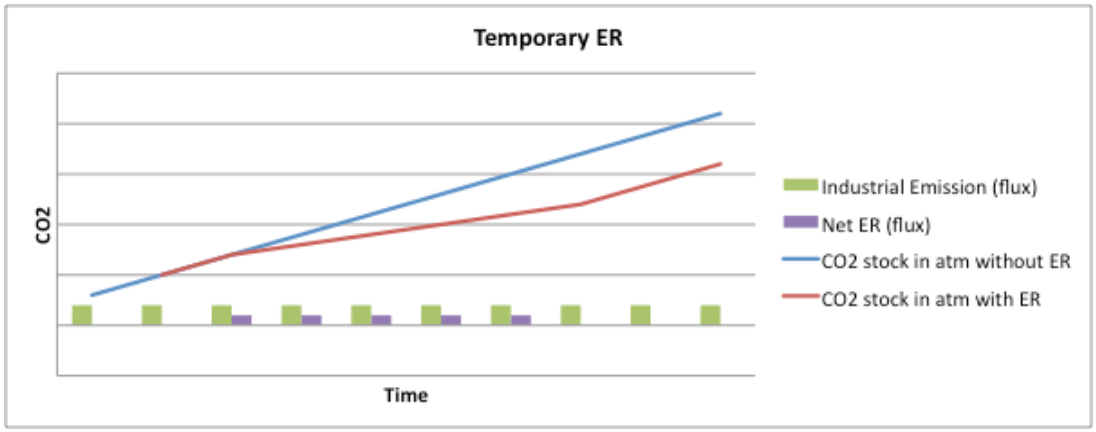
In a sink project (e.g. afforestation), CO_2 is sequestered from the atmosphere and stored as carbon in the growing wood biomass. Consequently, the CO_2 concentration in the atmosphere is reduced. If after or during the project the wood is felled (and the wood is not used in durable products), the stored carbon is again released as CO_2 and the atmospheric CO_2 concentration is no longer reduced in comparison to the reference. In a sink project, reversal thus leads to a return to the original (projected) atmospheric CO_2 concentrations.

The situation is distinct in the case of ***land-use based emission reduction*** activities – peatland rewetting, REDD+ or other – where a stop of the emission reduction activity does not lead to an annihilation (reversal) of the positive climate effect (Figure 3b). When, after a number of years, a rewetted peatland is newly drained or deforestation proceeds at the former rate, the CO_2 concentration in the atmosphere remains permanently reduced compared to the situation without project. In contrast to sink projects, emission reductions in AFOLU projects do not – similar to energy projects – have a *reversal* problem. A wide range of policy analysis suffers from the ill-understood conceptual difference between sink/sequestration activities and emission reduction activities. The European Commission Impact Assessment on Deforestation[193] treats "LULUCF activities" and "LULUCF sequestration activities" synonymous, and fails to acknowledge the diversity of LULUCF projects that both include carbon sequestration and emission reduction activities. This is also illustrated by use of term 'sink' and 'carbon sink' for both carbon removals as well as for reduced emissions.[194]

193 Impact Assessment, Commission Staff Working Document, accompanying document to the Communication from the Commission to the European Parliament et al. addressing the challenges of deforestation and forest degradation to tackle climate change and biodiversity loss, COM(2008) 645; SEC(2008) 2619/2).

194 Hirsbrunner, S. / Tänzler, D. / Reuster, L., 2011, Important aspects of sinks for linking emission trading systems, Umweltbundesamt Berlin, pp. 5/6.

Figure 11: Temporary ER



In an avoidance project (e.g. peatland rewetting, REDD+) less CO_2 is emitted into the atmosphere. When after the project intervention the peatland is drained again or the forest anyhow cut, the annual emissions return to the old (reference) level, but in comparison to the reference scenario the CO_2 concentration remains permanently lower. In an avoidance project a reversal thus does not *lead to a loss of the achieved reduction.*

Proponents of the LULUCF-permanence argument respond that strictly speaking, a stock loss event is not a *reversal* of a previously *credited* sequestration act, but a new (unrelated) incident of emissions, which does not nullify emission reductions achieved in the past. The same line of thinking, they argue, indeed would be behind the classification of permanent emission reductions in many intervention types in the energy-driven sectors: Emission reductions generated by an installation through the integration of certain energy efficiency measures to reduce the carbon output are deemed final and permanent, even if subsequently said measures are undone and the installation runs at the efficiency levels as before (or worse ones). Stock loss itself, they continue, is not a scenario solely confined to land-based emissions. The International Energy Agency continuously updates the figures on stock availability in size and time for the different types of fossil fuels.[195] Opponents retort that the analogy to renewable energy or energy-efficiency projects would be flawed, as these projects would yield a real and *permanent effect*, i.e. the generation of electricity, heat, industrial process etc. – something, they argue, that cannot be nullified through any future event. This would be different from emission reduction projects dealing with LULUCF conservation or restoration, which would yield no lasting, permanent effect. One may question, however, if the effect of a measure (e.g. energy usage) matters in a system that accounts for emissions in absolute terms (not emissions relative to energy, GDP or other output).

It is not the purpose of this study to side with proponents or opponents of the permanence argument. Rather, within our assessment of policy options we treat the matter of permanence as contentious and seek to highlight those option scenarios that have the capacity to contain the debate. In some cases, where necessary, we will provide alternatives for either assumption ((i) emission reductions deemed permanent, and (ii) emission reductions not deemed permanent). It is noteworthy, in this context, that from a policy perspective the 'permanence issue' is ultimately less relevant than often thought: In environments subject to quantified emission limitation and reduction obligations ("capped environments") – such as JI, for instance – any permanence risk (perceived or real) is neutralized through year-to-year accounting (a stock loss will account as a debit in any future year).[196] In REDD as much as in peatland conservation and restoration, the stock loss risk is an important consideration at the project level; but seen from a sub-national or national perspective, the risk decreases rapidly.[197] The probability that the Amazon in its entirety falls prey to flames is near zero, while

[195] International Energy Agency (IEA), World Energy Outlook (yearly publication).

[196] Cf. Estrada, M / Lee, D. / Murray, B. / O'Sullivan, R. / Penman, J. / Streck, C., Land Use in a Future Climate Agreement: "If national inventories, including land-use emissions and removals, are complete and continuous over time, as expected in the case of economy-wide targets, reversals do not introduce any special accounting problems other than the possdibility of future adjustments for previously excluded natural disturbances."

[197] See on this correlation Myers.

local stock loss events will be absorbed by subnational or national trends. The limited practical importance may explain why the permanence discourse no longer receives the level of attention by policy makers than it used to. The only UNFCCC negotiation forum, which discusses the matter at the moment, not surprisingly concerns a project-level approach, a SBSTA work programme related to the CDM. Notably, at this forum, as witnessed by the authors during the SBSTA negotiations of June 2014, the differentiation of LULUCF activities in sequestration and avoidance is gaining attention.

3.2.3 Sectoral Mechanism for Peatland Interventions in Industrialized Countries (Option A-5)

Sector-wide interventions hold a number of opportunities:[198] In transcending project-based interventions and targeting economies of scale, they prepare substantial mitigation effects, while reducing transaction costs and the risk of leakage. For a range of economic sectors, sectoral and cross-country interventions also help address unwanted effects of distorted competition. Distortion may occur where different rules apply to market participants, which are in direct competition, e.g. aluminium producers in China and those in the EU. CO_2 sector benchmarks across borders guarantee that the same, or similar, rules apply to all competitors.

Sectoral approaches in the LULUCF sector have less to do with market competition; yet considerations of economies of scale and leakage still apply.

A sectoral approach for peatlands could be based on country-wide peatland restoration and peatland protection targets, in combination with a set of implementing measures, e.g. table 5.

Table 5: Sectoral Approach for Peatlands

Target	• [100%][199] protection of undisturbed peatlands • Rewetting of […][200] hectares of peatlands per annum *Alternatively:* • Rewetting of peatlands and increase of water tables to generate net emission reductions in the order of xy tCO2
Measures	Measures: • Installation of a robust nature protection regime • Trading/Crediting at the country and the operator (farmers, peat extraction operators, other) level is a likely element; • Compliance may be implemented: o Option I: Compliance and trading capacity for governments; o Option II: Compliance and trading capac-

198 See Fujiwara, N. / Egenhofer, Ch., 2008, Global Sectoral Industry Approaches to Climate Change: The Way Forward, CEPS; Center for Clean Air Policy, 2010, Global Sectoral Study: Final Report, http://ec.europa.eu/enterprise/policies/sustainable-business/climate-change/sectoral-approaches/files/global_sectoral_study_final_report_en.pdf.

199 Quota variable per participating country.

200 Quota variable per participating country. Alignment with e.g. Aichi Target 15 set under the Convention on Biological Diversity (CBD) aiming at the "restoration of at least 15 per cent of degraded ecosystems" by 2020, http://www.cbd.int/sp/targets/.

	ity for (certain) land owners or land users (operators); • The sectoral scheme may allow for multiplying factors – e.g. double or triple accounting for emissions following disturbance of undrained peatlands, on the one hand, and double or triple crediting for specific types or intervention – and it should come with a threshold substantially above business-as-usual; • Action plan for organic soil treatment (with incentives to switch to paludiculture, land-swop offers, low-carbon best practice guidance, and other); • Public land-purchase plans.
Institutional Framework	• Integration in JI mechanism and its carbon cycle (determination, supervision, potentially credit issuance) possible

Sectoral implementation would not be without challenges, in particular where the sectoral regime entails carbon trading or carbon crediting elements. Measurement, reporting, verification (MRV) will almost certainly be cumbersome – judging from the experience with MRV systems in REDD and the emerging MRV framework for peatland interventions under voluntary standards (see 2.1.7 above). Furthermore, as LULUCF may lead to substantial inter-annual variations in emissions and removals (even outside any force majeure events), meeting (linear) compliance trajectories may not be feasible or, indeed, appropriate.[201] Then, with a view to the expected merits of sectoral interventions: In some countries the risk of leakage is likely to be small. In Germany, for instance, undisturbed peatlands are rare and mostly specifically protected, and the level of degradation for disturbed peat environments elsewhere is mostly high.

Yet, in other countries, the pressure on pristine or little disturbed peatlands from construction (buildings, infrastructure), peat extraction, and expanding agricultural land-use is considerable, and therefore leakage would present an acute risk. Sectoral, i.e. cross-country interventions, therefore, albeit challenging, seem appropriate climate mitigation tools.

Apart from the complex data and MRV situation for country-wide coverage, the level of sectoral intervention – governments to governments only or the inclusion of private entities – would need to be clarified. Owners and users of organic soils could be directly involved. In a crediting scenario, such involvement can follow the example of private involvement under the CDM and JI.

In a compliance and emissions trading scenario, however, direct involvement of owners and/or users (operators) appears more difficult. There have been a number of studies, in recent years, which have examined the potential for emissions trading in the agriculture, forestry and land-use (AFOLU) sectors among economic actors.[202] The studies have focused on national or regional trading schemes; yet sectoral trading may as well occur at the international level and potentially under the JI system, if there is a continuation of the mechanism in the 2015 agreement.

Kuikman et al. estimate that in the EU alone there are 2.8 million discrete forest areas and 14 million agricultural holdings. AFOLU sector concentration is far less widespread than in the classic industrial sectors covered by an emissions trading scheme (power production, energy-intensive industries, aviation, etc.). The definition of a meaningful and viable list of participating actors and their management, thus, are not a given.

201 Kuikman; Lünengürger, B. / Benndorf, A. / Börner, M. / Burger, A. / Ginzky, H. / Ohl, C. / Osiek, D. / Schulz, D. / Strogies, M., 2013, Klimaschutz um Emissionshandel in der Landwirtschaft, Umweltbundesamt Berlin.

202 Ibidem.

The example of New Zealand (see chapter 2.1.6) nonetheless shows that the installation of cap-and-trade and compliance regimes for LULUCF related activities is doable. Note, however, that the New Zealand scheme covers forest holders alone; the 'holders' of peatlands is certainly an economically more diverse group.

By contrast, a sectoral peatland approach at the Government level – similar to the Effort Sharing Decision in the European Union (see below chapter 3.4.2) – retains a range of institutional and MRV related challenges. Yet in any case, the level of detail and control would be similar to what countries will already need to produce under an enhanced accounting framework (see above 3.1.1), and the sectoral dimension would go well together with the option to install a separate accounting framework as specified in section 3.3 above.

3.3 International Horizontal Opportunities of Liniking (Option A-6)

The emergence of numerous regional, national and supranational trading schemes brings in focus the question of linkage, fungibility of trading units, and enhanced mitigation opportunities from economies of scale and the overall market improvement in terms of liquidity and cost-efficiency. In the following we will first explain the concept of linking and its underlying rational in general (5.1), before we discuss options and challenges for linking in the field of LULUCF-based units (5.2).

3.3.1 The Concept of Linking

Linking[203] describes the method how different emissions trading schemes are horizontally connected by allowing emission units from one scheme to be traded into and used for compliance in the other system. An early example of linking was provided by the EU "Linking Directive"[204], under which the EU legislators allowed certain types and certain numbers of units from the Kyoto Protocol to be transferred, and used for compliance, in the EU ETS. The Linking Directive was based on the rational that the linkage "will increase the diversity of low-cost compliance options within the Community scheme leading to a reduction of overall costs of compliance… while improving the liquidity of the [EU] market in greenhouse gas emission allowances".[205]

Linking can come in many different forms limiting the type of units and/or the amounts, restricting the 'fungibility', i.e. the exchangeability of one unit with another, and/or incorporating access or compliance filters. However, there are two broad linking concepts, namely direct linking and indirect linking.

- Direct linking: Trading units issued in one system can be traded into and used for compliance in another system, and vice versa (two-way trading).
- Indirect linking: Linking is limited to a certain type of tradable units, usually credits or offsets, which are generated in one system and accepted, under certain condition and potentially after going through an exchange desk or a clearing house, into another system (one-way-trading).

The economic consideration is simple: An increase in supply and, in the direct linking option, demand enhances the market liquidity. It lowers mitigation costs in the system, which has either the higher abatement costs or the higher abatement target (so that units are scarcer and more expensive), while stipulating additional investment (and technology transfer) in the system with the lower abatement costs. Furthermore, the pooling of trading schemes promises a decrease in transaction costs, as the infrastructure can be harmonized (e.g. the registry, auction platforms), knowledge easily spread, and technology shared. The long-term perspective is the linkage of a multitude of systems across the globe to merge into a universal scheme that enjoys ideal market situation of liquidity and cost-efficiency.

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[203] For the concept see Baron, R. / Bygrave, S., 2002, Towards International Emissions Trading: Design Implications for Linkages, OECD; Ellis, J. / Tirpak, D., 2006, Linking GHG Emission Trading Schemes and Markets, OECD.; Tuerk, A. et al., 2009, Linking Emissions Trading Schemes, Climate Strategies; Umweltbundesamt / Deutsche Emmissionshandelsstelle, Linking verschiedener Emissionshandelssysteme – Stand und Perspektiven, 2013, Berlin.

[204] Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms, OJ L338/18 of 13 November 2004.

[205] Ibidem, recital No 3.

An early example of linking, as mentioned, was presented with the EU Linking Directive: CDM and JI credits were allowed into the EU ETS (indirect linking/one-way trading). More recent examples for (two-way-) linking are provided by the California-Quebec Initiative and the envisaged integration of the EU ETS and the Swiss emissions trading scheme.[206] The envisaged linkage between the EU ETS and the Australian emissions trading scheme has become mute, after the Australian government decided to drop its domestic scheme (see above chapter 2.1.6)

Linking is technically complex,[207] and the effects can be negative, if the systems do not sufficiently resemble each other in structure and, importantly, environmental rigour. The following aspects have been found to be of high relevance:[208]

- System reliability ("a tonne is a tonne"): Undistorted linkage requires that both systems strictly rely on the rule that emissions and, where applicable, sinks are adequately measured and translated into tradable units essentially in accordance with the same rules, while enforcement (and the consistent application of sanctions) is secured;
- Equivalence in ambition: In the case of direct linking, both systems require an *a priori* level of market scarcity (and thus an *a priori* incentive for trading) in order to avoid market flooding and market redundancies ("hot air"); systems with absolute caps and which are comparable in ambition, are the most obvious candidates for linking;
- Correspondence ("compatibility")[209] in allocation/issuance, registry operations, security, trading and compliance: While each system may retain its own rules regarding a wide range of elements (including grandfathering/benchmarking, registry access, registry protection, legal nature of allowances, liabilities, etc.) a number of key characteristics must be identical, or present sufficient similarities, to allow for linking. Industry sectors and individual compliance buyers need to find similar burden / cost levels, in order not to distort competition; units must be tradable among (eligible) market participants; a similar trading infrastructure (at least in so far as registries are concerned, but possibly also regarding pre- and post-trade infrastructures) is necessary; compliance cycles and provisions on borrowing and banking need not be identical, but supply and demand flows have effects on the other system, which may need to react in specific ways;
- Mutually acceptable approach to offset mechanisms: Any offset mechanisms allowed from one system into the other, or mutually recognized, requires that
    - stringent, transparent and robust rules and methodologies be applied, supervised and enforced, including to avoid direct and indirect double-counting; and
    - fixed offset levels allowed in one system be taken into account when assessing the level of ambition to contain market flooding and secure system stability.

Notably, equivalence in industry and sector coverage is not central to the ratio and success of linking, with the possible exception of offset units, as these are linked to their origin (a particular emission reduction activity or a particular sequestration activity), while trading units are not,[210] and the receiving system therefore

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206 The EU/Swiss merger is one between a large scheme (coverage of roughly 12,000 installation and 2 billion tCO2 annually, for the EU) and a (very) small one (coverage of some 50 installations with annual emissions of 6 million tCO2, for Switzerland).

207 The EU-Swiss negotiations have been ongoing for the past 4 years, and a completion is not in sight, see Schweizerische Eidgenossenschaft, Federal Office for the Environment FEON, Topic Emission Trading, Linking the Swiss and EU emissions trading schemes: the negotiation process, http://www.bafu.admin.ch/emissionshandel/10923/10926/index.html?lang=en.

208 Cf. DEHSt.

209 For a compatibility exercise see, for instance, the consultation papers issued by the Australian government and the European Commission, at Australian Government, Department of the Environment, Biodiversity Fund, Frequently Asked Questions, http://www.environment.gov.au/cleanenergyfuture/biodiversity-fund/faqs.html; the process has been abandoned since for political, not technical reasons.

210 This depends on the perspective, however. It may be argued, for instance, that grandfathered allowances are issued for a particular activity and share, in that sense, with offset credits the particular 'legacy effect'.

indirectly extends its sector coverage. The consequence is that for each offset category, and each offset generation process, environmental stringency and system compatibility need to be assessed by both the offset generating and the offset receiving scheme. Arguably, this holds in particular for LULUCF-based credits, for which the European Union so far has flatly denied system compatibility. In the Linking Directive, it clarified that "all CERs and ERUs… may be used… except for CERs and ERUs from land use, land use change and forestry activities" (Article 3 (b)).

3.3.1.1 Linking LULUCF and Peat-Related Emissions

When assessing the linking potential of two LULUCF based emission trading systems, two basic scenarios should be distinguished:

- Both systems ("ETS A" and "ETS B") recognize certain LULUCF-based activities for direct trading and direct linking;
- ETS A excludes LULUCF-based activities from its internal trading environment; ETS B incorporates LULUCF-based activities directly (trading) or indirectly (crediting);

The first constellation resembles the classic linking situation without anomalies. As long as both systems are synchronized in terms of system reliability, cap ambitions and process (see above section 5.1), the fact that there may not be a complete overlap of activities and emissions or sink sources is of little relevance. Linking should produce enhanced market liquidity, lower average abatement costs, and lower transaction costs, without incurring any fundamental disruptions concerning the system reliability, competition, or environmental integrity.

The second constellation is distinct, arguably less in the situation in which ETS B covers certain LULUCF-based activities directly (e.g. New Zealand), but more so in the situation where ETS B allows for (non-capped amount of) crediting (e.g. Joint Implementation). Linking in this case holds both opportunities and challenges. In this constellation, it is worth identifying the reasons why ETS A does exclude LULUCF-based activities in the first place. It may be that the sources of emissions/sinks are too numerous and small to justify the transaction costs inherent in an ETS; it may be that the land-use sector plays no major role in a country's or jurisdiction's emissions portfolio (e.g. city states) or, more specifically with respect to peatlands, that the country or jurisdiction does not have any significant emissions sources of that type. In both situations, linking should yield benefits, while not causing any major disruptions, as long as stringent carbon cycle rules apply, and offset levels are fixed to contain flooding and secure system stability (see above section 5.1).

The situation is more critical, when ETS A rejects LULUCF-based units on substance, in particular with a view to (i) non-permanence and (ii) structurally weak MRV-ability. The EU, when explaining the exclusion of LULUCF-based credits from its system, argued that "LULUCF projects cannot deliver permanent emissions reductions" (see text box on this page) and that "whereas emissions reductions in industry can be quantified by precise measured input and output values, this is not the case for LULUCF activities".[211] The dismissive assessment chimes with the fact that LULUCF (offset) units are regularly a sticking point for linking negotiations between the EU and potential linking partners.[212]

211 Impact Assessment, Commission Staff Working Document, accompanying document to the proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the EU greenhouse gas emission allowance trading scheme (COM(2008) 16 final)(SEC(2008)53), 23/1/2008.

212 See on the scoping attempts by the EU and California: Zetterberg, L., 2012, Linking the Emissions Trading Systems in EU and California, Swedish Environmental Research Institute; for the EU/Australia linking assessment see FAQ European Commission of 28 August 2012 (MEMO 12/631), at http://europa.eu/rapid/press-release_MEMO-12-631_en.htm, which notes that "the role of land-based domestic offsets from Australia's Carbon Farming Initiative in the linked system" needs further consideration.

EU ETS and LULUCF

In the Impact Assessment[213] that accompanied the European Commission's proposal for a review and amendment of the EU ETS Directive, the Commission evaluated three potential ways of including forest emissions and removals into the EU ETS:

- Option 1 (international forest option): Allowing the use of credits (and debits) from LULUCF CDM and JI project activities in to the ETS.
- Option 2 (domestic offset option): Providing for domestic offsetting projects from LULUCF activities.
- Option 3 (domestic forest option): Including the EU's domestic LULUCF sector (forestry, agriculture etc.) in the ETS.

The Commission dismissed all three options mainly for reasons of environmental integrity. It considered the "*risks related to the temporary and reversible nature of LULUCF activities in a company-based trading system*" as highly risky and potentially unmanageable. More importantly, the Commission claimed that "*LULUCF projects cannot physically deliver permanent emissions reductions*" and that "*applying these in a company-based trading system would impose great liability risks on Member States and is contrary to the intentions of the EU ETS to steer the EU towards a low-carbon economy*." Finally, the Commission's position was informed by the desire to protect the functional integrity of the EU ETS by keeping it transparent and simple, and by avoiding a "*sheer quantity of potential credits entering the EU ETS*" that would undermine the functioning of the EU ETS.

The Impact Assessment on Deforestation,[214] furthermore, raised market considerations and rejected the notion of linking REDD+ credits to the EU ETS mentioning that the EU would either face the risk of oversupply ('flooding') of cheap credits diminishing benefits of innovation, energy security and clean air or, as a consequence of strict quota set by the EU ETS, the risk of unwanted windfall profits for the few credits that would enter the market (at prices close to allowance prices) with the vast majority of potential REDD+ credits staying outside the EU ETS. This problematic situation, the Impact Assessment held, could only be overcome if large-scale demand from other trading schemes would emerge.

The level of incompatibility in these situations can be lowered, if not removed, through a number of safeguards, including government-backed guarantees (established through credit reserves or buffer pools) to reconfirm the permanence of LULUCF-based credit units. It is also of interest, in this context, that the question of robust MRV, the level of precision and issues related to additionality and leakage[215] – long raised as impeding reliable crediting and real emission reduction achievements – have increasingly been addressed not least by voluntary standards, especially the VCS, and a number of REDD+ programs. On this basis, it is argued that one-way linking of peatland-based credits (and broader: credits based on LULUCF emission reduction activities) should not cause a material conflict and not compromise the environmental integrity of either scheme, as long as the respective carbon cycle is robust and credit levels are fixed. The resistance to absorb peatland based credits appears to be due to political rather than environmental or economic reasons, as economic operators in the receiving ETS would question the decision of policy makers to exclude LULUCF-based units directly, while backing them indirectly.

213 Impact Assessment, Commission Staff Working Document, accompanying document to the proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the EU greenhouse gas emission allowance trading scheme (COM(2008) 16 final)(SEC(2008)53), 23/1/2008.

214 Impact Assessment, Commission Staff Working Document, accompanying document to the Communication from the Commission to the European Parliament et al. addressing the challenges of deforestation and forest degradation to tackle climate change and biodiversity loss, COM(2008) 645; SEC(2008) 2619/2).

215 These were also raised in the Impact Assessment, op. cit., pp. 56 et seqq.

3.4 Options to Address Peatland Interventions within the EU (Option A-7 to A-10)

The EU has so far been reluctant to integrate LULUCF related activities in its trading environments, i.e. the EU ETS and the Effort Sharing Decision (ESD). The adoption of the EU LULUCF Accounting Decision (see above section 3) is part of the larger exercise prescribed by law – the ESD Decision, Article 9 – to "assess modalities for the inclusion of emissions and removals from activities related to land use, land use change and forestry in the Community reduction commitment"[216] and to serve as a "first step" towards that goal by setting out the relevant accounting rules. Numerous obstacles remain, however, and it has been left conspicuously open whether the trajectory is the "inclusion" in one of the two of the Union's trading schemes or whether the sector should specifically be addressed as part of the bloc's overall reduction commitment. At the same time, the inclusion in the trading schemes is not the only carbon market option that presents itself at the EU regulatory and at the EU Member State level. The creation of a separate trading and compliance regime, the establishment of a peatland offsetting mechanism feeding a diversity of EU policy instruments, the earmarking of emission trading proceeds for peatland interventions accounted for in tonnes of CO_2, and individual options at Member State level recommend themselves for consideration. In March 2015, the European Commission launched two public consultations in parallel, one on the improvement of the ESD framework for the period 2020 to 2030, the other on the integration of agriculture, forestry and other land use into the 2030 climate and energy framework at large. Under that framework,[217] the EU commits to at least 40% cuts in EU greenhouse gas emissions from 1990 levels alongside targets for renewable energy and energy efficiency. The commitment translates into a specific ESD target of 30%[218] below 2005 below and nods to "existing flexibitlity instruments", which are to be "significantly enhanced".[219] Neither the European Commission nor the European Council specified whether they envisage comprehensive coverage of LULUCF-wide emissions for accounting or flexibility instruments. The European Council noted, however, that "the multiple objectives of the agriculture and land use sector, with their lower mitigation potential, should be ackwnoledged, as well as the need to ensure conherence between the EU's food security and climate change objectives". The body refers, in particular, to afforestation options and foresees to address the issue of LULUCF specifically "in any case before" 2020.[220]

In the following, we will first outline the procedural options for the inclusion of peatland-related interventions in the EU ETS (6.1) and the ESD (6.2), before discussing the 'separate market' option (6.3), the 'cross market' option (6.4), the market revenue option (6.5) and lastly market options at the Member State level (6.6).

3.4.1 Integration of Peat-Interventions in the EU ETS (Option A-7)

Sector and GHG coverage by the EU ETS have expanded over time, and the EU ETS is designed to make the election of additional sectors and gases fairly simple. In fact, the European Court of Justice in *Arcelor*[221] confirmed that the legislator has the obligation – which flows from the principals of equal treatment and due process – to review the list of coverage "at reasonable intervals" as well as the criteria used for election "based on the technical and scientific information available".

The EU ETS Directive also provides procedures for the unilateral (i.e. Member State level) inclusion of additional activities and gases (Article 24 EU ETS), provided this is approved by the Commission (subject to

216 Decision 406/2009/EC, Article 9. For a similar working see Decision 529/2013/EU ("EU LULUCF Accounting Decision"), recital 3.

217 See European Commisison, A policy framework for climate and energy in the period from 2020 to 2030, Communcation, COM(2014) 15 final; European Council Conclusions of 23/24 October 2014, EUCO 169/14.

218 European Council Conclusions of 23/24 October 2014, EUCO 169/14, paragraph 2.1.

219 Ibid., paragraph 2.12.

220 Ibid., paragraph 2.14.

221 ECJ Case T-16/04: Arcelor SA vs. European Parliament and Council of the European Union, Judgment of the General Court of 2 March 2010.

comitology proceedings), and for the introduction of harmonized rules (for adoption by the Commission) on issuing allowances or credits for emission reduction projects (Article 24 a EU ETS).

Peatland related activities, thus, could be integrated in the EU ETS on three levels, (i) via a sector covered directly by the trading and compliance scheme, (ii) via an activity covered unilaterally by a Member State requesting inclusion under Article 24 EU ETS, and (iii) as part of a harmonized project mechanism established under Article 24 a EU ETS.

Option 1: Direct Coverage

In the above quoted Impact Assessment of 2008, the European Commission made a firm argument against the integration of LULUCF in the EU ETS citing non-permanence ("changes in carbon capture"), liability issues (who is liable in case of "calamities like pest outbreaks or fires"?), and "uncertainties with respect to monitoring and verification". In the external assessment report222 commissioned by the European Commission in response to its obligations under Articles 8 and 9 ESD, the authors equally reject the option of direct coverage through the EU ETS, favouring the creation of a "separate policy framework".

Unfortunately, the report did not pay particular attention to peatlands and their mitigation potential. Instead, it placed most emphasis on afforestation and forest management. Maybe as a result, little thought has been given to the question how direct coverage under the EU ETS could be implemented in detail. Other than particularities on MRV, coverage would require the identification of the target group and the modalities of coverage. It should be noted that the installation-based approach (Article 4 EU ETS Directive) may not accurately mirror the emissions profile of land-based activities. Indeed, it would stretch the legal imagination to define a "peat installation" in a meaningful way and to allocate accurately the peat source to a distinct (single) "peat operator". The point of departure for peatland related activities, by contrast, would appear to be overall commercial land operations, from a particular (threshold) size, by a particular stakeholder, farmer, peat extraction operator, construction firm, or other. One could, for instance, define coverage in terms of 'land use of […] hectares or above', using an economic perspective of land-management, in order to avoid legal parcelling to escape the threshold. Then, for reasons of equal treatment, scientific accuracy and in order to apply a holistic land-based approach top-down to the operator, it would seem that all land-related activities would have to be accounted for, not just peatland emissions (or emissions from organic soils), and including sequestration activities. Such broad coverage, then, would entail permanence-issues, which however, may be dealt with through a specific reserve fund.

Yet, direct ETS integration would not be without difficulties.223 Overall coverage would still be massive. A threshold of 100 hectares, for Germany alone, would still bring 30,000 farm holders into the scope (forest owners not included); a threshold of 500 hectares, would reduce that number to roughly 3,000 (again, for Germany alone). This contrasts sharply with the modest number of 12,000 installations covered by the EU ETS as a whole (to date). In addition, setting the threshold with a view to achieving 'manageable' numbers of participants seems somewhat arbitrary from an environmental point of view. With respect to peatlands, in particular, it seems prima facie irrelevant whether the area concerned is part of a super-agricultural complex of whether it belongs to a mid-size farming operation just below the threshold. In fact, there is only feeble congruence between the size of the operation and the carbon output (peat-dense small areas may have large emissions, and vice versa) – quite different from industrial installations. Similarly, benchmarking may work for some activities such as crop choices and ploughing techniques, but carbon soil fluxes may be less accessible in this respect. It should also be noted that the carbon emissions from drained peatlands may be overall stable, but changing water levels lead to multi-annual carbon cycle flows,224 which would be hard to align to yearly compliance cycles. Direct ETS coverage may, therefore, be perceived as inefficient and arbitrary.

222 Kuikman.

223 See also the discussion in Lünenbürger et. al, pp. 13 et seqq.

224 A similar observation can be made for other sectors and installations, however, e.g. hydro-electricity plants. Here, the carbon cycle flow is usually not seen as a problem.

Option 2: Member State ETS Coverage

Article 24 EU ETS Directive allows for ETS extension at the Member State level, a procedure that has been used in the past. Netherlands – later followed by Austria, Italy, Norway and the UK – asked permission to include N_2O emissions from nitric acid production plants into the scheme, and permission was granted. For the third trading period, the ETS extension applies to all EU ETS countries.

A Member State could similarly propose the inclusion of the peat- or land sector in the ETS. However, any inclusion must take into account, among others, the "effects on the internal market" and "potential distortion of competition". It is important to note in this context that the agricultural sector is subject to the rules of the common agricultural policy (CAP), and that any partial inclusion of the sector in the EU ETS might raise concerns for the EU-wide market. Furthermore, the obstacles referred to above under *Option 1* above would apply *mutatis mutandis* to this option.

Option 3: Project-Based Activities (Aritcle 24a)

The difficulties may be contained, however, in the alternative of a project-based mechanism on peatlands. Such a mechanism could focus on peatland restoration and conservation excluding the more problematic field of sequestration activities.

Article 24a EU ETS

The new Article 24a EU ETS, introduced with the EU ETS revision of 2009, provides the legislative basis for an autonomous EU offsetting mechanism under both the EU ETS and ESD frameworks. Article 24a (1) reads:

[I]mplementing measures for issuing allowances or credits in respect of projects administered by Member States that reduce greenhouse gas emissions not covered by the Community scheme [to] be adopted.[225]

Article 24a is the subsidiary provision to Article 24 (see above). As such, measures under Article 24a "shall only be adopted where inclusion is not possible in accordance with Article 24".[226]

It has been argued[227] that as a distinct European offsetting instrument with a clearly defined relationship to the existing European framework and a design open to alignment with key European policy priorities, an offsetting mechanism under Article 24a could emerge as a stronger and environmentally more robust instrument than JI has proved in the past. This concerns, first of all, the regulatory conditionality of JI, for which the asset generation (ERUs) is dependent on the successful ratification of the Kyoto Protocol revision regarding the second commitment period by ¾ of Kyoto Protocol Parties. Yet, it has a material dimension, not least regarding the question of double-counting. While allowances or credits generated under an Article 24a mechanism can only take place with respect to emissions "not covered by the Community scheme" (concerning the EU ETS) or will be discounted from the country quotas outside the scheme (concerning the ESD), respectively, the situation for JI within the EU context is little clear.[228] Note that the ESD makes clear that the discounting mechanism applies only "in respect of emission reductions in a Member State covered by this Decision" (Article 10 (b) ESD). That means, the fact that LULUCF emissions are excluded from ESD coverage does not question the eligibility of the sector for interventions under Article 24 a EU ETS.

Article 24 a EU ETS does not depend on the Kyoto (or post-Kyoto) framework to come into the exis-

[225] EU ETS Directive, Article 24a (1).

[226] Ibid.

[227] v. Unger, M., 2012, Project Mechanisms in Europe. An Overview of Policy Options for After 2012, CDC Climat and Climate Focus.; see also the background text, with the same title, by Conway, D. / v. Unger, M., 2010, Project Mechanisms in Europe. An Overview of Policy Options for After 2012, CDC Climat and Climate Focus.

[228] Cf. v. Unger, M. / Conway, D. / Hoogzaad, J, 2011, Carbon Offsetting in Europe Post 2012: Kyoto Protocol, EU ETS, and Effort Sharing, Frankfurt a. M.

Article 24a EU ETS

tence, and a focused, tailor-made system may be agreed that incorporates certain design features from JI (e.g. methodologies, guidance, perhaps also the Track 1 / Track 2 dual-track, see below), but also allows to venture more freely into policy areas – such as peatlands – which may qualify for priority treatment.

Note that the development of procedures and the legislative process (involving 'comitology procedures', i.e. the Commission adopts the measure in cooperation with the relevant Member State committee) will take time, and while technically possible, establishment of a mechanism before 2020 may not prove viable in the context of 2 billion or more surplus units in today's EU ETS. The initiative for drafting comitology measures rests with the Commission. There could be a role for Member States, however, through their representatives on the relevant committee. Any committee member can make a written request to include a matter on the agenda of the committee.[229]

Among the design features, the following may be considered:

- **Governance Structure:** JI has developed along a two-track governance structure, allowing for both horizontal (Track 1) and vertical (Track 2) project registration and implementation. While the JISC promotes the transition from the dual-track structure to a unified system (see above chapter 3.2.1), the specific EU situation may recommend a more diverse structure. Article 24 a EU ETS could incorporate a 'track 1' style approach only (Member States organize the mechanism individually applying a common set of rules) or a dual-track approach similar to the existing JI structure. The high trust among Member States, the general enforcement powers of the European Commission, considerations of subsidiarity, and varying focus areas (e.g. peatlands in Northern Member States) would seem to support such an approach.
- **Technical/Methodological Issues:** The mechanism should be informed by the rich experience gathered under JI, the CDM and also the voluntary standards. A robust peatland standard or protocol could be established in little time, building on parallel exercises in particular by the VCS, while considering the EU context in terms of additionality (regulatory additionality, in particular), risk of leakage, and perhaps multiplying factors (x allowances/credits for x tCO2 reductions). Further simplification seems feasible with regard to the use of default factors and performance benchmarks for baseline/reference level setting.

Other than non-permanence (legitimately or not)[230], the European Commission, in its 2008 Impact Assessment, considered risk of leakage, lack of additionality, and double-counting as particular risks for LULUCF project-based crediting.[231] These concerns, however, appear to relate mostly to forest management, afforestation in reforestation measures, in particular regarding additionality and double-counting. The implementing measures as provided in Article 24a need to ensure that double-counting of emission reductions is prevented. Additionality and also leakage are standard risks that, as the voluntary market has shown, may be robustly accounted for. Non-permanence from the risk of stock loss, if deemed relevant by the regulator, could be adequately addressed through a buffer pool or an insurance system.

Concerns, however, emerge on another level. Peatland interventions have proved rather costly due to high (and rising) land costs. In the German example "*Moorfutures*" (see chapter 2.1.7), abatement costs per tonne are currently in the range of 30 to 60 EUR. Such a cost profile would be prohibitive for interventions under

[229] Standard Rules of Procedure – Council Decision 1999/489/EC, 2001/C 38/03, Article 2 (b).

230 See the discussion above, s. chapter 3.2.2.

231 European Commission, Impact Assessment 2008, page 59.

Article 24 a EU ETS for a number of years to come. Emission allowances (EUAs) trade well below 8 EUR, and market observers reckon that the price averages below that threshold for the time until 2020.[232] This said, several factors, including 'carbon-lock-in' effects due to today's low price signals, growing energy consumption, an assumed EU reduction commitment of 40% below 1990 levels for 2030 (in line with the European Commission's '2030 Framework for Climate and Energy Policies')[233] and continuous, if moderate, growth across the EU (1% of GDP annually), leave analysts to predict steep rises: The EUA price could reach 96 EUR per tonne by 2030, according to *Thomson Reuters*.[234] At those levels, peatland-generated credits would present an attractive market choice.

Peatland Fund Options

Certain additional variations may be considered by policy-makers. Under a hybrid public-private option, the agricultural sector would be charged with setting up a **sector-wide fund solution** – fed through land operator contributions based on, e.g. farm size, soil average, and production, with fee reductions or exemptions for those operators, which secure commit to reduction targets for their own lands – to create dedicated demand for peat carbon projects. The market element would then play through call for tenders and other competitive procedures to achieve mitigation effects at low cost.

A privately driven alternative would consist in establishing a scheme under which economic operators, which are not subject to the EU ETS (in particular the service sector), could (voluntarily) achieve "climate neutrality" through offsetting their emissions under a Article 24a EU ETS / peatland window.

3.4.2 Trading and crediting under the ESD (Option A-8)

While excluding LULUCF from its direct scope, the Effort Sharing Decision demonstrates a notable affinity to LULUCF interventions. It requests the European Commission to assess modalities for the inclusion of LULUCF in the EU reduction commitment and gives a specific role to Member State "intentions" in this context (Article 9 ESD). It instructs the Commission – conditioned on the signature of an international agreement (thus: the 2015 agreement) - to submit a report assessing, inter alia, "the impact on the Community agriculture sector", "the appropriate modalities for including emissions and removals related to land use, land use change and forestry in the Community", and "afforestation, reforestation, avoided deforestation and forest degradation in third countries" (Article 8 (1) ESD). Furthermore it permits Member States to purchase, and use for compliance, temporary and long-term CERs, tCERs and lCERs, stemming from LULUCF projects under the CDM (Article 5 (1) (d)).

This more open approach has certainly to do with the fact that the compliance obligation falls on Member States, not private operators, and that this reduces the stated risk of liability: If a Member State uses tCERs or lCERs, it commits to continuous replacement (Article 5 (1) (d) ESD). Yet, the ESD framework also seems more flexible and robust and altogether less uneasy about changes and 'trials' than the EU ETS with its direct exposure to the market and industry competition. The relatively low number of direct participants, the horizontal governance system between the European Commission and the Member States, and the greater level of flexibility regarding reporting and accounting than what is owed under the EU ETS make the ESD perhaps the appropriate first choice testing ground for emissions trading on the basis of LULUCF or, more specifically, peatland related activities.

However, the trading modes and formats under the ESD are limited. It does not hand out installation or sector-specific allowances – annual emissions allocation units ("AEAs") – but rather Member States each year receive a global quota. Peatland interventions fall altogether outside the accounting framework; and even if the accounting coverage was extended, there would be no direct involvement of these interventions. Each Member State facing a commitment gap chooses either to reduce its overall emissions or it buys international

232 Thomson Reuters Point Carbon, 19 September 2013, accessible at http://www.pointcarbon.com/aboutus/pressroom/pressreleases/1.2584441.

233 See http://ec.europa.eu/clima/policies/2030/index_en.htm.

234 Thomson Reuters, see footnote 232.

or domestic (Article 24 a EU ETS) credits. This means that peatland interventions within the EU can come into focus under the ESD only via JI or Article 24 a EU ETS.

Effort Sharing and Emissions Trading

In order to achieve compliance, Member States may purchase specific international credits (CDM or JI) up to an initial quota of 3% or (for some) 4% of their annual emission allocation ("AEA"), respectively (if 4% in total, a fifth of this must come from least developed countries). They can further increase the quota through the purchase of international credit quotas from other Member States, and they can purchase other Member States' AEA units ("AEAs"). Finally, they are able to use "credits from Community-level projects pursuant to Article 24 a of [the EU ETS Directive] towards their emissions reduction commitment, without any quantitative limit whatsoever" (Article 5 (7)).
Note that globally there is a considerable oversupply with AEAs – at least up to 2020 – and that the number of countries, which are set to run a deficit, and thus need to purchase credits, is small (Austria, Belgium, Finland, Ireland, Luxembourg, and Spain).[235]
The purchase of AEAs is a novel feature of the EU's emissions trading framework. The technical basis – definition of units, registry inscription, unit transfer between Member States, carry-over, how to transfer credit entitlement –[236] has been formally adopted in May 2013 only. The first compliance period is 2013 with reporting and compliance verification due in 2015. Failure to meet the yearly target will lead to "corrective action" measures in accordance with European procedures (Article 7 ESD).

An additional option is offered going beyond the regulatory set-up and targeting the creation of an **AEA-*cum*-peatland investment scheme**, similar to the 'green investment schemes" (GIS) that emerged around AAU transactions within the Kyoto framework (see chapter 2.1.3). An AEA purchasing country, in this option, would agree with a selling country – e.g. a peatland rich country of the Baltics – that the proceeds of the transaction go to a particular peatland restoration intervention or campaign generating a pre-defined amount of emission reductions.

3.4.3 Separate Market Option (A-9)

A separate peat emissions compliance framework – outside the EU ETS and the ESD – would address a number of issues: It would single out peatland emissions without threatening the principle of 'equal treatment' that rules the EU ETS. It could restrict the focus to emission reductions leaving aside the more problematic issue of sequestration/sinks. The sector restriction would guarantee harmonized MRV standards across countries. It would also avoid the steep abatement cost differences between different LULUCF-activities and create overall market stability for peatland emission reductions and emissions trading. Finally, it could adjust the compliance period, thereby shifting from the accounting *year* approach to a (longer) accounting *period* approach. Note however that whereas drained peatlands have everywhere a disproportional effect on the total emissions from land use, a number of Member States do not have substantial peatland areas and that a EU-wide peat compliance framework may not be a priority for these countries. Alternatively, an all-in LULUCF emission compliance framework may be agreed on, or the creation of a peatland-compliance-framework comes with an opt-out or opt-in function to give Member States the choice whether they wish to participate in the scheme or not.

The framework would build on the reporting system under the EU LULUCF Accounting Decision and link it to the EU Registry, for which Member State specific peat emission budgets, expressed as peat emission units

[235] See for Member State performance figures European Environment, Trends and projections in Europe 2013 – Tracking progress towards Europe's climate and energy targets until 2020, accessible at http://www.eea.europa.eu/publications/trends-and-projections-2013; for Belgium, Ireland and Luxembourg the compliance gap is currently bigger than 10%.

[236] Commission Regulation (EU) No 389/2013 of 2 May 2013 establishing a Union Registry pursuant to Directive 2003/87/EC of the European Parliament and of the Council, Decisions No 280/2004/EC and No 406/2009/EC of the European Parliament and of the Council and repealing Commission Regulations (EU) No 920/2010 and No 1193/2011, OJ L122/1 (3 May 2013).

("PEUs") would be issued. The length of the compliance period would be chosen to accommodate for annual meteorological variations and effective response times of the applied monitoring proxies (e.g. 5 years for vegetation[237]). Country-specific targets would need to be established, potentially using a similar methodology to the one used for the purpose of the ESD, while taking into account the very different occurrence and land use status of peatlands as well as EU-wide peat protection regimes already in existence (e.g. the *Habitat Directive* and Natura 2000 framework). Generally, the targets should be ambitious; otherwise the creation of a trading framework would be redundant. Member States could trade PEUs freely, but PEUs would not be compatible with other units held in the EU Registry. An exception to non-fungibility/non-linkage could be twofold, however. First, the PEU framework may allow for a certain international credit window, which itself may be restricted to international credits from peatland interventions (generated under the VCS or elsewhere). Second, the peatland framework may include an EU-internal peat crediting facility, under which Member States could hand out subsidies – in accordance with the EU state aid guidelines – to land owners or land operators, which take an additional emission reduction effort.

3.4.4 Cross-Market Option (A-10)

Emissions trading is mostly thought of in a vertically organized system. A GHG emission reduction cap is defined at a higher level (e.g. Kyoto Protocol or the 2020 emissions target for the EU), and reduction compliance obligations are set up accordingly at the lower level (for industries or Member States). Yet emissions trading could also be designed in a horizontal dimension linking emission reduction crediting to policy areas outside emissions trading proper. A range of EU-regulatory frameworks aim at creating a climate and mitigation (emission reduction) benefit – regulations on fuel standards, biofuels energy efficiency, cross-compliance in agriculture, etc. – and often create compliance obligations or incentives for business to achieve a certain output. Where such output is commensurate with peatland-based carbon crediting, i.e. the obligation or incentive benefit can be expressed in tCO2eq, business (and governments) may be given flexibility (within limits) to achieve compliance or the relevant incentive thresholds by either primary means (achieving a certain fuel standard, sourcing biofuels, complying with retrofit quotas, etc.) or secondary means (peatland emission reduction credits, "PERUs").

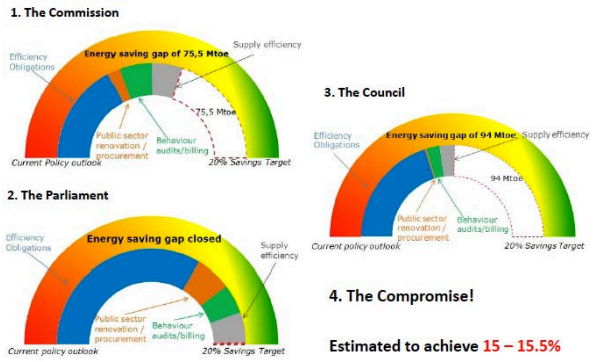
In an example: Energy Efficiency Directive 27/2012/EU (EED) has been complemented for the high level of ambition – to achieve a 20% energy efficiency target by the year 2020 (compared to projections) – but has also given rise to heated debates, not least during the legislative process. Article 7 specifies the requirement for EU Member States to set up an obligation scheme for their energy distribution and sale companies. It provides that annual energy savings from January 2014 each year must be at least 1.5% of the annual energy sales to final customers (as averaged over the years 2010-2012). The necessary calculation, however, allows for a number of flexibilities (EU ETS compliance buyers need not be taken into account and fuel distributors and retailers may be excluded; pre-Directive action can offset the target) and cross-benefits (energy saving achievements in energy transmission and distribution are deductible), as long as the energy saving total due (1.5% annually) is not reduced by 25%. Member State governments have to set their own reduction targets, and they are put under the obligation (Article 3) to renovate 3% of heated or cooled buildings "owned and occupied by [the] central government" each year. A range of exceptions and flexible accounting details apply here as well.

The target – the EED also entails 'soft targets' addressing energy efficiency gains through procurement, energy audits and awareness raising – and flexibility arrangements were the result of intense negotiation (and lobbying) in the legislative process. The legislative bodies, Commission, Parliament and Council, took varying positions to close (or reduce) the overall gap in ambition the EED means to fill (see figure 12). The 20% target does not directly aim at climate change mitigation, and notabene the average carbon output of energy consumption is different from Member State to Member State. Yet, the reduction of GHG emissions in a

237 E.g. Couwenberg, J., Thiele, A., Tanneberger, F., Augustin, J., Bärisch, S., Dubovik, D., Liashchynskaya, N., Michaelis, D., Minke, M., Skuratovich, A. & Joosten, H., 2011, „Assessing greenhouse gas emissions from peatlands using vegetation as a proxy", Hydrobiologia 674, 67-89.

cost-effective way is one of the two main objectives of the EED (the other being to reduce the dependence on energy imports (see Recital 1 of the EED), and each national energy consumption target translates into overall greenhouse gas reduction gains.

Figure 12: Negotiation Positions during the EED Legislative Process.



Source: Coalition for Energy Savings; World Green Building Council.

Under the Cross-Market Option it is proposed to incorporate an emission reduction compensation mechanism and link it to all (or several) flexibility provisions that reduce the overall stringency of the EED target. It is noted that the EED's overall target, and each Member State's national target, is the reduction in energy consumption, expressed in tonnes of oil equivalent (toe). Energy consumption, however, across a Member State, is mirrored by an average carbon intensity figure. The latter may change over time (through a change in the energy mix), while the former remains stable but the correlation is widely used to calculate emissions factors for the purpose of GHG inventories and even carbon project based mechanisms (cf. electricity grid factors). Thus, national energy consumption target for 2020 (or any other year in the future) could be shadowed by the correlate emission reduction factor, and the gap-to-the-target (see fig. 4) in energy consumption could be remedied at least partially through additional efforts in reducing GHG emissions. Thus, energy distribution and sale companies could be given the liberty to use certain flexibilities on the condition that the resulting gap (as expressed in toe and tCO2) be compensated through carbon credits (PERUs). Alternatively, the companies could be given more time to achieve certain targets, as long as they compensate for the carbon losses in PERUs. The same compensation flexibility could be granted to Member States concerning their renovation targets and even their overall target. Finally, PERU purchase obligations could play a role within the sanction regime (penalties, Article 13 EED).

3.4.5 Market Options at Member State Level Option A-11 to A-14

Article 10 of the EU LULUCF Accounting Decision requires that Member States report for each accounting period on their current and future actions to "limit or reduce" emissions from, inter alia, cropland management, grazing land management as well as wetland drainage and rewetting. The first information report is due by 30 June 2014. The relevant information is to include, among others, an analysis of the emission reduction potential (Article 3 (2) lit. c), a list of the most appropriate measures taking into account country circumstances (lit. d), existing and planned policies to implement those measures including a quantitative and qualitative description of the expected effects (lit. e) and an indicative timetable (lit. f). Indicative measures are listed in Annex IV of the decision. They include a range of land-use related activities; concerning organic soils, peatlands and mires, they list the following:

- *Measures to improve the management of agricultural organic soils, in particular, peat lands, such as:*
    - *Incentivizing sustainable paludicultural practices; and*

  - *Incentivising adapted agricultural practices, such as minimising soil disturbance or extensive practices*
- *Measures to prevent drainage and to incentivize rewetting of wetlands; and*
- *Measures related to existing or partly drained mires, such as:*
  - *Preventing further drainage;*
  - *Incentivizing rewetting and restoration of mires; and*
  - *Preventing bog fires.*

The annex or the decision as a whole does not specify the type and nature of such measures. From the terminology used and given the systematic context, 'preventing measures' seem to point to a 'hard' command-and-control intervention model, while 'incentivizing measures' seem to associate a set of 'soft' actions, including market-based ones to induce and encourage, rather than command, stakeholders. This is broadly in line with the logic order of priorities. The prevention of bog fires represents the most intense depletion of bogs (and organic material) and is likely to cause a range of collateral damage. It is a top priority and warrants a no-further-harm and restoration obligation for peatlands with a high probability of fire (due to drainage, abandonment and access[238]). The meaning of "preventing further drainage" is not entirely clear: A discontinuation of drainage infrastructure maintenance leads, in many cases, eventually to (spontaneous) rewetting, an item however that is separately addressed in the list. It seems reasonable to conclude that "preventing of further drainage" refers to the further lowering of the peatland water levels. This, in turn, is another high priority that warrants effective command-and-control action. In the German context, the appropriate legal framework for such 'hard' interventions may become the federal soil protection law (*Bundes-Bodenschutz-Gesetz*).

Paludiculture

Paludiculture (Latin *palus* = marsh, swamp, Greek pilos (πηλός) = mud, clay) refers to the sum of agricultural techniques and practices that involve the wet cultivation of peatlands and their sustainable usage. A traditional form of paludiculture is reed mowing; modern forms include the cultivation of biofuel crops (sedges, reed and canary grass) on rewetted fens and processing the biomass to pellets and briquettes, the cultivation of peat moss (sphagnum farming) as a raw material for horticulture growing media, and the cultivation of black alder as a high quality wood resource at water levels just below the surface[239].

Soft measures ("incentives") are foreseen to induce farmers (i) to switch to sustainable paludicultural practices, (ii) to minimize harm (soil disturbance and other), and (iii) to perform, or allow for, rewetting and peatland restoration. The technical perspective – referring to the options, results and effects of an intervention – has been thoroughly researched. Best-practice-peatland-guidance is available, which makes a convincing case for paludicultures (see box) and which gives numerous recommendations on lesser-harm practices.[240]

238 Cf. Abel, S., Haberl, A. & Joosten, H. 2011. A Decision Support System for degraded abandoned peatlands illustrated by reference to peatlands of the Russian Federation. Michael Succow Foundation for Protection of Nature, Greifswald, 52 p.

239 Joosten, H. / Gaudig, G. / Krawczynski, R. / Tanneberger, F. / Wichmann, S. / Wichtmann, W., 2014. Managing Soil Carbon in Europe: paludicultures as a new perspective for peatlands. In: Banwart, S., Milne, E. & Noellemeyer, E. (eds.): Soil Carbon - science, management and policy for multiple benefits. SCOPE Science Monograph 71, CABI; Wichtmann, W., Schröder, C. & Joosten, H. (eds.), 2014, Paludiculture – productive use of wet peatlands. Schweizerbart, Stuttgart.

240 See, for instance, Joosten, H. / Tapio-Biström, M.L. / Tol, S. (eds.), 2012, Peatlands – Guidance for Climate Change Mitigation through Conservation, Rehabilitation and Sustainable Usage, FAO; Gawler, M. (ed.), 2002, Strategies for Wise Use of Wetlands: Best Practices in Participatory Management 1998), Wageningen.; Chatterjee, A. (compilor) / Phillips, B. / Stroud D. (eds), 2008, Wetland Management Planning: A Guide for Site Managers, WWF India; for concrete paludiculture options and economic feasibility assessments see, for instance, Joosten, H. / Dommain, R., Feasibility Study for Paludiculture in Indonesia, Greifswald; see furthermore the focus area report "Landwirtschaft im Zeichen des Klimawandels: Klima-Hotspot Moorböden" of the German Thünen-Institut, http://www.bmelv-forschung.de/no_cache/de/startseite/veroeffentlichungen/forschungsreport/archiv/forep-2011-2.html; furthermore Drösler, M. et al., 2011, Klimaschutz durch Moorschutz in der Praxis, Institut für Agrarrelevante Klimaforschung (AK), von Thünen Institut; furthermore see Padfield, R. / Waldron, S. / Drew, S. / Papargyropoulou, E. / Kumaran, S. /

Notably the introduction of paludicultures can reduce the level of net emissions significantly and in some cases to zero. While from an agricultural needs and market perspective not all peatlands currently used as farmland may be transformed to land used for paludiculture, there is a decent demand for paludiculture products, whereas the relevant business opportunities are understood by too few farmers, and realized by even fewer.

This leads to the question of incentives and inducements to behavioural change. *Kuikman et al.* recommended that the EU legislator promote "ecologic competitiveness" among land users and farmers in particular.[241] The same may be recommended for national governments. Admittedly, the scope of options is limited, as the primary incentive scheme for EU farmers, the Common Agricultural Policy (CAP) is regulated at the EU level. The strengthening of peatland conservation measures within the CAP (in particular through the cross-compliance mechanism) and beyond (e.g. through the adoption of the long-stalled Soil Framework Directive) appear pan-EU priority options.[242] Similarly, the influential structural and rural development funds provided by the EU to Member States would be a fitting policy framework to promote peatland conservation and rewetting action.

There are other options, however, that can boost "ecologic competitiveness" for peatland protection at Member State level, inter alia:[243]

- **Option A-11:** Establish a country-wide (or region-wide) peat inventory and peat zoning atlas and define protection regimes according to drainage and/or degradation threats and peatland management targets. While land use guarantees (and re-use guarantees if the users test alternative land use forms[244]) may apply as a rule, installation of drainage structures could become subject to narrow permits, low-impact targets and mandatory supervision, whereas compensation measures for intense disturbance activities may be imposed, and peatland users may be targeted to produce regular peatland management reports;
- **Option A-12:** Improve CAP cross-compliance regime[245] in Germany through improved enforcement, an enhanced focus on peatlands, and better reporting of compliance, sanctions, and peatland-supportive action;
- **Option A-13:** Create a support scheme tailored for paludicultural products, e.g. paludi-pellets, as part of the EEG or an alternative framework, and offer positive incentives for alternative land use scenarios (e.g. public land purchase and land swop programs; preferential lease arrangements for paludicultural use);

Page, S. / Gilvear, D. / Armstrong, A. / Evers, S. / Williams, P. / Zakaria, Z. / Chin, SY / Balle Hansen, S. / Campos-Arceiz, A. / Latif, MT / Sayok, A / Tham, MH, 2014, "Research agendas for the sustainable management of tropical peatland in Malaysia", *Environmental Conservation.*

241 Kuikman.

242 See also in this context the preparations for a European Commission Communication on "Land as a resource" aimed at raising awareness of the value of land as a finite resource and developing future politics to promote the sustainable use of land, http://ec.europa.eu/environment/land_use/index_en.htm.

243 See, in this context, also Sachverständigenrat für Umweltfragen (SRU), 2012, Umweltgutachten, Berlin; furthermore: Bundesamt für Naturschutz, Neue Wege im Moorschutz – Paludikultur, Diskussionsbeiträge (2011), http://www.bfn.de/fileadmin/MDB/documents/ina/2011/Diskussionspapier_Moorschutztagung_Vilm.pdf; IUCN UK Committee, Peatland Programme, 2011, Commission of Inquiry on Peatlands, Edinburgh.

244 Cf. § 14 Abs. 3 BNatSchG that allows participants in agro-environmental schemes or contractual nature conservation to resume conventional agricultural use without restrictions within 10 years.

245 On the deficits of compliance with, and enforcement of, the cross-compliance regime under the CAP see Brouwer, F. (ed.), 2012, Economics of Regulation in Agriculture. Compliance with Public and Private Standards, Oxfordshire.

- **Option A-14:** Launch a set of competition tendering processes among farmers to undertake peatland rewetting and restoration activities using state-of-the-art peatland emission assessments and securing substantial reductions. Compliance with environmental and biodiversity standards as well as proof of additionality should be the competition entry thresholds (exclusion criteria), while the most cost-efficient price per tCO2eq. should be the decisive factor in awarding the tender. It is suggested to distinguish calls according to different peatland types and current usages, but also according to the length of commitment. The longer the rewetted state continues, the better for the climate (and biodiversity). However, as shown (see chapter 4.1 above), returning to drainage practices after a number of years of rewetting does not reverse emission reductions achieved. Rather, emission reductions achieved continue as permanent in the atmospheric balance. On this assumption, a set of tenders may be put to the market that target e.g. "a minimum of 10 years stable rewetting conditions". The advantages of such a call are that farmers will be more likely to participate knowing that they may revert to previous practices in the future; and that the price per emission reduction will be considerably lower, as the long-term provision of land is not a requirement.[246]
- Further options include:
    - Mainstream paludiculture and peatland-best-practice guidance into agricultural education;
    - Improve sustainability certification for biomass to ensure that biomass produced and subsidized through – in Germany – the renewable energy law (*Erneuerbare Energien-Gesetz*, EEG) does not imply the drainage and/or degeneration of peatlands; the existing *Biomasse-Nachhaltigkeitsverordnung* may be the appropriate regulatory point of departure;
    - The development and/or enhancement of regionally or nationally available voluntary carbon codes (on this see below chapter 3.5) and the provision of public support functions including for registry services, fund management, but also arguably the introduction of a levy-system – in Germany: comparable to the renewable energy surcharge raised through the EEG – for farmers or land-users as a whole.

3.5 Improving the Voluntary Market Environment (Option A-15 to A-18)

Voluntary carbon standards have spearheaded numerous market innovations and the Verified Carbon Standard, in particular, along with a number of regional and national initiatives (see chapter 2.1.7), have ventured into the field of LULUCF and notably peatland interventions. By supporting the development of dedicated methodologies – for instance, greenhouse gas emission site type ("GEST") based ones, under which ground vegetation composition and water levels are used as proxies for peatland related emissions –[247] and through combining methodological approaches from both regulated and voluntary standards,[248] voluntary standards have shown the technical and practical feasibility of peatland related interventions, while also securing the general compatibility of voluntary standard options and regulated ones. Both features may facilitate the mainstreaming of voluntary peatland standards into the regulated carbon markets. Voluntary standards, including the VCS, have also proved successful in addressing one of the key barriers for LULUCF emission reduction commodification: the issue of permanence. Instead of following the CDM approach of issuing hard-to-market temporary credits, the VCS provides for the issuance of permanent ones, wholly fungible with non-LULUCF credits, which are insured for through a credit buffer, from which units are released in case any credited project activities are reversed. The buffer and insurance mechanisms, as ventured by the VCS, has received considerable international attention over recent years and featured prominently in recent

[246] The price for long-term land provision is not neutralized by a higher emission reduction yield. The longer a project activity, the higher this yield; yet, costs are usually calculated over the yields of the first 10, 15, 20 or 25 years, not longer, even though they have to 'carry' the price of infinite project continuation.

[247] See, e.g., Verified Carbon Standard (VCS), Baseline and Monitoring of the Rewetting of Drained Peatlands used for Peat Extraction, Forestry of Agriculture, http://www.v-c-s.org/methodologies/baseline-and-monitoring-methodology-rewetting-drained-peatlands-used-peat-extraction.

[248] Ibidem, see in particular the section "Sources", which makes reference to both CDM and VCS tools and methodologies.

SBSTA discussions on enhancing LULUCF interventions within the CDM (see above chapter 4.3.2). The development is new evidence for the pioneer role the voluntary carbon standards have for international climate regulation.

Promoting and enhancing voluntary market options – in particular those that target peatland interventions – may give rise to innovations, and may set important precedents for regulated regimes, in the future. We conclude this chapter with a number of recommendations in this respect that concern the technical level (standard 'regulation'), the institutional level (market infrastructure) and the market level (funding and credit sales).

3.5.1 Improving the Permanence Test (Option A-15).

The VCS to date requires all LULUCF project activities to undergo a non-permanence test ("AFOLU Non-Permanence Risk Tool")[249] and to feed a credit buffer account. Over the course of the project lifetime, the buffer is released to the project proponent – in case the non-permanence risk does not materialize – or is retained and subsequently cancelled, where a reversal risk materializes. The buffer account is pooled, i.e. the entirety of LULUCF (or AFOLU) projects vouches for any project carbon losses.

While the VCS buffer approach appropriately addresses non-permanence risks from sequestration projects, it fails to account for the specific risk profile of peatland related emission reductions (see above, section 4.1): Project reversal (e.g. new drainage after a number of years of rewetting) does not nullify the emission reductions achieved; rather they continue as a benefit in the accounting system. Consequently, the majority of risk factors assessed in the AFOLU Non-Permanence Risk Tool – in particular the "internal risks" (project management, financial viability, opportunity costs, and project longevity), "external risks" (land tenure and resource access/impacts, community engagement, and political risks) – do not represent appropriate test categories. Just as with energy-based project types, the failure (at any point in time over the crediting period) to secure robust project management or land ('project site') tenure, or prevent further implementation may have an impact on future emission reductions; yet they do not nullify emission reductions achieved in the past. The application of the risk tool and the provision of a buffer account are redundant in case of emission reductions.

The matter may ultimately be one of accounting and credit flow (as the buffer number will be released back to the project over time); yet, the impact on project credit liquidity and finance is substantial, and we suggest the AFOLU non-permanence risk assessment should only apply for sequestration projects.

The threats from stock loss events, on the other hand – assuming that this risk should be covered by the project developer – warrants a different treatment and test procedure than the one used under today's 'Non-Permanence-Tool'. As noted before, questions related to "internal risks" and "external risks" are redundant and do not establish the stock loss risk. Stock loss occurs in the event of prolonged periods of draught, fire, peat extraction or where the level of drainage is intensified beyond the baseline (e.g. when baseline water levels have been at 40 cm below surface, project water levels at 0 cm below surface, and 'reversal' water levels are at 100 cm below surface). Thus, the stock loss risk profile for peatlands is different from (and considerably lower than for) above-soil organic matter (in particular forests), and warrants an assessment limited in scope and effect (number of credits retained). It would appear appropriate to apply a two-step approach: first to weigh the likelihood that stock loss risk could materialize, and where a certain threshold of probability is met, to apply a second layer of buffer crediting (all projects above the threshold bank their credits and remain liable for stock loss events). For projects below the threshold, no special buffering regime would

[249] Verified Carbon Standard (VCS), 2012, AFOLU Non-Permanence Risk Tool, Procedural Documents, Version 3, http://www.v-c-s.org/sites/v-c-s.org/files/AFOLU%20Non-Permanence%20Risk%20Tool%2C%20v3.2.pdf, 29.10.2014.

apply. Rather, we suggest that all projects (maybe even beyond the AFOLU sector proper) cover for the risk remainder through committing a base level (x%) of credits issued for mandatory retiring. [250]

3.5.2 Re-Assessing Longevity (Option A15 cont´d)

A sub-feature of the VCS AFOLU Non-Permanence Risk Tool assessment concerns project longevity. The highest permanence score is achieved, when a project is backed by a legally binding agreement that covers at least a 100 years from the project start date (impacting positively the buffer amount). By contrast, where an AFOLU project longevity is less than 30 years, the project fails the risk assessment altogether and is not eligible for crediting.[251] As argued above, the longevity test is appropriate for sequestration projects and – possibly, although with limitations – project-based or jurisdictional REDD (which also primarily targets emission reductions, not removals, but where the risk of stock loss is generally higher). It is less so for peatland projects (see section 7.1) above, and outside the permanence/stock loss test (see before) the longevity test could be done away with altogether or reduced to a minimum threshold (e.g. 10 years). Short- (project length 10 to 15 years) and mid-term (15 to 20 years) may be privileged through simplified validation procedures. This would encourage more landowners and land users to make their land accessible for peatland rewetting activities – at a much reduced price, as they have the guarantee to return to previous practices after the period in question. This would also positively affect the cash-flow barrier: Projects mostly generate credits only after five years and therefore depend on (often hefty) advance funding, which is even higher, where land purchase funds have to be provided. When a landowner agrees to provide land for e.g. a 10 years, and the carbon standard accepts a 10 year project, the initial costs are considerably lower than in the case that land tenure has to be secured for 30 years (or even a 100 years). After 10 years, however, the project has become profitable, and the extension of the lease may be contracted on a yearly or five-yearly basis, using proceeds from the on-going project.

3.5.3 Methodological Tools (Option A-16)

The CDM originally created a wealth of AFOLU accounting procedures captured in so-called baseline and monitoring methodologies. These methodologies were mostly custom-developed for specific A/R CDM projects causing considerable overlap in functionality and creating significant inconsistencies. Subsequently, the CDM successfully worked towards the consolidation of methodologies, thus instituting a more top-down controlled development of accounting procedures. Yet, the CDM only covers A/R activities and most of the wetlands-related procedures must be sourced from other standards (notably VCS and American Carbon Registry). These standards also experience problems with inconsistencies in methodologies creating the possibility of cherry picking but still have not (or little) engaged in consolidation. Tightening up procedures for methodology development over the last few years has responded to complaints from the market, but is unlikely to resolve the issue entirely. Moreover, approved methodologies are usually a straightjacket for project proponents and it turns out that very often new methodologies are developed for each project, or existing ones amended, to meet the project's demands. A way forward may be to acknowledge the need for tailor-made solutions, while better using the existing methodological stocks, e.g. by having the standards provide off-the-shelf procedures for various aspects of GHG accounting, with a view to flexibly compile a ‘project methodology’ that fits the project activity. This would at the same time reduce transaction costs.

3.5.4 Institutional Facilitation (Option A-17)

Voluntary standards often suffer from an institutional weakness. While regulated standards – such as the CDM or JI – have created a broad institutional infrastructure at the international as well as at the national level (e.g. the mandatory designated national authorities (DNAs) alongside optional national market facilities for the CDM), voluntary standards rarely rely on a similarly robust institutional structure. The government-

250 Another option would be to allow for government guarantees to cover for eventual losses, as foreseen by Verified Carbon Standard (VCS), 2013, Jurisdictional and Nested REDD+ (JNR) Non-Performance Risk Tool, Procedural Document, Version 3, file:///C:/Users/gaetckef/Downloads/JNR%20Non%20Permanence%20Risk%20Tool%252C%20v3.0_0.pdf, 29.10.2014.

251 AFOLU Non-Permanence Risk Tool, VCS version 3.0, 2.2.4 (section 5 and 6).

embedded *MoorFutures* standard (see chapter 2.1.7), under which public sector entities provide the relevant standard and crediting infrastructure (including longevity guarantees) is an exception. The majority of standards (including the VCS) has a central management facility and uses external services for validation, verification and registry operations – one reason why the VCS has been able to build a reputation as robust and independent. However, often local audit facilities or support are missing. This translates into low country-wide awareness, knowledge and experience, and even regulatory uncertainty (e.g. where a project needs to show government support or the absence of government accounting).

We recommend that any country willing to promote voluntary carbon markets create a national coordination facility funded, where necessary, from public sources, that enables contacts between market participants and the government, launches awareness and promotional campaigns, and provides market support services (providing information and trading platforms and (national) project prospects, trading documents, training tools for carbon cycles, and other).

A national coordination facility could also create focal areas – e.g. one for peatland conservation and restoration projects – linking voluntary carbon market options to regulatory actions at the national, EU and international (2015 agreement) level, providing peatland inventory and peat emission tracking services, peatland disturbance and land use information, and streamlining subnational activities (e.g. in a federal context).

Finally, in the context of voluntary peatland carbon interventions, a public facility could provide financial services such as providing (soft) loans or guarantees for seed funding and – to the extent the creation of a buffer is deemed necessary – purchase buffer amounts to secure credit permanence at the project level. The facility could also provide an overall fund solution – as an intermediary between investors/credit purchasers and project proponents – thereby improving long-term finance and diversifying project risks.[252]

Note that the issues of carbon standard and (national) carbon facility are distinct. While the installation of a stand-alone system that combines both the standard (providing the carbon cycle rules) and the infrastructure (concerning registry, registration, unit issuance, tracking, cancelation, validation, verification, unit guarantees, etc.) may yield advantages,[253] it is by no means a necessary feature, all the more since the VCS offers an internationally available standard for peatland related carbon project development. The national facility may rely on the VCS (or any national or regional standard) and concentrate on addressing particular barriers (such as seed funding) and issues of implementation.

3.5.5 Boosting the Market Off-Take (Option A-18)

Primary demand for voluntary carbon credits comes from philanthropic, ecologically and corporate and social responsibility (CSR) inspired buyers. Yet, voluntary standards could be linked to regulatory regimes in a similar way to what we discussed in the framework of EU cross-market options (see section 6.4 above) and national market options (see section 6.6 above). That is, national and supranational regulators, instead of providing any particular offsetting environment, could link certain legal obligations (such as the obligation for energy distributers to achieve energy savings or for suppliers of mineral oil to secure certain biofuel quotas) with voluntary carbon market options, offering flexibility to those suppliers, which purchase and retire certain threshold amounts of voluntary credits. Regulators could equally create a levy regime to support investments in peatland carbon interventions, using voluntary standards in the course of implementation. The levy system could, for instance, be imposed on peatland users – alternatively on industrial, agricultural and other users of land as a whole (from a particular land size – and the levy proceeds could be invested in a 'Peatland Conservation Fund', which purchases peatland carbon credits issued from national peatland projects.

Hybrid crediting options – combining voluntary structures and regulated demand – also recommend themselves for emissions trading environments with high abatement costs, e.g. aviation, or with small individual

[252] For a recent option assessment for Germany see Wolters, S./Tänzler, D./Theiler, L./Drösler, M., 2013, Entwicklung von Konzepten für einen nationalen Klimaschutzfonds zur Renaturierung von Mooren, Umweltbundesamt, Berlin.

[253] Ibidem.

trading volumes, e.g. buildings under a city-wide trading regime. The structure could not least be used under a pilot regime, that national, supranational or subnational regulators wish to install within a relatively short time and without creating too high costs. A German city, for instance, which wishes to impose mitigation targets for certain industries – e.g. the service sector – could offer commercial tax rebates in exchange for investments in local or regional voluntary carbon credits. The creation of an offsetting standard from scratch would appear unpractical and redundant.

4 Options for developing countries (Non-Annex I)

This chapter consists of an analysis of political options to include developing country mitigation actions on forests and peatlands in the envisaged 2015 climate agreement. The analysis discusses first the emerging concepts of new market mechanisms and what is referred to as a framework for various approaches (4.1), before assessing both recent and earlier design proposals for a REDD+ mechanism (4.2). We will then explore, in a broader perspective of incentive and market schemes, options for enhanced forest and peatland mitigation actions (4.3). In the final step, we will investigate bilateral options for the EU to address peatlands and forests in developing countries, which however may become relevant only if the negotiations to reach the 2015 agreement fail (4.4).

4.1 A New Market Mechanism and New Approaches

There is wide understanding among Parties that combatting climate change and transforming towards a resource-sensitive and sustainable low-carbon economy requires the participation of markets and the private sector. Donor countries, in particular, stress the linkage between mechanisms, markets and climate finance. The European Union reckons that a new market mechanism could "become an essential catalyst for ambitious mitigation action by all countries in the near term",[254] and the bloc has long argued that "private finance will have a key role in scaling up international climate finance".[255] The High-Level Advisory Group on Climate Change Financing, established in 2010 by the UN Secretary-General Ban Ki-Moon, calculates that with an international carbon price of USD 20-25 raised in developed countries, around USD 30 billion annually could be leveraged for developing countries in addition to private investment flows of USD 100-200 billion in gross private capital.[256]

With the future role of the CDM still unclear, negotiations on market mechanisms have come to focus on two distinct concepts, the Framework for Various Approaches (FVA), on the one hand, and the New Market Mechanism (NMM), on the other. The Bali Action Plan had broadly referred to "various approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions",[257] and the Cancun Agreements had suggested to consider "one or more market-based mechanisms" to stimulate "mitigation across broad segments of the economy" and to assist developed country Parties "to meet part of their mitigation targets, while ensuring that the use of such mechanism or mechanisms is supplemental to domestic mitigation efforts".[258] Since the decision on the outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (LCA) in Durban (COP 17), a two-track approach has settled in. The Durban COP declared that "various approaches… must meet standards that deliver real, permanent, additional and verified mitigation outcomes, avoid double-counting of efforts, and achieve a net decrease and/or avoidance of greenhouse gas emissions" and issued a request to the LCA to conduct a work programme on the FVA. At the same time, it "define[d] a new market-based mechanism, operating under the guidance and authority of the Convention of the Parties, to enhance the cost-effectiveness of, and to promote, mitigation actions… [and which] may assist developed countries to meet part of their mitigation targets or commitments under the Convention".[259] The COP also requested a work programme "to elaborate modalities and procedures".[260]

In a separate move, the CMP proposed a new article to the Kyoto Protocol to the effect that "any units generated from market-based mechanisms to be established under the Convention or its instruments may be used

[254] Submission by Denmark and the European Commission on behalf of the European Union and its Member States (Copenhagen, 5 March 2012), published by the UNFCCC, April 2012, Ad hoc Working Group on Long-term Cooperative Action under the Convention, 15th session, http://unfccc.int/resource/docs/2012/awglca15/eng/misc06.pdf.

[255] European Commission, 2011, Comission Staff Working Document, Sealing up International Climate Finance after 2012, Brussels.

[256] United Nations, 2010, Report of the Secretary-General's High-Level Advisory Group on Climate Change Financing, New York.

[257] Decision 1/CP.13, paragraph 1 (v).

[258] Decision 1/CP.16, paragraph 80.

[259] Ibd., paragraph 83.

[260] Ibd., paragraph 84.

by Parties included in Annex I to assist them in achieving compliance with their quantified emission limitation and reduction commitments".[261] At COP 18 (Doha), this amendment proposal was formally adopted.[262] It requires ratification by ¾ Parties in order to become effective.

Following a round of submissions, workshops, technical papers and negotiations at LCA level, which showed that only modest common ground among Parties had been won, the Doha COP (COP 18) renewed the request for a work programme to elaborate the FVA and the NMM – this time to the Subsidiary Body for Scientific and Technological Advice (SBSTA), as the LCA Working Group had come to an end –, noting that both instruments will be developed under the authority and guidance of the Conference of the Parties,[263] and specifically for the NMM that the "facilitation of the effective participation of private and public entities" should be considered.[264]

The Warsaw COP (COP 19), with the 39th SBSTA session running in parallel, and the Lima COP (COP 20), with the 41st SBSTA session running in parallel, did not bring progress on either FVA or NMM, and negotiations were deferred to 2015. During negotiations in Warsaw, it became clear, however, that for many countries (mostly on the developing side) it was less the details of a would-be mechanism or framework than the overall context – the 'ambition gap' in commitment from developed countries – which made them reject advancing on this agenda point.[265] The Lima Conference (COP 20) has finally processed the issue onto the agenda of the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP), which is mandated to develop the 2015 agreement.

In the following, we will examine the broad lines of thoughts presented in the various country and stakeholder submissions, before we will turn to the potential role of forests and peatlands in both FVA and NMM.

4.1.1 New Market Mechanism (NMM)

The NMM appears as the more hands-on instrument.[266] It is (mostly) referred to in the singular; it has been unconditionally established ("The Conference of the Parties…defines"); it operates centrally ('top/down') under the guidance of the Convention; it foresees the participation of public and private entities; and it is meant to serve an offsetting function for Annex I Parties. Yet, the views on how the NMM should be structured and put in action differ substantially. There are three broad camps of thought, even though many Parties and other stakeholders represent positions in between.

Sector-Based Approach

The European Union has so far made the most detailed submission on the NMM, including proposing text for a draft decision and graphical explanations (see Figure 1).[267] It draws much on the experience with the flexible mechanisms under the Kyoto Protocol and especially a combination of the two tracks under Joint Implementation (without however much committing to this reference). The NMM the European Union

261 Decision 1/CMP.7, Annex 3.

262 Decision 1/CMP.8, Annex I, J.

263 Decision 1/COP.18, paragraph 45 (FVA) and 51 (a).

264 Ibid, paragraph 51 (k).

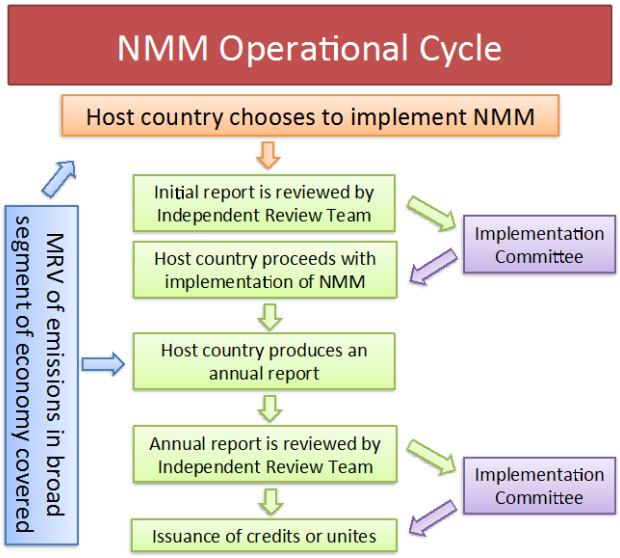
265 For a summary see The World Network, TWN Warsaw News Update (19 November 2013), SBSTA: No consensus on market mechanisms in Warsaw, http://www.twnside.org.sg/title2/climate/news/warsaw01/TWN_update16.pdf.

266 See for an early summary of views of Parties the technical paper prepared by the UN FCCC, TP/2013, Technical synthesis on the new market-based mechanism, Geneva; UNFCCC Secretariat, Report on the Workshop on the new market-based mechanism, United Nations Framework Convention on Climate Change, UN FCCC, SBSTA/2013/INF., Subsidiary Body for Scientific and Technological Advice, 39th Session, Warsaw, 11-16 November, Report on the workhop on the new market-based mechanism.; see also Marcu, A., 2012, Expanding Carbon Markets through New Market-based Mechanisms: A synthesis of discussions and submissions to the UNFCCC, Centre for European Policy Studies (CEPS). For recent submissions see, inter alia, the EU voluntary submission of 29 May 2015, at http://www4.unfccc.int/submissions/Lists/OSPSubmissionUpload/106_99_130773885444519701-LV-05-29-Voluntary%20submission%20on%20markets.pdf.

267 Submission by Denmark and The European Union (footnote 254); Submission by Cyprus and the European Commission on behalf of the European Union and its Member States (Nicosia, 16 November 2013), published by the UNFCCC, Ad hoc Working Group on Long-term Cooperative Action under the Convention, 15th session, 2012; Submission by Lithuania and the European Commission on Behalf of the European Union and its Member States, 2013, EU2013.LT, Vilnius.

makes a case for would follow a sectoral approach, i.e. "cover broad segments of the economy", such segments being defined as "one or more sector, category or sub-category" as defined by the common UNFCCC reporting format.[268] Host participation would be voluntary and open to all developing countries. A developing country Party that chooses to implement the NMM initiates the implementation cycle – which ultimately leads to "trading" or, alternatively, "crediting" of compliance-grade "New Reduction Units" (NRUs) – by preparing an "initial report" outlining the sectors or segments eligible for NMM crediting/trading, a baseline scenario, a threshold that defines the possible maximum amount of NRUs for crediting/trading and what is called the "own contribution", which indicates a mitigation ambition above the baseline and below the threshold and which does not translate into any NRUs. The threshold should be at least in the range of 10-30% below baseline emissions.

Figure 13: Model NMM (European Union)



Source: Nicole Wilke[269]

The initial report and all other implementation steps are overseen by the "Implementation Committee", which is also responsible for issuing NRUs into the NMM Registry,[270] and the "Independent Review Team", a technical expert panel assisting the committee. The implementation cycle would need to safeguard that the relationship between the NMM and the CDM be "complementary" and that double-counting should be prevented.

Project-Based Approach

China, Indonesia and other developing countries favour a contrasting approach.[271] In its submission to the UNFCCC in 2012,[272] China explains – in rather brief and very general terms – that any new market-based

268 See Decision 15/CP.17 (Annex II).

269 Wilke, Nicole, 2012, Modalities and Procedures for New market-based Mechanism, UNFCC, http://unfccc.int/files/bodies/awg-lca/application/pdf/20120519_eu_1000.pdf; Silvestrum VoF.

270 In its 2012 submission, the European Union proposes two issuance alternatives – similar in fact to Joint Implementation Track 1 and Track 2 – one for the Implementing Committee, the other for the Implementing Party.

271 China's Submission on Various Approaches and the Established Market-Based Mechanism, published in UNFCCC (footnote 254); for Indonesia see United Nations Framework Convention on Climate Change, UN FCCC, Submissions by Indonesia, Views on Framework for Various Approaches, New Market Mechanism and Non-Market Based Approaches, http://unfccc.int/files/cooperation_support/market_and_non-market_mechanisms/application/pdf/fvanmanmm_indonesia_18092013.pdf, 29.10.2014.

272 China's Submission on Various Approaches and the Established Market-Based Mechanism, published in UNFCCC (footnote 254).

mechanism should be "project-based" and in its procedures comparable to the flexible mechanisms of the Kyoto Protocol. It should not introduce emission reduction commitments for developing countries. Double-counting at the level of developed countries – through fulfilling financial and technology transfer commitments and offsetting of emissions – would need to be prevented.

Integrated Approach

Other stakeholders – including representatives of the private sector – favour an integrated approach for the creation of the NMM. The International Emissions Trading Association (IETA), a pro-carbon market group, proposes the creation of a "single new GHG commodity", generated through (i) project-level crediting against common benchmarks, (ii) "policy crediting" at national or regional level against country-specific methodologies, and (iii) "aggregate crediting" for sectors and sub-sectors against sectoral level baselines.[273] The Organization for Economic Cooperation and Development (OECD) and the International Energy Agency (IEA) propose not to aim at sectors or segments, as this may be too rigid an approach, and instead to define country-specific "groups of emitters… based on relevant attributes such as product output, processes, vintage or technology".[274] Crediting would happen not against hard-to-establish thresholds below business-as-usual, but against performance benchmarks, for which there is good precedence in the CDM (grid factors), the Verified Carbon Standard (VCS), the Cement Sustainability Initiative and certainly the European Emissions Trading Scheme (EU ETS). KfW stresses the synergies between the NMM and credited versions of nationally appropriate mitigation actions (NAMAs),[275] with which it is broadly in line with a number of countries, including New Zealand, Norway, Papua New Guinea, and South Korea.[276]

4.1.2 Framework for Various Approaches

The Framework for Various Approaches (FVA) is both broader and looser in term and concept. The open format may explain that incompatibilities in country positions are less pronounced, as each country can claim its non-exclusive approach to mitigation action. Japan, for instance, sees the Japanese Joint Crediting Mechanism as embodying the FVA idea; Brazil, by contrast, the Brazilian Amazon Fund.[277] This, however, comes at the price of a lack of harmonized action, concreteness and functionality.

The European Union proposes to define the FVA as "establishing common accounting standards and conformity checks for units or quantifiable outcomes crossing Party boundaries and used towards commitments under the Convention in order to maintain the highest levels of environmental integrity and to safeguard robust accounting for cross border mitigation outcomes".[278] The UNFCCC Secretariat sees agreement among Parties that the FVA is meant (i) to ensure the environmental integrity of mitigation actions that have a transnational element such as the "transfer of units or outcomes", (ii) to help Parties meet their commitments and targets under the Convention, (iii) provide a platform for knowledge and information sharing, and (iv) to develop a common set of accounting rules.[279]

A range of countries and stakeholders sees the NMM as a specific sub-category of the FVA. The business association IETA defines the FVA's role as encouraging "participating nations" or, alternatively, "sub-national jurisdictions" to allocate, or be given, a fixed "carbon emissions budget" made of tradable units

273 International Emissions Trading Association (IETA), 2012, A New Market Mechanism. How to attract private sector investment, Bonn.

274 Prag, A., 2012, Setting crediting thresholds for the new market-based mechanism, UNFCC AWG-LCA In-session Workshop, http://unfccc.int/files/bodies/awg-lca/application/pdf/20120518_oecd_2100.pdf.

275 KFW, Views on New Market Mechanisms, UNFCC workshop on NMM, Bonn, 19th May 2012, http://unfccc.int/files/bodies/awg-lca/application/pdf/20120518_kfw_2100.pdf.

276 For an overview see Koakutsu, K. / Usui, K./Kuriyama, A. (eds.), 2014, New Market Mechanisms in Charts, IGES.

277 United Nations Framework Convention on Climate Change, UN FCCC, SBSTA/2013/INF., Subsidiary Body for Scientific and Technological Advice, 39th Session, Warsaw, 11-16 November, Report on the workhop on the new market-based mechanism.

278 United Nations Framework Convention on Climate Change, UN FCCC, Submission by Lithuania and the European Commission on Behalf of the European Union and its Member States, 2013, EU2013.LT, Vilnius.

279 UNFCCC Secretariat, Outcomes of the workshop on the Framework for Various Approaches, http://unfccc.int/resource/docs/2013/sbsta/eng/inf11.pdf.

(dubbed "FVA units" or "FVUs"), that reflect a certain ambition under a "specific policy program".[280] Most proposals, however, foresee a looser role for the FVA focusing on harmonized accounting metrics, a platform for information sharing, and – possibly through the creation of a common registry – the prevention of double-counting and "hot air".[281]

4.1.3 The Place for Peatlands and Forests

Little attention had been given initially to the question whether the NMM or the FVA should address forests, let alone peatlands, and some countries – notably the European Union – maintain a preference for keeping the issues (or at least the discussions) distinct. There is a growing sense, however, among countries and stakeholders that REDD+ should have a role in the new mechanisms and may even serve as a showcase for establishing market-based approaches under the envisaged 2015 agreement.[282] This said, no detailed proposals have been put forward yet in the sense that REDD+ under NMM or FVA would be different from the more deeply discussed "REDD+ mechanism" (on this below). LULUCF[283]-related areas outside REDD+, such as A/R or peatland restoration have not been addressed in this debate at all.

It should be noted, however, that land use shows considerable numbers, when it comes to NAMA initiatives. Many nations have announced to develop NAMAs in the land use sectors, and close to 1/3rd of NAMAs submitted to the UNFCCC cover land use.[284] NAMAs are not necessarily "credited" and not necessarily part of either NMM or FVA, but a certain (optional) link has been recognized by the Cancun Agreements,[285] and several NAMA proposals clearly aim at a crediting instruments.[286]

4.2 REDD+ Market Mechanism

Recognized as the major achievement of the Warsaw COP (COP 19), the conference created what is hence referred to as the Warsaw REDD+ Framework (see chapter 2). The framework does not specify a specific

280 See International Emissions Trading Association (IETA), IETA on the FVA/NMM #MakingTheLinks, http://www.ieta.org/assets/UNFCCC/ieta-fva_nmm2pager.pdf.

281 See in this sense, among many others, the American position, summarized by Kelly, A., 2013, Governance and Institutional Arrangements for the FVA (pre 2020), U.S. Department of State, http://www.ceps.eu/files/Kelly.pdf.

282 See, for instance, the submission from Bangladesh et al United Nations, Framework Convention on Climate Change , UNFCC, New Market-Based Mechanism, August 2013, http://unfccc.int/cooperation_support/market_and_non-market_mechanisms/items/7710.php: "The NMM should contribute to raising level of ambition of developed country Parties in their mitigation commitments under the Convention. To this end, Parties with commitments under the Convention may use emission reduction units accruing from REDD+ results based actions that are measured, reported and verified at the national level as agreed by the COP to contribute to compliance with their additional emissions reduction commitments." Furthermore, see the view of the CEPS Carbon Market Forum, which has had no specific REDD+ focus in the past Carbon market Forum (CMF), Task Force Meeting Notes of 22 March 2013, http://www.ceps.eu/files/task_force/2012/02/TFNMMSummarySecondMeeting22032012.pdf. "REDD+ has the ambition to be a mechanism but it is a long way from being market ready. However, some jurisdictions are working in a practical way with REDD+ and that experience should be factored in even if it is outside the UNFCCC. The NMM and the Framework is supposed to play that role of bringing in non-UNFCCC initiated and developed mechanisms."

283 The term LULUCF is used in this report to cover all direct human-induced land use, land-use change and forestry activities and their emissions and removals (cf. United Nations Framework Convention on Climate Change, UN FCCC, Glossary of Climate Change Acronyms, http://unfccc.int/essential_background/glossary/items/3666.php#L), including the land-related ones e from the sector Agriculture. LULUCF is thus not limited to the homonymous sector in UNFCCC reporting nor to Annex-I countries and the Kyoto Protocol.

284 See van Tilburg, X. et. al., 2012, Status Report on Nationally Appropriate Mitigation Actions (NAMAs) Mid-year update May 2012, Mitigation Momentum. This number reflects the LULUCF share in the NAMA announcements, United Nations Framework Convention on Climate Change, UN FCCC, Appendix II – Nationally appropriate Mitigation Actions of developing Country Parties, http://unfccc.int/meetings/cop_15/copenhagen_accord/items/5265.php; van Tilburg counts 18% forestry-based NAMA submissions and 12% agriculture-based ones; concerning submissions to the NAMA registry, the LULUCF numbers are still more modest, see the overview prepared by the UNFCCC Secretariat, Williams, J., The NAMA Registry. Registry Operation in 2013, https://seors.unfccc.int/seors/attachments/get_attachment?code=C4ZYD1474OIZ9JSBSDOLO14P3PL9M2OB.

285 Decision 1/CP.16, paragraph 80 (b): "… consider the establishment… of one or more market-based mechanisms… taking into account the following… Complementing other means of support for nationally appropriate mitigation actions by developing country Parties…"

286 See, for instance, the Forestry NAMA submission of Chile, Public NAMA, NS-5 - Implementation of a National Forestry and Climate Change Strategy, including the development and implementation of a Platform for the Generation and Trading of Forest Carbon Credits. Chile, http://www4.unfccc.int/sites/nama/_layouts/un/fccc/nama/NamaSeekingSupportForImplementation.aspx?ID=5&viewOnly=1.

market-based instrument[287], let alone a REDD+ based carbon market component, but instead focuses on the process of transferring payments for results-based finance (through the Green Climate Fund or else), the coordination and communication of actions and payments, and the incentivization of non-carbon benefits. While the needs are such that a substantial share in long-term funding will probably have to come from the private sector (as opposed to developed country budget commitments), in general, and privately driven carbon markets, in particular, there has been a noticeable shift in recent years away from discussing funding and finance options (through markets) to funding processing and disbursement (between Parties).288

Thus, a larger number of country proposals on sourcing and the use of markets go a few years back to the time prior to the Copenhagen COP in 2009,289 with recent submissions maintaining the focus of the Warsaw REDD+ Framework, while sometimes referring the question of a "REDD mechanism" to the question of NMM and FVA.290 In the following, we will group proposals made then and more recently by either countries, other stakeholders or in policy proposals, according to the conceptual approach and putting them in the context of the latest regulatory developments, in particular the Warsaw REDD+ Framework.

In line with the generally used terminology,291 we understand a REDD+ carbon market as a system that relies on the trading of units representing certain amounts of CO2eq emitted, reduced, or sequestered through REDD+ related activities and in which the unit price fluctuates according to supply and demand. We will treat both direct and indirect ("market-linked") carbon market funding, the later referring to (Government) funding from carbon market proceeds.

Credit Compliance Market Government-to-Government[292]

This option would build on international emissions trading (IET), established under the Kyoto Protocol, on the one hand, and bilateral initiatives such as the Norwegian campaigns with Indonesia, Brazil, Guyana and others or the German REDD Early Movers (REM) programme, on the other.293 It should be noted that IET strictly is a carbon market concept, where compliance units (Kyoto Protocol Assigned Amount Units) are traded to countries as compliance buyers, while the bilateral initiatives remain non-market Government-to-Government contributions, which nonetheless can test and prepare future market-based solutions (see Figure 2).

287 For the potential scope of market-based approaches or instruments see Picard, R. 2012, "Marked-based instruments for biodiversity and ecosystem services, a lexicon, Environmental Science and Policy, p. 19. The author favors an extensive perspective, however, and risks crossing the line to non-market based instruments; Picard, R. / Dooley, K. / Pistorius, T.,2012, Defining market-based approaches for REDD+, Policy Brief No. 16, Paris.

288 Cf. the the SBSTA work programme as summarized by the chairs Voigt and Sari at the 1st Workshop on Results-Based Finance of August 2013 United Nations, Framework Convention on Climate Change, UNFCC, 2013, 1st Workshop on result-based Finance. Bonn. (https://unfccc.int/files/methods/redd/coordination_of_support/application/pdf/1._co-chairs_opening.pdf) : "*The work programme will address options to achieve its objective, including (i) ways and means to transfer payments for results-based actions; (ii) ways to incentivize non-carbon benefits; (iii) ways to improve the coordination of results-based finance.*" In the country REDD Readiness Proposals, the matter of funding and finance sourcing is equally scarcely covered, see Williams, LG, 2013, Putting the Pieces Together for Good Governance of REDD+: An Analysis of 32 REDD+ Country Readiness Proposals, World Resources Institute.

289 Angelsen, A. / Brown, S. /Loisel, C. /Peskett, L. / Streck, Ch. / Zarin, D., 2009, Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment prepared for the Government of Norway, Meridian Institute; Dooley, K., 2008, An overview of selected REDD proposals, FERN Brussels.

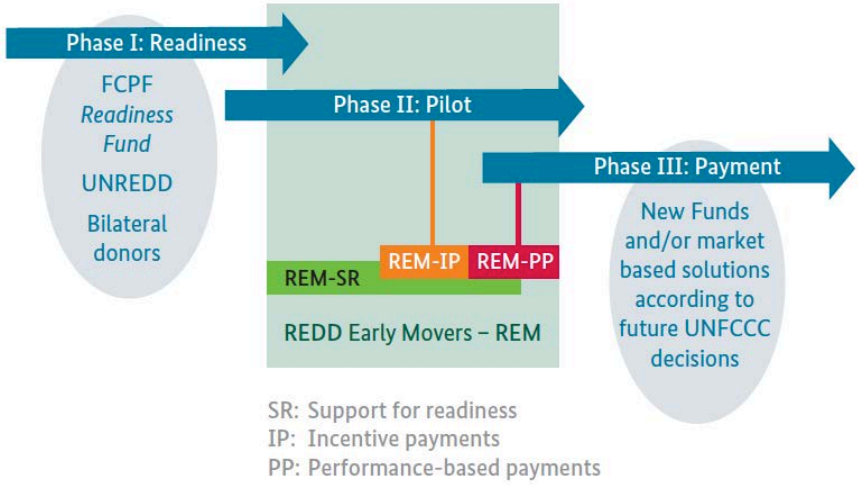
290 See the AWG LCA submissions on "Views on modalities and procedures for financing results-based actions and considering activities related to decision 1/CP.16, paragraphs 68-70 and 72", http://unfccc.int/resource/docs/2012/awglca15/eng/misc03.pdf (for the reference to NMM and FVA see, in particular, the submission of the US.

291 On the carbon market concept see von Unger, M. / Chiagas, T., Trading with Carbon: A Global Response to a Global Challenge, in: Wijen, F. / Zoeteman, K. / Pieters, J. / van Seters, P. (eds.), 2nd ed. 2012, A Handbook of Globalisation and Environmental Policy, Cheltenham, pp. 721 et seqq.; for a recent discussion at UNFCCC negotiation level see SBSTA, Item 13 (b) Market and non-market mechanisms under the Convention, Report on the workshop on non-market based approaches, FCCC/SBSTA/2013/INF. 12, paragraph 21, United Nations Framework Convention on Climate Change, UN FCCC, SBSTA/2013/INF., Subsidiary Body for Scientific and Technological Advice, 39th Session, Warsaw, 11-16 November, Report on the workhop on the new market-based mechanism.

292 O'Sullivan, R. / Streck, C. / Pearson, T. / Brown, S. / Gilbert, A., 2010, Engaging the Private Sector in the Potential Generation of Carbon Credits from REDD+, An Analysis of Issues, Glasgow/Washington.

293 See chapter 2 for the details of these bilateral campaigns.

Figure 14: REDD Early Movers Concept



Source Federal Ministry for Economic Cooperation and Development (BMZ) [294]

Under this option (expressed in Figure 3), verified emissions reductions – established on the basis of internationally agreed guidelines (e.g. in accordance with the ICA process) on accounting, reporting and verification, and measured against a national scenario – would translate into units ("credits") that are internationally registered and can be transacted (at least once)[295] and used by the buyer Government for compliance purposes under an international agreement. All payments made would be disbursed according to the benefit-sharing structure agreed for each transaction,[296] and payments (exceptions may exist for advance and interim payments) would be conditioned on the fulfilment of the country-specific REDD+ safeguards. The international registry would safeguard that credits are used for their purpose only and are not made subject to double-counting.

As a *sub-option*, public and private entities can be allowed to indirectly participate in this mechanism as buyers (with compliance obligation under the jurisdiction of the developed country Government) and/or as credit suppliers (on the side of the REDD+ implementing Government).

As another *sub-option*, sub-national crediting (at the jurisdictional level) can be agreed and may follow the approach taken by the German REM initiative.[297]

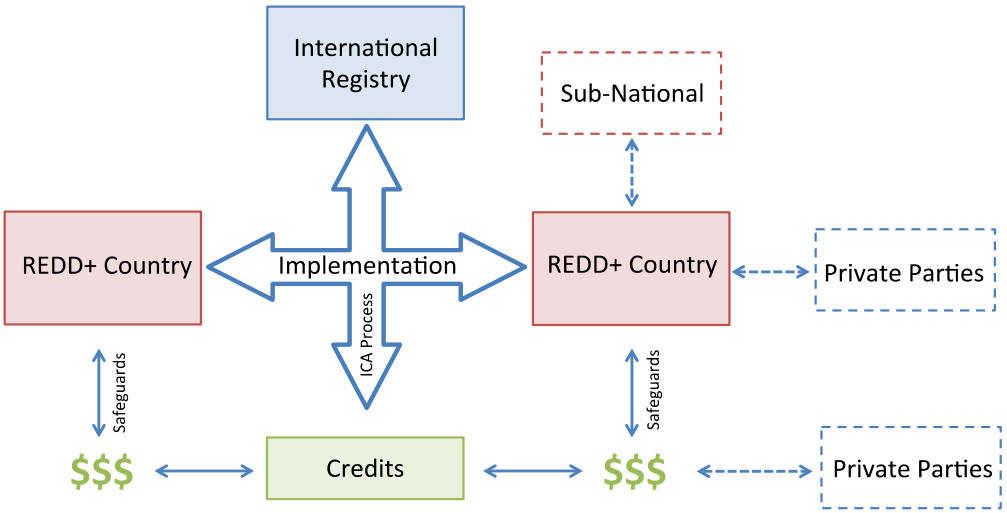
294 Federal Ministry for Economic Cooperation and Development (BMZ), REDD Early Movers (REM) – Rewarding pioneers in forest conservation, http://www.bmz.de/en/publications/topics/climate/FlyerREDD_lang.pdf.

295 This restriction is discussed, for instance, by Streck, C. / Harris, N. / Hayward, J. / Brown, S., 2013, Analysis of Approaches for REDD+ Verification, Climate Focus, Winrock International, Rainforest Alliance.

296 The model, thus, is similar to the widely practiced Green Investment Scheme component used in the context of IET.

297 See the REM/Accre example, discussed in chapter 2. Generally on the sub-national crediting option see O'Sullivan, R. / Streck, C. / Pearson,. T. / Brown, S. / Gilbert, A., 2010.

Figure 15: REDD+ Crediting Option



Source: Silvestrum VoF

Credit Compliance Market with Direct Private Sector Involvement[298]

Under this option, REDD activities would be credited on two levels, the country level, and the subnational (including project) level. At the subnational level, credits always cause a deduction or cancelation of credits; at the national level, such credits will cause a liability ("nesting")[299]. This mechanism option resembles the project-based mechanisms of the Kyoto Protocol, namely Joint Implementation (JI), as the country has to perform against a target, i.e. a national (emission) reference level, and has to guarantee the action at the sub-national (including project) level. Public and private entities would engage directly as investors, suppliers of sub-national (including project) level activities, and buyers.

Credits in this option are fully fungible and tradable with any other REDD+ credits (and potentially any credits, allowances or units issued under a future climate regime). The level of centralization is, thus, higher than in the Government-to-Government approach. REDD+ accounting at the national level needs to follow uniform and international binding rules (just as the accounting for AAUs and subsequent emissions under the Kyoto Protocol). The case for independent international verification at the sub-national (including project) level is equally strong. An international registry tracks all trades and transactions.

Provided a primary (international agreement) or secondary (national emissions trading systems) demand framework is set up, this option may offer the strongest long-term finance perspectives for REDD+; it comes, however, with a number of market challenges, including market flooding, price volatility, and upfront payment uncertainties.[300]

298 See Deheza, M. / Bellassen, V., 2012, Delivering REDD+ Incentives to Local Stakeholders: Lessons from Forest Carbon Frameworks in Developed Countries, Climate Report (CDC Climat), No. 35.

299 On the concept of "nesting" see Pedroni, L. / Dutschke, M. / Streck, C. / Porrua, M., 2009, "Creating incentives for avoiding further deforestation: the nested approach", Climate Policy, vol. 9 (2), p. 207.

300 For projections see Angelsen, A./Brown, S./Loisel, C./Peskett, L./Streck, C., 2009.

Peatlands and REDD+

As discussed in chapter 2 to this report, peatlands in their role as soil carbon pool are an intrinsic part, when it comes to REDD+ carbon accounting. Were REDD+ to include a carbon market mechanism, the accounting for peatlands within the geographic REDD+ boundaries would be a necessary component.

As noted in chapter 2, little attention has traditionally been given to the peculiar role of the soil carbon pool in REDD+, where initially the focus among the forest carbon pools was on the forest biomass. Only in Durban the explicit decision was taken that all significant carbon pools had to be included[301], which has been confirmed in the Warsaw REDD+ Framework[302]. Indeed substantial differences exist in the carbon approach between REDD+ on mineral soils and REDD+ on organic soils (peat swamp forests), both with respect to the total volume of the carbon pools per unit of area and with respect to the emission behaviour associated with land use and land use change (see Figure 4). Following the recent focus on the climate change relevance of peatlands, a "forest-bias" (actually a forest-biomass-bias) in international negotiations has been exposed and recommendations were made to expand the scope of REDD+ to non-forested (usually drained) peat swamps ("temporarily destocked forests") and to foresee 'rewetting' as an eligible REDD+ activity and to address the problem of continued emissions after the conversion from forested-land-to-un-forested-and-drained-land in both the forest reference levels and the MRV framework.[303] There is also increasing awareness of the need to develop on-the-ground methodologies to incorporate and/or highlight peatlands in REDD+.[304] Given the magnitude of carbon releases that go hand in hand with peatlands and, in particular, tropical peat swamps, it is finally argued to prioritize peatland protection within REDD+ by (1) implementing an immediate halt of peat forest conversion, (2) introducing no-go-zones for undisturbed peatlands, (3) revocating peat swamp concessions and shifting to mineral soils, (4) restoring drained and degraded peatlands, and (5) adopting paludicultures for severely degraded peat soils.[305] This recommendation chimes with a 2012 ADP-submission of Wetlands International, a non-governmental organization, in which it argues in favour of a "hotspot" or "key category" approach, under which action on peatlands would be prioritized across sectors and through a range of mechanisms, including REDD+ and NAMAs.[306]

It is noted, nonetheless, that the REDD+-cum-peatlands discourse still has a limited audience, and that few countries have yet committed to a dedicated peatland agenda (within REDD+ or beyond), Indonesia being a notable exception.[307]

301 Decision 12/CP.17: Guidance on systems for providing information on how safeguards are addressed and respected and modalities relating to forest reference emission levels and forest reference levels as referred to in decision 1/CP.16, Annex Guidelines for submissions of information on reference levels, par. C.

302 Decision -/CP.19 Modalities for measuring, reporting and verifying and decision -/CP.19 Modalities for national forest monitoring systems.

303 Wetlands International, Policy Recommendations to SBSTA on Peatlands & REDD, 2011, http://unfccc.int/resource/docs/2011/smsn/ngo/325.pdf.

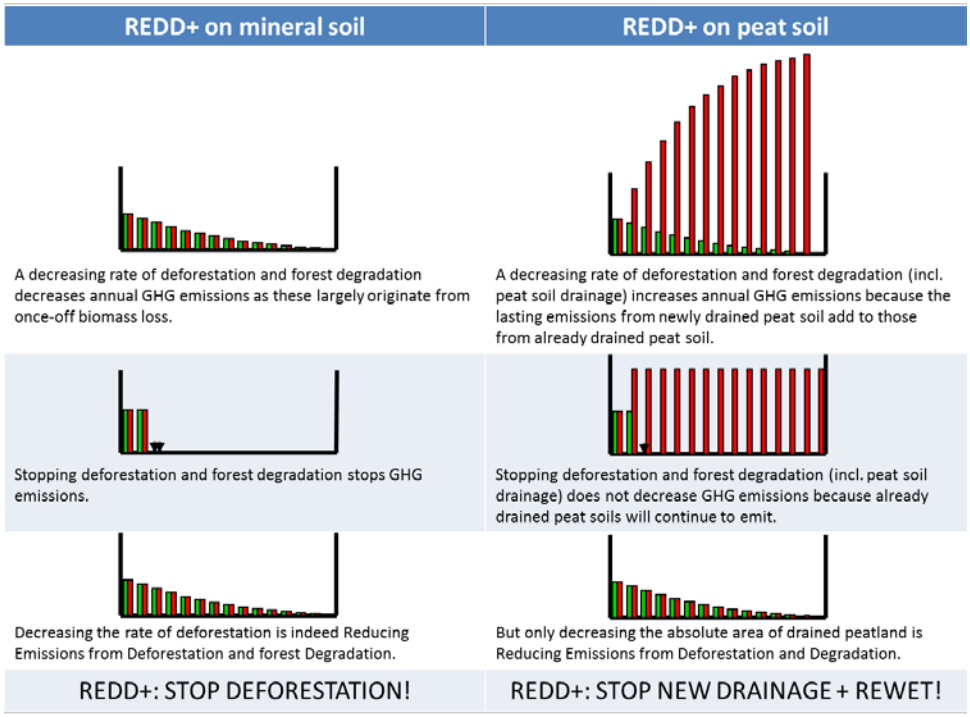
304 See, for instance, the United Nations Office for REDD+ Coordination in Indonesia (UNORCID), 2013, National Workshop on the Methodology for Measuring Emissions from Peatlands for REDD+, http://www.unorcid.org/index.php/media-centre/pressreleases/211-national-workshop-on-the-methodology-for-measuring-emissions-from-peatlands-for-redd.

305 Joosten, H. Reference levels for peat swamp forests, presentation at the UNFCCC on behalf of the Government of Belarus, https://unfccc.int/files/methods/redd/application/pdf/reference_levels_for_peatswamp_forests_final.pdf.

306 Wetlands International, July 2012, Submission on the future work of the Ad-hoc working group on the Durban Platform for Enhanced Action (ADP) of 27 July 2012, http://www.wetlands.org/LinkClick.aspx?fileticket=ksiE4%2bxr%2bT4%3d&tabid=56.

307 See, for instance, the joint submission: Indonesia and Australia. Reducing emissions from deforestation and forest degradation in developing countries. Joint submission to the AWG-LCA, AWG-KP and SBSTA, http://www.climatechange.gov.au/sites/climatechange/files/files/Joint-Indonesia-Australia-REDD-Submission.pdf.

Figure 16: The relation between land use change (ha/year, green bars) and total annual emissions (ton/year, red bars) when considering forest biomass (left) and peat soil (right) in REDD+.



Modified from: Wibisono et al. 2011[308]

4.3 Markets and the INDC Process

At the Conference of Warsaw (COP 19) countries agreed on a new format for expressing mitigation commitments. The ADP decision[309] of the year "invites all Parties to initiate or intensify domestic preparations for their intended nationally determined contributions, without prejudice to the legal nature of the contributions…" The *intended nationally determined contributions* (INDCs), which apply to both industrialized and developing countries, have since transformed into an elementary pillar in the negotiations of the Paris agreement. The Lima Call for Climate Action (COP 20)[310] reiterates the invitation to countries to communicate "fair and ambitious"[311] INDCs until 1 October 2015 at the latest; describes a post-Paris trajectory for the INDCs ("progression beyond the current undertaking")[312]; opens an adaptation window for the INDC format; and reconfirms that the INDC process addresses all countries, including least development countries (LDCs) and small island developing states (SIDS), for which however special rules apply.

INDCs are not regulatory instruments proper. They are non-definite ("intended"), wholly country-driven and bottom-up ("nationally determined") and voluntary ("contributions" rather than "commitments), and there are no firm guidelines on the form, structure and substance of INDCs. However, the Lima-ADP decision did outline[313] an indicative table of content – quantifiable information on reference point and base year, time frames and periods of implementation, scope and coverage,

308 Wibisono, I. / Silber, T. / Lubis, I.R. / Rais, D.S. / Suryadiputra, N. / Silvius, M.; Tol, S. & Joosten, H., 2011, Peatlands in Indonesia's National REDD+ Strategy. Bogor, Wetlands International Indonesia & Ede, Wetlands International Headquarters., Ede, p. 31 p.

309 Decision 1/CP.19.

310 Decision 1/CP.20.

311 Ibid., paragraph 14.

312 Ibid., paragraph 10.

313 Ibid., paragraph 14.

planning process and methodological approaches including for accounting of emissions and removals – and countries that have made submissions so far have mostly applied this list.

There are no direct links between INDCs and markets, but a range of countries do make the connection. This holds true for many developing countries, but also various industrialized ones.[314] Switzerland, for instance, announces that "carbon credits from international mechanisms will partly be used". Japan states that its Joint Crediting Mechanism will be "appropriately counted as Japan's contribution". Others, notably the European Union and the United States explicitly exclude them (US: "at this time"), but even here, at least in the EU context, discussions are ongoing whether to create an international credit window through the EU INDC.

While common crediting and accounting rules are missing, the INDC format may develop into a crediting umbrella for the NMM, the FVA, REDD+ or any other market instrument.

The INDCs are also notably open to addressing LULUCF emissions. Even though some submissions are vague on the matter – see, in particular, Russia's submission[315], but also the EU's[316] -- others are more forthright. Switzerland, for instance, excludes emissions/removals from forest land for its target but will account for its emissions from non-forest land explicitly including "wetlands". Iceland intends to "use wetland restoration as part of its climate efforts". Many developing countries make LULUCF significant pillars for their mitigation policy. Ethiopia, for instance, intends to reduce annual LULUCF emissions in the order of 130 mtCO2eq. Gabon, whose LULUCF emissions are more than 90% of the total, naturally puts particular emphasis on this sector for its 2025 indicative target. Major peat swamp countries, including Indonesia and Malaysia, have not yet submitted their INDCs, but an explicit focus on LULUCF, and perhaps peatlands, can be expected.

The INDC development, thus, allows to bring in context both market mechanisms and LULUCF/peatland-related emissions, and may trigger targeted action, whether in an international or in a bilateral dimension.

4.4 On the WaY to Paris and Beyond

The case for enhancing the place and role of forests and peatlands in the international climate architecture, thus, is much stronger today than it was in the days of the negotiation of the Kyoto Protocol or of the Marrakech Accords. The REDD+ policy history, in particular, has raised awareness for LULUCF and its opportunities across countries and stakeholders, and the adoption of the Warsaw REDD+ Framework is a powerful confirmation that REDD+, and with it hopefully the protection of carbon-rich peat swamps, will be a high priority under the 2015 architecture.[317]

However, the availability of incentive schemes and finance mechanisms for land use actions – be it on forests or on peatlands – is far from secured. The ADP works have not advanced much, and discussions on new mechanisms at the SBSTA level are stalled. Against this backdrop, what are then realistic options for negotiating Parties to agree on over the next two years, with a view to installing incentive and carbon market schemes for forest and peatland protection?

In the following, we will present a set of (not mutually exclusive) 'options' and 'mechanisms' that we deem both effective and *a priori* feasible. A clarification in terminology: 'Options' should not be understood as

[314] All country submissions are accessible at http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx.

[315] The submission formulates a target "subject to the maximum possible account of absorbing capacity of forests".

[316] The submission paraphrases a line from the European Council Conclusions of October 23/24: "Policy on how to include Land Use, Land Use Change and Forestry into the 2030 greenhouse gas mitigation framework will be established as soon as technical conditions allow and in any case before 2020".

317 The focus on REDD+ is obvious, while the issue of peatlands is still threatened to be absorbed by the broader, and arguably vaguer, concept of the "land sector", see, for instance, the Warsaw High-Level Panel organized by the COP 19 Presidency with the support of Finland (a peat rich nation itself) and the UNFCCC Secretariat, at which occasion peatlands – although being addressed by Indonesia, Finland, China and Belarus – did not stand out in any way, United Nations Climate Change Conference COP19/CMP9 Warsaw 2013, High Level Panel on the role of the land sector and forests at COP19/CMP9, http://www.cop19.gov.pl/latest-news/items/high-level-panel-on-the-role-of-the-land-sector-and-forests-at-cop19cmp9.

mutually exclusive alternatives. In fact the options that we propose consist of three types with different focus:

- Facilitating accounting (improving accounting framework, simplifying accountancy rules);
- Market-linked funding (earmarking proceeds, transaction levies); and
- Market-based implementation (Peat-CDM, Peat-REDD+, peat sectoral approach, peat hotspot approach).

All types may be applied simultaneously. It goes without saying that the overall goal – an overarching climate agreement by 2015 – remains challenging and that the fate for market and carbon instruments is all but secured. It is also fair to expect that the years following the Paris conference, more than the Paris Agreement itself, will be of consequence. At best, the Paris conference will create a treaty basis for mechanisms and will open the mechanism's scope for LULUCF interventions (including REDD+ and perhaps any peatland-related activities).

4.4.1 Improving the Accounting Framework in Development Countries (Option B-1)

The establishment of an enhanced reporting and accounting framework under the 2015 agreement is a priority. Above in chapter 3.1 we have outlined a number of key features, which ought to be taken into account for the purpose of creating a unified and harmonized accounting structure for both Annex I and Non-Annex-I countries. The guiding principle in a reformed accounting framework should be (i) to bring in view the entire accounting architecture, (ii) to identify the position where relevant fluxes can most easily be monitored, and (iii) to remove as much as possible complexities.

A unified and harmonized approach does not mean that all countries should assume quantified emission reduction limitation obligations (QUELROs) at this stage or later. Rather, any accounting, where and when it applies, should build consistently and coherently on the agreed structure for reporting. Furthermore, the reporting standards used may continue (for some time) to adhere to different levels of refinement. The stringent implementation of the recently introduced Biennial Update Reports (BURs) and International Consultation and Analysis (ICA) cycle, mirroring the Biennial Report (BR) and the International Assessment and Review (IAR) cycle for developed countries (see above chapter 2.1.1), but focusing on facilitative aspects and the sharing of views, should facilitate improved reporting globally in the mid- and long-term. The start of this cycle has seen some delays in that the majority of developing countries have missed the deadline of December 2014 for submission of their first BUR. There have already been two rounds of ICA screenings in 2015, however, and the BUR cycle may be overall strengthened (and participation widened) in the context of INDC development.

Notably, the ICA process is likely consolidate the reporting and verification of REDD+ related emissions (see above, chapter 2.2.3). It may ultimately have the potential to secure an institutional infrastructure and to pull towards both the harmonization of standards and an enabling framework for results-based finance.[318] This said, measuring, reporting, verification (MRV) and baseline setting should be strengthened in their focus on peatlands. For REDD+ reference (emissions) levels and REDD+ monitoring this means that all peat soils in a given country should be included in the baseline and should be tracked over the course of the (significant) emissions lifeline. Biomass and soil carbon losses must equally be fully accounted for in each land-use and land-conversion scenario (including first-generation biofuel production).

4.4.2 Broadening the Scope of LULUCF within the CDM (Option B-2)

After starting offsetting incentives for biofuel plantations at the cost of undisturbed peatlands, the CDM has cautiously opened towards considerations of peatland protection.[319] Yet, the mechanism continues with its narrow restriction in scope concerning LULUCF as a whole. Debate is nonetheless on-going whether the

318 Streck, C. / Harris, N. / Hayward, J. / Brown, S., 2013.

319 See the revision of the methodology ACM0017 adopted during the 56th session of the Executive Board: It is no longer applicable for plantations on peatlands, see Report of the Executive Board for the 56th session, paragraph 25 (d) and Annex 8.

CDM could be extended to other LULUCF activities than A/R and whether there are constructive solutions to the (non-) permanence issue. SBSTA requested in November 2013 the UNFCCC Secretariat to prepare a technical option paper by 26 March 2014.[320] The paper was issued on 23 April 2014.[321] A number of countries, among them Chile[322], Colombia,[323] Indonesia,[324] and Nepal[325], argue for the incorporation of additional LULUCF activities in the scope of the CDM[326] and the replacement of temporary credits by permanent credits in exchange of establishing non-permanence buffers, country guarantees, insurance systems, or a combination of multiple approaches for LULUCF activities in general.[327] Indonesia specifically proposes to incorporate peatland rewetting and restoration in the CDM:[328]

"Human impacts on coastal and freshwater wetlands and peatlands are major sources of GHG emissions. On the other hand, wetlands and peatland restoration present major opportunities for conserving critical ecosystems and preventing large potential future GHG emissions. Restoration of coastal and freshwater wetlands, and rewetting and restoration of peatlands (include [sic] improved management practices) in organic soils, provide [the] best opportunity… that significant pools and activities should not be excluded."

The country is confident that the methodological aspects of such extension can be tackled on the basis of the IPCC 2013 Supplement to the 2006 AFOLU Guidelines and the "wetland restoration and peatland rewetting" experience gained under voluntary standards. It finds support from within civil society.[329]

A "CDM+" approach – the "+" indicating the extension to other LULUCF activities including peatland rewetting and restoration, and potentially peatland conservation – would require only modest changes to the existing regulatory; moreover, it may turn into a realistic scenario, given that the new mechanisms discussions are stalled and that provisionally new demand for CDM credits could be triggered by the ADP decision in Warsaw ("[inviting] Parties to promote the voluntary cancellation of certified emission reductions, without double-counting, as a means of closing the pre-2020 ambition gap").[330] This said, at the time of writing, the CER prices remained depressed, and a positive trend was not in sight. The Conference of Lima did also not help to settle the regulatory aspects. After intense discussions, the CMP limited itself to issue a research request to the CDM Executive Board concerning the applicability of CDM rules to "project activities involving

320 United Nations Framework Convention on Climate Change, UN FCCC, SBSTA/2013/INF., Subsidiary Body for Scientific and Technological Advice, 39th Session, Warsaw, 11-16 November, Report on the workhop on the new market-based mechanism.

321 UNFCCC Secretariat, Options for possible additional land-use, land-use change and forestry activities and alternative approaches to addressing the risk of non-permanence under the clean development mechanism, FCCC/TP/2014/2.

322 United Nations Framework Convention on Climate Change, UN FCCC, SBSTA/2013/INF., Subsidiary Body for Scientific and Technological Advice, 39th Session, Warsaw, 11-16 November, Report on the workhop on the new market-based mechanism, (Chile suggests the inclusion into the CDM of forest management, improved cropping systems, agroforestry systems, silvopastoral systems, and re-vegetation activities in degraded lands).

323 UNFCC, China's Submission on the Issues Related to the Agenda Item on LULUCF under SABSTA, http://unfccc.int/files/methods/lulucf/application/pdf/20130926_subm_china_lulucf_sbsta39.pdf.

324 UNFCC, Submission by Indonesia, http://unfccc.int/files/methods/redd/submissions/application/pdf/20131112_subm_indonesia_lulucf_call_no_8_non-permanence_sbsta39.pdf (Indonesia supports the inclusion of cropland management including agroforestry systems, wetland drainage and rewetting, and revegetation activities in bare, degraded, karst, and settlement lands).

325 UNFCC, Submission by Nepal on behalf of the Least Developed Countries (LDCs) on the SBSTA agenda item relating to methodological issues under the Kyoto Protocol: Land Use, Land Use Change and Forestry under Article 3, paragraphs 3 and 4, of the Kyoto Protocol and under the Clean Development Mechanism, http://unfccc.int/files/methods/redd/submissions/application/pdf/20131018_subm_nepal_ldc_lulucf_call_no_8_sbsta39.pdf.

326 China opposes, however, see UNFCC, China's Submission on the Issues Related to the Agenda Item on LULUCF under SABSTA, http://unfccc.int/files/methods/lulucf/application/pdf/20130926_subm_china_lulucf_sbsta39.pdf.

327 For an overview of permanence options as proposed by countries see UNFCCC Secretariat; Parker et. al., 2014.

328 Ibid.

329 See the submission of Wetlands International concerning methodological issues under the Kyoto Protocol – Land use, land-use change and forestry under Article 3, paragraphs 3 and 4, of the Kyoto Protocol and under the clean development mechanism (29 August 2013), Methodological issues under the Kyoto Protocol – Land use, land-use change and forestry under Article 3, paragraphs 3 and 4, of the Kyoto Protocol and under the clean development mechanism.

330 Decision 1/COP.19, paragraph 5 (c).

revegtation… including in areas with agroforestry and silvopastoral practices".[331] These project categories are a long way from peatland-related protection and restoration activities.

4.4.3 Peat-Focused REDD+ Implementation (Option B-3)

This approach would include a peat-focused REDD+ programme, possibly in formal separation from REDD+ implementation on mineral soil.[332] It would build on the concept of results-based finance and work toward a full-fledged REDD+ crediting mechanism, giving rise to Government-to-Government transactions or involving public and private entities, on the one hand, and subnational (including project level) activities, on the other (see for the building options above).

Peatland conservation and restoration activities would come into a (more) peat-focused REDD+ mechanism on a number of levels:

1. The explicit recognition that peat swamp forest conservation and restoration are eligible REDD+ activities[333];
2. The unconditional exclusion from REDD+ implementation of activities that cause the drainage and degradation of peat soils;
3. The inclusion of peatlands deforested after 1990 within REDD+ boundaries to make them accessible for REDD+ activities (peat forest restoration);
4. The definition of forest (emissions) reference levels on the basis of the conversion rate forested-to-non-forested/degraded land *and* the (continued) land use;
5. Special attention to further developing peat soil-related techniques for GHG flux measurement, reporting and verification during REDD+ readiness and throughout implementation of the mechanism, and to building a thorough peatland monitoring infrastructure;
6. The detailed and spatial explicit identification of peatlands/organic soils in all tropical countries.

The REDD+/PEAT mechanism can be fully built within the Warsaw REDD+ Framework and its MRV, reference level and institutional settings. Demand would be triggered through REDD+/PEAT compliance country quotas (for developed countries and perhaps emerging economies) or comprehensive national targets, the (buying) private sector being reached through national or supranational trading schemes, in the form provided by the EU ETS Linking Directive[334] or through other linkages (discussed below in chapter 4.4). A REDD+/ PEAT compliance market aside of other international emissions trading (dual market) would create safeguards against market flooding (given the carbon intensity of peat not a wholly unlikely scenario), and

[331] Decision 7/CMP.10, paragraph 1.

332 Using the option of Decision -/CP.19 Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels and assumptions used and whether the forest reference emission levels and/or forest reference levels of using forest reference emission levels and/or forest reference levels that "cover less than the entire national territory of forest area";

333 This follows implicitly from the provision of Decision 12/CP.17 Guidance on systems for providing information on how safeguards are addressed and respected and modalities relating to forest reference emission levels and forest reference levels as referred to in decision 1/CP.16 (Annex Guidelines for submissions of information on reference levels, par. C) that "significant pools … should not be excluded". In peat swamp forests, deforestation and forest degradation is always associated with direct or indirect drainage (Dommain, R. / Couwenberg, J. / Joosten H., 2010, "Hydrological self-regulation of domed peatlands in south-east Asia and consequences for conservation and restoration", Mires and Peat, vol. 6, p. 1–17) and significant emissions from the drained peat soil pool (Couwenberg, J. / Dommain, R. / Joosten, H., 2010, "Greenhouse gas fluxes from tropical peatlands in South-East Asia", Global Change Biology, vol. 16, p. 1715–1732).

334 Directive 2004/101/EC of the European Parliament and of the Council of 27 October, amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms, Official Journal (European Union) L 338/18 (13 November 2004), as most recently revised through Directive 2009/29/EC of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community the Directive has been subject to multiple revisions since, Official Journal (European Union) L 140/63 of 5 June 2009.

through differentiated price-setting it could contribute to a more even spread of REDD+ activities over forest types with strongly divergent carbon stocks.[335]

Participation in the REDD+/PEAT mechanism would be voluntary with countries choosing non-market-based approaches being able to rely on other funding and finance sources (through the Green Climate Fund and other).

4.4.4 A Sectoral Approach to Peatlands: Peat Conservation and Restoration under NMM and FVA (Option B-4)

Under the option to establish a sectoral approach for peatlands within NMM and FVA, a country's peatland (or wetland) sector as a whole would come into focus, i.e. forested and non-forested peat soils, drained but forested peat soils, peat soils used for plantations, crops or grazing, and peat soils used for non-agricultural purposes. Depending on the mechanism's choice – to allow for sector-wide interventions only, to permit project- or programme-based interventions, or to foresee an integrated approach, perhaps in the form of a nesting arrangement – peat interventions would be implemented and credited. Credits could be used directly for compliance under the 2015 agreement by Governments and/or would be made fungible with other credit regimes under the FVA.

Given the peculiarities of emission reductions from peatland conservation and restoration and the strong case that in the framework of the CDM is being made against the issuance of temporary credits , the generation of permanent credits, which are made fully fungible with other NMM credits, should be envisaged. If emission reduction credits are not considered permanent *per se* due to the risk of stock loss (see above, chapter 3.2.2 above), a buffer or insurance approach may be chosen – following the model provided by the VCS or using a simpler form – and this may be harmonized with the one identified for REDD+. As noted above, the larger the sector coverage, the smaller will be the need for stock loss adjustment, as local stock loss events will be absorbed by larger sectoral trends.

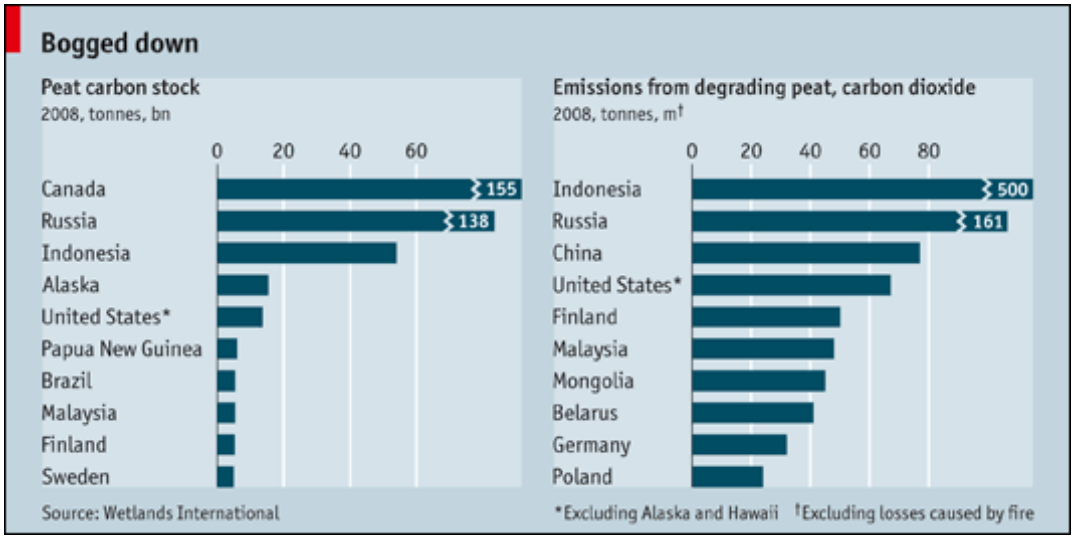
4.4.5 Peat Hot Spot Framework / A Hot Spot Mechanism for Peatlands (Option B-5)

The hot spot focused option would leave behind the all-country-all-in-mechanism approach and would instead aim at establishing a framework of peat-rich and peat emissions-rich nations in both developed and developing countries. Notably, peatlands are concentrated in a comparably small number of countries. Twelve countries (among them three EU Member States) account for 80% of peatland related emissions worldwide. 36 countries (of which 11 are in the EU+Iceland) account for 95% of those emissions (for a non-exclusive list see Table 1).[336] This framework would be built on three pillars: (1) accounting for emissions, (2) conservation and restoration, and (3) compensation. The compensation pillar would be structured on two levels: (a) public funding, mostly provided by the rich participating countries to poorer participating countries for the establishment of a peatland accounting and monitoring framework as well as of a policy framework to implement peatlands conservation and restoration; and (b) a peat emissions trading scheme with each participating country receiving an allowance quota and the overall scheme being open to project-based crediting for rewetting activities.

335 For various strategies against market flooding in the REDD+ context (without reference to peat) see the Meridian REDD+ Option Assessment, 2010 (footnote 289).

336 Joosten, H. /Barthelmes, A. / Couwenberg, J. / Tegetmeyer, C. / Risager, M., 2014, Peatlands and climate in a Ramsar context: a Nordic-Baltic perspective. (Forthcoming).

Figure 17: Peat-intensive countries and emission-intensive countries.



Source: The Economis and Wetlands International

The allowance and compliance quota should come with a threshold substantially above business-as-usual and otherwise balance economic and political considerations such as the development needs of poorer countries, but also abatement and opportunity costs. Yet, the general idea is that each participating country receives a peat emissions quota and both trading and crediting is possible across participating countries. The crediting instrument itself could increase the environmental benefit through the introduction of multiplying factors (e.g. 0,3), while allowing for higher crediting quotas (e.g. 0,7) for the avoidance of hot spot activities and/or particular biodiversity-rich interventions.

The Peat Hot Spot Framework may be established within the 2015 agreement or as a separate protocol under the UNFCCC or initially outside the Convention; however, two design aspects seem crucial: First, the accounting framework should be coherent with the accounting framework under the 2015 agreement and the Convention; and conversely, second, the peat allowance regime shall have no bearing on any future quantified emission limitation and reduction obligations (QUELRO) or the question to what extent participating countries undertake commitments or contributions under the broader climate regime. The idea is that the regimes are convertible, but that the intrinsically complex and politically charged question of economy-wide targets is by all means avoided.

If established outside the 2015 agreement or the Convention, the Peat Hot Spot Framework may still rely on institutional services provided by the UNFCCC, provided the Parties to the Convention agree.

This Peat Hot Spot Framework may draw from a number of successful REDD+ initiatives including UN REDD and the FCPF, but also from separate institutions such as the Montreal Protocol337 (especially for the public funding provisions) and the World-Wide Action on Black Carbon, Methane and Other Short-Lived Pollutants of the Climate and Clean Air Coalition338. It may also coordinate supportive measure in the field of agriculture, trade and sustainable supply chains.

4.5 The EU Perspective on Bilateral Agreements (Options B-6.1 to B-6.3)

We see at this stage three realistic options for the negotiation of bilateral agreements, *first* a bilateral LU-LUCF-based carbon accounting partnership, *second* a trial ETS window for LULUCF, and *third*, a non-ETS

337 Montreal Protocol on Substances that Deplete the Ozone Layer (1987, for an updated version see United Nations Environment Programme Ozone Secretariat (UNEP), The Montreal Protocol on Substances that Deplete the Ozone Layer, http://ozone.unep.org/new_site/en/Treaties/treaties_decisions-hb.php?sec_id=5).

338 Climate and Clean Air Coalition (CCAC), Definitions, http://www.unep.org/ccac/Short-LivedClimatePollutants/Definitions/tabid/130285/Default.aspx.

LULUCF crediting scheme. Only one of these options falls *strictu sensu* in the scope of Article 11 (5) EU ETS and Article 5 (2) Effort Sharing Decision (ESD). Yet, given the high (market-demand) barriers that exist for establishing EU-ETS-based sectoral crediting mechanisms, it makes sense to contemplate bilateral options beyond the ETS-based ones proper. In the following, we will outline a number of key characteristics for each option.

Bilateral EU-ETS-based Carbon Accounting Partnership (Option B-6.1)

This option would not involve the crediting of any units and not a direct financial incentive scheme. Rather, it would expand on the work under way at the EU level to establish a robust monitoring and reporting framework for LULUCF-related emissions. As discussed in more detail in chapter 2 above, the EU has recently adopted an accounting framework for the greenhouse gas emissions and removals from the LULUCF sector including an information system for Member States on their LULUCF actions to limit or reduce emissions, and to maintain or increase removals.[339] In the recitals of the decision, the legislator noted that the establishment of a fitting accounting and information framework is a "first step" toward "the inclusion of the LULUCF sector in the Union's emission reduction commitment", whilst "ensuring the permanence and environmental integrity" of the sector's contribution. The upcoming ESD revision – necessary to respond to the new targets under the 2030 climate and energy package – presents a good opportunity to move ahead on this agenda.

Through a bilateral engagement between the EU and one or more (peat-rich) developing countries, the EU's emerging LULUCF accounting framework – defining categories and coverage of activities, gross-net accounting for some (afforestation, reforestation, deforestation), net-net accounting for others (including wetland drainage and rewetting), information to be reported, exclusion criteria for non-anthropogenic emissions, etc. – could spread, and common experience with the matter could be gained. Such approach will not in itself solve all the technical issues the European Union maintains to raise should it (ever) come to LULUCF based carbon crediting – permanence and liability, monitoring and MRV – but it will provide a transparent framework, which can facilitate the preparation, and mutual understanding, of reference levels and – this seems feasible – robust monitoring and reporting systems. This will be half the way towards addressing those issues. Any bilateral engagement in this field will most likely also produce robust research cooperation and, ultimately, an atmosphere of trust regarding the long-term countrywide tracking of emissions and removals. Once that is reached, sectoral crediting or trading may become a lot simpler, indeed.

Bilateral engagements on carbon accounting are not new to the EU. On several occasions the Union has helped new Member States integrate in the EU system, and it is currently undertaking a bilateral mainstreaming effort with Turkey, also addressing inventory capacities, legal and institutional matters.[340] A similar effort aiming at LULUCF accounting in one or more developing countries – preferably ones with decent layers of peat – appears a low-effort, high-impact intervention.

Option 2: LULUCF and Emissions Trading: Trial Schemes (Option B-6.2)

The Second Emissions Trading Market of the EU (ESD)

Next to the EU Emissions Trading Scheme Directive (EU ETS Directive)[1], the Effort Sharing Decision (ESD)[1] is a central element of the EU's Energy Package of 2009, imposing binding targets for Member States greenhouse gas (GHG) emissions from a range of activities, including from transport, buildings, agriculture, and waste (amounting to 40% of the EU's total emissions).
The individual emission reduction targets differ greatly ranging from + 20% (Bulgaria) to – 20% (Denmark, Ireland and Luxembourg). The overall target incorporated in the ESD is 10% below 2005

339 Decision No. 529/2013/EU of the European Parliament and of the Council of 21 May 2013 on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land-use, land-use change and forestry and on information concerning actions relating to those activities, Official Journal (EU) L 165/80 (18 June 2013).

340 See External Aid Program, Technical Assistance for support to mechanism for monitoring Turkey's greenhouse gas emissions, 2013/S 201-347005, http://ted.europa.eu/udl?uri=TED%3ANOTICE%3A347005-2013%3ATEXT%3AEN%3AHTML.

The Second Emissions Trading Market of the EU (ESD)

levels. This figure is notably lower than the 21% reduction collectively required for sectors covered by the EU ETS.

There are a number of **flexibility instruments** for Member States to reach their targets. *First*, they can bank or borrow a portion of their annual emissions allocations (AEAs) between years. *Second*, they may purchase a portion of their AEA from other Member States. *Third*, they may purchase (within limits) international credits, i.e. CERs and ERUs from pre-2012 registered projects or LDCs and any credits created under bilateral agreements concluded by the EU with third (non-EU) countries. Notably, unlike the EU ETS, temporary and long-term CERs from afforestation and reforestation projects under the CDM may also be used, though these need to be replaced upon expiry.

This option would be developed within the EU carbon trading environment; to strengthen the (political) feasibility, the Government-to-Government trading environment, i.e. the environment based on the Effort Sharing Decision (ESD), should be prioritized over the EU ETS, however. The ESD already allows for a broader scope of eligible international credits than the EU ETS (temporary A/R credits). Then, the risk of market distortion on a number of factors, including volatility of carbon prices, equal treatment of market participants, comparability of efforts and units, and longevity of, and liability for, credits, is less pronounced. The reason is that the ESD market is strictly Government-based, less competitive, and reflecting the public mandate (as opposed to business interests to be taken into account in the EU ETS environment). The ESD trading environment is altogether more balanced against other Government-policy objectives such as international funding priorities (for REDD+ and peatlands) and towards policy trials.

Accessing the ESD environment is also coherent in that it serves a default purpose, i.e. to cover those sectors that are not suitable for EU ETS coverage given the diversity and size of sources, the challenges of MRV, or the interests to consumers. Market demand within the ESD is not immense, with most countries over-achieving their 2020 targets easily.[341] For a number of countries (Spain, Belgium, Netherlands, Austria, Denmark, Italy, and Luxembourg), however, a deficit is projected, and while these countries are given the opportunity to close the gap by purchasing quotas of annual emissions allocations ("AEAs") from other Member States, they may as well purchase international credits (or a combination of both, see textbox).

A LULUCF crediting trial would come into play within the international credit purchase window. While the current quota per Member State amount to 3% or (in some cases 4%) of that Member State's emissions in 2005, it is conceivable that these quota be increased to allow for a substantial transaction amount of REDD+ and/or peatland related credits. Yet, such increase would require a legislative revision of the ESD, while the conclusion of a bilateral agreement and the identification of compliance grade credits under such an agreement would not; so the natural priority should lie on negotiating a bilateral agreement before considering legislative changes to boost the potential transaction amounts.

As to the content of any bilateral agreement: It should set a national (or sub-national) reference level (relying on a significant own contribution), monitoring system MRV framework, safeguards and a benefit sharing structure (with a high share of benefits going to the local population and indigenous people), ideally in line with, and using the process of, the international framework agreed for REDD+ under the UNFCCC, UN REDD and the FCPF. The institutional framework would be built between the EU Commission, on the one hand, and the target country-Government, on the other. The EU Commission may delegate its responsibility to a particular Member State. To facilitate fast trial action and transaction costs, certain aspects may be provisionally simplified, as it is done e.g. by today's German REDD Early Movers programme (see above) or the Amazon Fund (see chapter 2). For instance, carbon stock calculations may rely on IPCC-inspired proxy values (such as 1 hectare of tropical forest = 100 t C).

341 Report from the European Commission, 2013, Report from the Commission to the European Parliament and the Council: Progress Towards Achieving the Kyoto and EU 2020 Objectives, Brussels, p. 12.

The price may be set within the bilateral agreement (ideally using a cost-based approach) or may be delegated to the actual purchase transactions.

The issue of permanence and liability could be addressed according to the following alternatives:

- **Alternative 1: Permanence Approach**

  This alternative would rely on the distinction between emission reductions – the "REDD" part in REDD+ and most actions under peatland conservation and restoration – which would be understood as permanent (and a stock loss event as *a priori* non-attributable to a previous emission reduction activity), on the one hand, and removals – the "+" in REDD+ – which would be understood as non-permanent and whose continuity needs to be secured through insurance or buffer models (e.g. for each compliance credit purchased, the purchasing Member States buys an additional 0.5 credit that is kept in an insurance account). Note that any negative deviations from a country's (or a region's) forest or peatland reference level – the country (or region) removes more forests or drains more peatlands than permitted under the reference level agreed – need not go unsanctioned in this model. Rather, any such deviations should lead to an immediate suspension of any pending transactions and the imposition of a grace period, in which the partner country can remedy the situation. If the remedy fails, the engagement will be resolved. It is understood, however, that in this alternative any such suspension or termination will have no impact on the validity of all credits previously issued.

- **Alternative 2: Non-Permanence Approach**

  This approach would follow the practice to treat all LULUCF interventions as non-permanent. In that case, all credits – for REDD+ and for peatland conservation and restoration – will need to be hedged against the risk of non-permanence. This could be done through feeding a reserve credit fund (raised from a fixed share of credits purchased) or the issuance of temporary credits, for whose replacement at the compliance level the purchasing Member State remains liable.

Non-ETS Crediting Scheme (Option B-6.3)

This option would retain the crediting and trading approach, but it would link to policy areas outside emissions trading proper. A range of EU-regulatory frameworks aim at creating a climate and mitigation (emission reduction) benefit – regulations on fuel standards, biofuels energy efficiency, cross-compliance in agriculture, etc. – and often create compliance obligations or incentives for business to achieve a certain output. Where such output is commensurate with REDD+ or peatland-based carbon crediting, i.e. the obligation or incentive benefit can be expressed in tCO2eq, business may be given flexibility (within limits) to achieve compliance or the relevant incentive thresholds by either *primary* means (achieving a certain fuel standard, sourcing biofuels, complying with retrofit quotas, etc.) or s*econdary* means (REDD+ credits or peat credits). To reinforce and strengthen the environmental benefit – and to adjust any stark differences in abatement costs – the crediting option may be subject to multipliers (e.g. credits must achieve double the reduction target than through primary compliance). The crediting mechanism would rely on a bilateral agreement between the EU and a target country, but this would be essentially negotiated outside Article 11 (5) EU ETS. This option would have the opportunity of ensuring long-term finance for REDD+, giving market flexibility to business, safeguarding environmental integrity, and lastly releasing pressure from the over-supplied carbon markets proper.

In an example: The European Union Directive on the promotion of the use of energy from renewable sources (EC 28/2009) ("RED") outlines the methodology for reaching a Union-wide target to source 20% of its energy from renewable sources and to achieve an all Member States minimum share of 10% biofuels in transport petrol and diesel consumption. The European Commission recently proposed to freeze the share of '1st generation biofuels' (i.e. biofuels from food crops) at 2011 levels (5% of the energy consumption in the transport sector).[342] In addition, fuel suppliers will be under the obligation to report on the entire biofuel lifecycle

342 EC (2012) Proposal for amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources, European Commission, available at: European Com-

"including the estimated indirect land-use change emissions" in accordance with pre-established reporting guidelines and emission factors per crop.[343] This happened in response to widespread critique that the Union's biofuel demand would increase the pressure on land and environment and produce indirect emissions. However, accounting for indirect emissions is only halfway (and an obvious example of political compromise): Indirect emissions continue to be disregarded for the comparative greenhouse gas analysis with fossil fuels, which needs to prove minimum emission reduction outputs ("carbon savings") in order to be eligible under the directive. As the biofuel target translates into quantifiable amounts of emission reductions,[344] and indirect emissions from land-changes are equally measured in tonnes of CO_2eq, we see a feasible option to install a REDD+ and/or peatland related crediting instrument into this regulatory environment and to reduce the cost exposure for industry and consumers significantly, while meeting stricter emission reduction and sustainability targets: The indirect GHG emissions resulting from land conversion for biofuel production could directly be addressed through imposing an obligation on fuel suppliers to compensate for the indirect emissions that they report (and which would be adequately verified) with REDD+ and/or peatland related credits. This would allow in the short term that all indirect emissions are fully redressed. It would also allow in the mid- and long term – through the stimulation of enhanced REDD+ and peatland related intervention – that indirect emissions and damages to tropical forests and peat swamps be brought down to a halt.

mission, 2012, Proposal for a Directive of the European Parliament and of the Council, Brussels. The EU Parliament, in its first reading resolution, proposed to increase the 1st generation biofuel target to 6% of total transport fuels, see Resolution of 11 September 2013. A compromise text has also been agreed on by the Council (see Council of the European Union, Document No. 7550/14 of 13 June 2014, http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/trans/143191.pdf .

343 Ibid.

344 The Member States have to calculate the greenhouse gas emission saving from the use of biofuels and bio liquids and report to the European Commission, see Article 19 of the Renewable Energy Directive.

5 Evaluation of Options and final Recommendations

This status report concludes Phase 4 of the study, which consists of an assessment of the policy options developed in chapter 4 and chapter 5 against a range of criteria including environmental integrity and political viability (3.). We will subsequently prioritize actions within the option pool and support a final list of selected options with concrete recommendations regarding their negotiation at the EU and at the international level (4.).

5.1 Option Evaluation

For the evaluation of the policy options developed and discussed in chapters 3 and 4, we have applied the following criteria:

- Environmental Integrity: The criterion relates to process as much as to substance ('a tonne is a tonne'). It seeks to identify to what extent the specific policy option is capable of delivering real, measurable and additional GHG emission reductions, and how robust, transparent and effective the procedural oversight is with a view to securing that the respective emission reductions are delivered in full and on time. Environmental Integrity refers to both GHG emission reductions and biodiversity aspects.
- Fairness and Inclusiveness: The criterion relates to (i) formal requirements around the openness of the respective policies to participants at the country level as well as at the subnational and individual level; and (ii) normative aspects of fairness and inclusiveness such as respect for the 'polluter pays' principle, providing equal opportunities (through capacity-building, preferential treatment and other), and responding to the principle of common but differentiated responsibilities.
- Institutional Governance and Transaction Costs: The criterion relates to the capacity of stakeholders and the cost factor of establishing and maintaining the policy option. Specific attention is given to comparing institutional variations within the policy option concerned (e.g. concerning the use of existing structures as opposed to building structures from scratch).
- Effectiveness (including Market Considerations): The criterion relates to the capacity of a specific policy option to yield a substantial climate change mitigation result. Every tonne of additional emission reductions counts, yet policy options are sought that help achieve reductions that (for industrial countries) are in the range of 30% or 40% below 1990 emissions by 2030 and 80% by 2050. Specific attention thus is given to options that tap into large-scale reduction potential. At the same time, for measures that involve the potential to create large amounts of creditable units, market rebounce effects need to be taken into account (credit oversupply or 'market flooding', in particular).
- Political viability: The criterion compares the policy option concerned with the level of discussion (and agreement) among countries and evaluates the political chances of the respective option to be 'negotiable' on the road to COP 21 in Paris at the end of 2015.

The mapping exercise is a broad one allowing for only three categories: "low", "medium", and "high" (highlighted with the colours shown in fig.1). A policy option receives the assessment "low" for a particular criterion, when its performance under it is of a poor or doubtful quality; it receives the assessment "medium", when it proves moderately successful on the criterion or when the probability of success is average; and it receives a "high" assessment, when it meets the key characters of a particular criterion in full or when its performance or chances of success are altogether very high.

Strong	Medium	Weak

Table 6: Measuring of criteria (three categories), with colours.

Measure	Environmental Integrity Climate	I Biodiversity	Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability
CM, GM and WDR obligatory accounting categories	Extends substantially the accounting focus for land-use related emissions	Direct and indirect improvements through low-carbon trajectory. Actions to reduce emissions, i.e. rewetting, will often improve biodiversity on site (wetland species) and off site (via decreased nitrate emissions to the surface water)	Will depend on which countries are subject to accounting. If only existing Annex I countries, important opportunities in emerging economies may be missed. (All countries should improve the reporting framework to prepare better accounting in the future)	The institutional challenges (technology, human resources, oversight) are high, and a phased-in approach may be suitable. The EU is testing obligatory CM and GM. By 2020 proven country techniques should be available.	Considerable indirect mitigation benefit; groundwork is laid for future action (including for a future market)	Today's gaps in accounting of land-used based emissions and the importance to tackle LULUCF and agriculture as mitigation source are understood as a problem, and discussions to improve the accounting framework are ongoing, but developments have so far been minimal. The decision in 2011 to allow for optional WDR accounting has been hailed as a major improvement, but mandatory ac-

						counting plays in another league. A phased-in system (gradual mandate) may still be feasible. Recognition of very large opportunities in land sector may boost rapid policy development.
Report and account for land-use based emissions comprehensively and converge reporting and accounting over time	Will put land-use based emissions in focus as a whole including in its interdependencies (e.g. forest and agriculture or peatland and agriculture)	Indirect value for biodiversity protection and improvement is considered high	Will bring land-use based emissions at par with other emission sources. Approach addresses all countries and is all-inclusive. Note that all countries should report but not all need to account yet towards a target	The institutional challenges for accurate reporting and accounting of land-use based emissions are still high, but are expected to become ever more manageable at acceptable costs.	No immediate effect, but long-term viability of mitigation action will be improved Comprehensive overview will allow for effective choice in mitigation measure.	Agreement on a more comprehensive reporting approach is feasible. Full convergence of accounting and reporting more doubtful. Heritage aspects may complicate accounting (punishment for activities that took place long ago). Phasing in/out may be a wayforward.
Account for the biomass	Treats the land sector	Neutral.	Treats the land sector	Lowers today's	No direct effect on	This option is newly

sink in Forest Management only via soil and dead wood pools excluding the above-ground biomass	in line with other sectors that need to remove their emissions (here fuel, fertilizers etc.), when delivering its products (HWP). Removes uncertainties in removal calculation. Removes permanence discussion.		in line with other sectors; removes unfair sectoral delineation.	institutional and transaction costs.	reductions, but stabilizes overall system.	developed and has not yet been introduced in political discussions. Strategic weight for 2015 discussions unclear.
Fully account for force-majeure events but allow for flexibility	Allows for precise measurement and accounting, and consistent accounting rules among sectors. Treats land-used based emissions like other emission types.	Long-term positive effect.	Will affect countries with high land-based emissions more than others. Countries with a high number of force-majeure events may require increased flexibility instruments and modify perhaps level of commitment.	Calculation of force majeure changes will usually not involve new reporting or accounting structures.	Will enhance real emission reductions.	Unlikely that countries will agree on the path to Paris.
Use a common accounting approach (gross-net, net-net or	Streamlines different land-use based emissions.	No direct effect.	Within industrialized countries the measure is deemed	Alleviates current procedures, which	No immediate impact. Net-net would make emis-	Countries may agree that a unified approach

reference levels)	Gross-net and net-net show real results (improvements); reference levels put more value on effort (and less on results). Net-net preferred to streamline with other Sectors		neutral. If extended to developing countries, a reference level approach in line with REDD will need to be applied. Note, however, that the principle of common but differentiated responsibilities is best achieved through different substantial obligations (targets, commitments), not through different process and accounting.	address all three categories.	sion reductions from LU Sector fungible with other Sectors	should be chosen, but it is not clear which; likelihood that this can be agreed on in Paris is considered medium at best.
Strengthening institutional capacity at the central level	Makes reporting more robust and reliable.	No direct effect.	Supports in particular countries with low capacities.	Improves institutional framework at the national level.	Indirect effect is deemed high.	Improvement of facilitative measures is deemed feasible.
Creating a separate compliance framework	Removes difficulties with accurateness, permanence, multi-annual variations and more Improves	If targets are improved, biodiversity benefits	Open to all countries. Question of common but differentiated responsibilities could be specifi-	Initially higher transaction costs both at the central and at the national	If targets are improved, effectiveness is deemed high.	Current negotiations do not discuss separation of compliance target for land-use based

	land-use based focus and perhaps targets.		cally addressed.	level.		emissions. The option seems more suitable should Paris 2015 fail and new negotiation tracks have to be found.

Table 7: A Flexible Mechanism for Industrialized Countries.

Measure	Environmental Integrity		Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability
	Climate	I Biodiversity				
Reformed JI: LULUCF Project Category	To ensure environmental stringency, a number of reforms seem in order, including a better integration of JI Track 1 and Track 2 to allow for better oversight. The substantial integrity could be enhanced through conservative baselines and credit re-	Opening JI for peatland restoration and conservation would yield strong co-benefits in particular in the field of biodiversity.	Opening JI for the land-use sector would enhance the mechanism's accessibility and improve the land sector's leverage.	While the inclusion of land (or peatlands) in a direct emissions trading scheme would present difficulties, the coverage through JI appears viable within the existing institutional framework. Methodological approaches are currently tested in the voluntary markets.	Tapping into the carbon potential of land-use and in particular into the carbon-intensive use of peatlands may prima facie yield high carbon returns. However, the influence of credit market prices needs to be taken into account: At current ERU prices, peat interventions could not be fi-	JI negotiations have been slow in recent years, and the EU's appetite for JI credits to date is minimal. As part of a grand deal (2015 agreement), JI may continue (maybe under another name), but this is not a given. In that case, the em-

	serves.				nanced. If prices from voluntary standards – under Germany's MoorFuture standard, prices per tonne are above 30 EUR – are a guidance, JI prices have to increase substantially to make peat interventions viable.	brace of LULUCF including peatland conservation and restoration is a realistic scenario, but only in the mid- to long-term.
JI With Sectoral Contributions	Depending on how the sectoral contributions or targets are set, this option may yield a high environmental premium and avoids potential rebounce effects implicit in a project based approach ("leakage").	As before, the opening of JI to peatlands is a major improvement over the current situation on the side of biodiversity considerations	It is not clear whether every country (or subnational entity, if subnational contributions are allowed) can participate from the start; increased assistance for jurisdictions that lack capacity should be granted.	The institutional challenge seems considerable (cf. the difficulty of Kyoto Annex I countries to account for LULUCF emissions countrywide); Annex I countries have built capacity however under Kyoto, and the REDD experience may offer additional know-how.	Depending on the sectoral contributions and targets, the option could take credit volumes out of the market and thus generate higher price yields. Ultimately, future market demand is key.	A sectoral JI for LULUCF and/or peatlands has so far received scant attention outside the EU. The bloc may move towards sectoral LULUCF crediting itself (see below), but considerable work at the international level is needed to bring the Sectoral JI (and Sectoral LULUCF JI)

						concept into something agreeable. The 2015 agreement may include a placeholder; more attention will be given to new market mechanisms
Sectoral Mechanism for Peatlands (Industrialized countries)	Depending on the stringency and the participation of countries, the gains for climatic integrity can be high.	The same applies for biodiversity.	Countries would be free to join and to negotiate fair and inclusive terms.	Institutional challenges are high. A compliance framework would have to be built from scratch.	Depends on the terms. In theory, countries could transact their quotas.	There are few signs, if any, that countries have the stomach at this point in time to negotiate a sectoral mechanism for LULUCF outside REDD. This may be an opportunity if negotiations on a 2015 agreement fail.

Table 8: Linking

Measure	Environmental Integrity	Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability

	Climate	I Biodiversity				
Linking of incongruent systems (System A recognizes LULUCF offsets, System B does not)	Any conceptual weakness in System A may translate into System B, unless they are specifically accounted for (conservative baselines, buffer accounts, and other). In the linking agreement, the countries may agree to cap or even exclude LULUCF (then the result is neutral).	Neutral.	Neutral.	Adequate communication of the two systems needs to be facilitated (as a consequence of linking). No higher transaction costs expected vis-à-vis the LULUCF offsetting part.	Depends on the price levels in the two systems and the question whether LULUCF credits are restricted or not. If System B yields higher prices than System A, then the impact on LULUCF could be positive ("effective"), if it yields lower prices, then the impact could be negative.	The U-Turn of the Australian government in their climate policy means that the EU/Australian linkage will not happen any time soon. Future linking with the US (California) and Canada (Quebec) may happen, but it is not a priority in either Europe or the US.

Table 9: Option at the EU Level

Measure	Environmental Integrity Climate	I Biodiversity	Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability
Direct EU ETS Coverage	Direct coverage by a EU ETS is untested.	Positive.	The inclusion of the LULUCF sector increases participa-	Additional efforts are projected to be	Depending on the target, the measure	Currently not a political topic seriously

	Robust MRV may be possible but need to be tested on an individual level. Permanence is a contentious matter. If land-use based emission reductions are deemed non-permanent, a buffer or insurance system would need to be put in place as part of the ETS.		tion. It could be problematic, however, to set entry thresholds (to reduce the number of participants), as the measure for setting thresholds may not be oriented at the carbon output factor but rather at land size.	very high.	can certainly be effective.	under consideration.
Article 24a EU ETS	If equipped with a robust design, environmental (climatic) integrity is secured (including on leakage). The issue of permanence (if we assume there is one) can be neutralized	Positive impact.	Addressing the land-use sector through Article 24a would enhance the mechanism's accessibility and improve the land sector's leverage.	The main institutional challenge is the set-up of the mechanism itself (for all sectors). The add-on for LULUCF is not negligible but based on the experience in the voluntary markets viable.	Whether there is activity in the area of peatland restoration and conservation depends on the price. Market flooding is not expected, certainly not in the first years of learning. Thus, the price sig-	The option may be seriously discussed, when the EU-wide targets for 2030 are fixed. Implementation before 2020 is unlikely; even after 2020 LULUCF is not likely to be the first category eligible

	through a buffer pool.				nal would come from the overall market. A variation may be installed under a hybrid "Peatland Fund" system, in which land-users would participate on a mandatory or voluntary basis.	under an Article 24a mechanism. Political agreement feasible only after the 2015 agreement negotiations and for some time between 2020 and 2030.
LULUCF and Peatlands under the Effort Sharing Decision	The integration of peatland related emissions or – conceptually more compelling in an EU-wide perspective – LULUCF as a whole in the ESD could result in robust mitigation efforts if the targets and compliance framework are robust. Specific peatland-related measures could be	Positive impact on biodiversity expected. However, if LULUCF as a whole is addressed, peatlands may not gather sufficient attention (among the other sub-sectors).	Would make the ESD scope more comprehensive and sector-inclusive	Relatively high institutional barrier initially, but new legislation will present a framework, in which the additional efforts are expected to be minimal.	Depending on the target, the measure could be effective and the market would not need to be long (= excess in credits). Whether peatland emissions would be primarily addressed or other sub-sectors is hard to tell at this stage.	The integration of LULUCF in the ESD framework appears feasible/negotiable even at this stage.

	triggered through 'Peat Investment Schemes'.					
Separate LULUCF / Peat Compliance Framework	Depending on the details, environmental / climatic integrity can be assured.	Positive impact.	If at the country-level, the measure appears inclusive; if at the individual level (farmers, landowners), setting the threshold would be complicated.	Relatively high institutional and transaction costs, in particular, when implementation at the individual level.	If ambitious, the effects can be high.	The option is mentioned in a range of policy background documents and studies, but so far not taken up at the political level.
Cross-Sector Offsetting	Environmental integrity in the sense of 'a tonne is a tonne' can be secured.	Positive impact.	Neutral.	Relatively high in the initial policy-set up, but few institutions are needed, as the offsetting can be arranged in a static way (without economic actors necessarily engaging in 'trade' of emissions).	Positive. The option could solidly solve the issue of credit oversupply by accessing other policy areas.	This is a new approach and has not yet been tested in political bodies. Chances of imminent implementation are low. There needs to be extended discussions first.
Peat Earmarks	This option would not consist in establishing a market set-up; peatlands would benefit from mar-	Positive impact.	The competition with other earmark targets may be high, in particular when discussed between peat-rich Member States and those with	Low transaction costs expected. The distribution of funds implies an institutional framework however.	Depending on the available funds, the measure will play out effectively.	There are heated debates at EU level to what extent budget earmarks for proceeds that fall

ket proceeds. Arguments against environmental integrity do not appear.		few peatlands. A way forward may be to reach agreement on peat earmarks among the Northern countries and alternative earmarks for Southern Member States (e.g. for coastal habitats).			into the remit of Member States are admitted. Creating non-binding incentives for Member States to earmark in national responsibility seems more viable.

Table 10: Interventions at the Member State Level

Measure	Environmental Integrity		Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability
	Climate	Biodiversity				
Command-and-control: Prevention of further drainage through mandatory regulations in Bundes-Boden-schutz-Gesetz (and regional soil protection	High environmental / climatic benefit.	High co-benefits for biodiversity.	Farmers, developers and other users may oppose regulation arguing that it is one-sided, red tape and comes on top of multiple nature protection laws.	Initial institutional efforts would be limited (linked to the development of statutory terms); however, the experience with agricultural practices (cf. 'cross compliance') shows that compliance may be lagging behind, which in turn would require institutional capacity	Depending on the level of enforcement. Can be high.	Requires a closer look into the details of potential regulation. The recognition of organic soils as a carbon pool and a natural function of the soil seems to be common sense, but agreeing on a clarification in e.g. § 2 (2) Bundesboden-schutz-Gesetz, may still be a highly contentious issue as such clarification could trigger

statutes), Baugesetzbuch (planning law) or elsewhere				to secure enforcement. For certain areas, e.g. planning, additional institutional efforts will be low.		strong obligations to abstain from drainage practices (which could be regarded as 'detrimental soil changes' in light of the newly defined purpose under § 2 (2)). The difficult process around the development of a European Soil Framework Directive shows the magnitude of the problem. More specific changes, e.g. to § 17 (agricultural practice), are perhaps more viable (but in turn harder to enforce).
Create a nationwide peat zoning instrument, improve sustainability certification, and intensify demand for paludicultures	High long-term benefit.	High long-term benefit.	As these are mostly positive instruments, an argument of (one-sided) over-regulation cannot be made.	Some institutional costs for the government are involved (to establish and maintain a zoning inventory, in particular), and regulatory efforts are needed.	Ex-ante assessment is difficult, but expectation of substantial improvement exists.	Some of the interventions seem viable at a reasonable likelihood (e.g. sustainability certification by way of changes to the Nachhaltigkeitsverordnung); others are more complicated, namely boosting demand for paludicultures, but nonetheless feasible (e.g. through special subsidies to paludi-pellets).
Enhance voluntary carbon codes and	High short- and long-term benefits.	High short- and long-term	Represent inclusive mechanisms.	Moderate institutional commitments are needed (for peatland code	The decision to support voluntary codes with orga-	The matter seems little contentious politically, but the (non-) availability of funds (especial-

launch peat carbon tenders (including with timeframes of only 10-15 years)		benefits.		support cf. the government support in Mecklenburg-V.); cash support will be needed in the alternative of public tenders (and is helpful in the alternative of supporting voluntary codes, e.g. to set up a long-term investment fund)	nizing public tenders will make a substantial contribution. The support for voluntary tenders is ultimately successful, if demand for credits can be created.	ly at regional level) may be problematic.

Table 11: Enhancing Inernational Voluntary Standard

Measure	Environmental Integrity		Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability
	Climate	Biodiversity				
Adjust permanence-tool to address specific peat risks, and consider introduction of mid-term longevity projects.	There is an overlooked value in transitional peatland restoration projects, as long as stable rewetting conditions can be guaranteed for any period of time. The standards should allow for 10 year and 15 year duration projects and should shape the permanence test closer to the singular risk of	While obviously the situation of permanent restoration and conservation is preferable from a biodiversity view, 10- to 15 years sanctuaries, perhaps in combination with a rolling site-recovery-mechanism is a	Neutral.	Few extra efforts, if any, are needed. Overall the transaction costs will be lowered, even though fixed costs (for engineering, project set-up) remain the same: as sites can return into previous usage, purchase of land or long-term commitment can be	Contribution is substantial. At the same time, there is little evidence that credits from peatland projects would flood the market, at least for some time.	The political starting point is the recognition of the difference between sequestration and emission reduction projects. Discussions at expert level are fairly advanced by now, and there are decent chances that at the policy level temporary emission reduction projects will over time be recognized in their own right.

	emission reduction projects (stock loss and developments beyond baseline).	clear advantage over the status quo.		avoided.		
Convert existing stock of diverse methodologies into a comprehensive methodological module set, which offers off-the-shelf modules for use by project proponents	Ensures robust methodological accounting for each project.	Indirect effects are considered high.	Simplifies access.	According to estimates, some 150,000-200,000 EUR would be needed to establish the module set; the effect would be to lower project risks and transaction costs for users considerably.	Positive effect expected.	Most appropriate intervention location would be the Verified Carbon Standard, which supports the idea. This seems more a matter of donor commitment.
Creation of national coordination facilities	Meant to boost the use of voluntary standards and supports accurate implementation	Positive impact.	Facilitates access for users (including public sector entities, e.g. municipalities).	Depending on the design of the facility and the remit, staffing costs, operational costs and financial commitment (to support a fund solution, for instance, or help with advance payments) are needed.	High impact in the mid- and long-term expected.	This is a matter for national (and perhaps sub-national) governments. Our view is that while the value is recognized in many jurisdictions, a lack of funds and planning capacity represents a barrier.

Table 12: Options at the International Level

Measure	Environmental Integrity		Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability
	Climate	Biodiversity				
Build towards a common reporting and accounting framework for Annex I and Non-I-Countries, and strengthen peat accounting in REDD+	Formal accounting will remain restricted to Annex I countries and perhaps (some) emerging economies for quite some time; however, international reporting and accounting should work towards integration over time, and REDD+ accounting needs to address the specific needs of peatlands. Positive influence on environmental integrity is expected.	Indirect positive impact.	Developing countries should be helped to establish reporting and, where relevant, eventually accounting frameworks. Obligations regarding comprehensiveness and accurateness will increase gradually only.	Additional efforts are needed at the central (UNFCCC) level and at the national level. Capacities need to develop over time. Long-term transaction costs should be stable.	Indirect influence only.	The principle is widely understood; the details are very much in dispute. The development of an international consultation and analysis (IAC) cycle, however, already points towards greater levels of integration.
Setting an international transaction levy to support REDD+ and peatland conservation and restoration	Depends on how available funds are successfully channelled into environmentally strong projects. High potential.	High potential.	The process for choosing supported interventions will need to be inclusive, transparent, and generally accessible	Project selection and oversight require an institutional framework; for sourcing, additional efforts are minimal.	Depending on the liquidity of the market, the quota, and the success of selecting eligible interventions, the output can be high.	There are two obvious challenges, 1) the uncertainty of a future international "transaction market" as such, and 2) the competition with other levy purposes (in

			to worthy projects and interventions.			particular adaptation). Chances of implementation are deemed medium.
Broadening the scope of LULUCF and peat interventions within the Clean Development Mechanism (CDM)	Supporters of a restricted CDM (excluding LULUCF) point to uncertain MRV and permanence issues. However, the Pro-LULUCF camp is growing, itself supported not least by positive evidence from voluntary markets. Permanence, many countries and experts argue, is best addressed through a buffer or an insurance scheme.	If LULUCF and in particular peatland projects are admitted, the effect for biodiversity would certainly be positive.	The accessibility of the CDM mechanism would be strengthened.	Additional methodological work is expected and there is an institutional need (at project level) to secure MRV, safeguards and other, but overall additional efforts needed is deemed low.	The recent experience from the voluntary markets shows that REDD+ has the potential to oversupply a small-sized market. Peat related interventions, where they already exist, are not advanced enough to create substantial (over) supply. Off-take caps and price developments could produce a healthy market in the long run.	Today's low CDM credit prices make it increasingly unlikely that REDD-proponents will manage to negotiate a REDD window into the CDM (opponents point out that REDD deserves its own mechanism). A gradual opening of the CDM towards LULUCF is likely, however, perhaps initially through a replacement of temporary credits by permanent ones (in exchange for a buffer or insurance scheme).
Establish a REDD+/Peat Mechanism (which also includes	Depending on the robustness of the mechanism, environmental / climatic integrity can be secured.	High benefits.	Extends accessibility. Could arguably prioritize structurally peat forests	The REDD+ scope is extended, and so are the institutional needs and absolute transac-	Measure should yield substantial emission reduction results. In so far as credits are generated	Recent developments have stressed the below-ground carbon value of REDD+. Further peat arrangements

interventions on post-1990 deforested peatlands)			over other woodlands, but carbon density is only one REDD+ factor among many. Impact needs not be negative, in any case.	tion costs. Integration of carbon-rich soils may lower the relative transaction costs, however.	(REDD+ is still far from this), there is a potential for higher supply (and, consequently, lower prices for the market as a whole. This would depend, of course, of general market demands.	are deemed feasible, but with a regional focus and impact only (in particular South East Asia).
Sectoral peatlands approach under NMM and/or FVA	A country-wide approach can secure the additionality of the interventions and prevent leakage, while also facilitating large-scale developments. The benefit in terms of environmental / climatic integrity depends on the targets and the shape of the sectoral regime, but can be high.	Impact can be positive.	Depends on the participation of countries. Sub-national actors may be excluded, if country as a whole does not reach agreement / does not commit.	Institutional efforts needed are substantial. Sectoral outreach has so far not been tested; initial transaction costs will be high. However, over time, the country-wide roll-out promises low relative transaction costs. Peat as a cross-country issue (other than REDD) may facilitate implementation.	Potentially high. The level of trade and transactions will depend on the supply with credits (if any).	The NMM and FVA discussions are not too far advanced. A sectoral layer for LULUCF or a LULUCF specific acitivity (here peatlands) is not a priority negotiation item in the short- or mid-term, but may ultimately become a showcase how NMM/FVA could work.
Peat Hot Spot Mechanism (separate agreement	The environmental integrity will depend on the protection level of the standard	Generally a high positive impact expected.	As long as the mechanism is open to all countries, the ap-	The initial institutional and transaction costs are lower, when me-	The effectiveness depends on the ambition of country targets and the firm-	Whereas the EU' LULUCF Monitoring decision of 2013 hints at its implemen-

among like-minded countries)	and its enforcement capacity. Voluntary commitment of countries raises the odds that the environmental performance will be strong.		proach can be deemed fair and inclusive. Different treatment of countries according to the level of development is possible.	chanism is established within the UNFCCC, and higher when it is not. (Considerable) costs (short- and mid-term) are MRV and enforcement-related, even though recent IPCC works will serve as a strong base of preparation.	ness of enforcement. General experience with emissions trading suggests that the mechanism has good chances to prove successful. Across-the-board market flooding is not to be expected as the mechanism is a stand-alone (without fungibility with other sectors).	tation in the post 2020 agreement, no country has taken the initiative so far, to include the mechanism as part of the 2015 Agreement. The 2015 agreement may, however, provide a placeholder for future mechanisms; the Peat Hot Spot Mechanism may then mainstream into negotiations in the mid- or long-term. Alternatively, should negotiations on the 2015 Agreement fail, the mechanisms may be agreed on the initiative of likeminded nations.

Table 13: International Agreements on Emissions Trading between the EU and Developing Countries.

Measure	Environmental Integrity Climate I Biodiversity		Fairness and Inclusiveness	Institutional governance and transaction costs	Effectiveness (including market considerations)	Political viability
Carbon Accountin	Has no direct impact on ac-	High long-term ef-	Neutral.	Institutional infrastruc-	Long-term effects can be	EU is generally open for

g Partnership	tion but prepares the groundwork for robust accounting and, hence, robust intervention in the future.	fect, if peatlands are specifically addressed.		ture will be built or strengthened by the intervention, drawing (partly or wholly) from EU funds.	high.	bilateral climate cooperation including on accounting. Close cooperation agreements are expected with countries falling in the neighbourhood programs of the EU.
Emissions trading trial schemes	Beneficial over the current situation. Inclusion in ESD most likely.	Beneficial.	Neutral.	Institutional built-up of crediting scheme needed, but centralized shape keeps overall efforts contained.	The quotas in the ESD would not be high and the overall impact would not be great, but for a trial scheme, amounts would still be considerable; market flooding would not be an issue due to the bilateral nature.	Lies in the negotiation path but may yet be too premature. After negotiation of a 2015 agreement, this becomes more feasible.
Cross-sector emissions trading	Depends on the 'transfer value' – principle of 'a tonne is a tonne' can be respected – and the robustness of the scheme.	Generally positive impact.	Neutral.	Institutional built-up of crediting scheme needed, but centralized shape keeps overall efforts contained.	Would boost demand and reduce market flooding at all levels. Effectiveness deemed high.	The issue has not yet reached the political levels. While cross-crediting of some form is established in EU legislation (cf. 'super-credits' for vehicles), the combination of carbon emissions

and non-carbon regulations is new.

5.2 Summary Evaluation and Political Recommendations

The results of the evaluation may be summarized as follows:

1. Most options analysed show medium to high marks and a decent degree of feasibility. The evaluation 'low' has been reserved for few options only. This reconfirms the parameters of practicability and effectiveness, which were used throughout the option assessment. It also shows, however, that despite recent failures in climate policy making and difficulties encountered, including at the EU level (see, in this context, the depressed prices under the EU ETS and the political disagreement on a 2050 emissions trajectory), a magnitude of strong conceptual ideas exists, whose technical implementation is deemed viable and which may be found politically acceptable.

2. A number of options show a strong performance with respect to almost all criteria. These include 'Strengthening of accounting capacity at the central level', 'Adjustment of permanence tool for voluntary standards', 'Establishment of off-the-shelf methodological tools', and the 'Creation of national coordination facilities for voluntary standards'. While the details concern mostly 'soft' procedural measures, the long-term effects may nonetheless be significant. The German government is advised to advocate their implementation in the relevant venues.

3. A number of options show high technical results and involve a high mitigation yield potential, but are, at this stage, not communicable at the level of negotiations (all options concerned are ranked as 'low' on the criterion of political viability). We believe, for instance, a structural change to carbon accounting in forest management to the effect that creating, maintaining and harvesting wood products would be deemed carbon-neutral (at the cost of sequestration credits), brings many advantages. We also believe that natural disturbances (or *force-majeure*-events) should always be fully accounted for, and that LULUCF accounting should consistently follow one methodology, whether gross/net, net/net or reference levels. However, we reckon that these issues are yet too far from a level, at which international agreement would be tentatively feasible. We advise the German government to see that these measures are further discussed in the relevant venues, but not to include them as inherent parts of the 2015 negotiation agenda. Other examples in this section include the, the inclusion of peatland emissions in the EU ETS, and also the inclusion of REDD+ and peatland related projects in the CDM.

4. A few options have in common that they rank very high under several criteria, but that they face particular challenges under one or two of the criteria, usually institutional challenges and political barriers. The overall high marks, in this case, are not least explained by the fact that the technical details are rather advanced and the way forward accepted at the technical level – what is missing is the political backing (perhaps due to the fact that implementation may incur considerable costs). We would include in this camp the options to impose mandatory accounting obligations for agricultural soils and wetlands, and possibly the option to establish a REDD+ / Peat mechanism. We recommend that the German government flag these issues as contentious (or difficult) but technically feasible and fairly advanced. One or more of these options may yet play a role for the negotiations of the Paris agenda and potential package deals.

5. Finally, there are those options, which may not show highest overall ranks, but which hold a high transformational potential on certain criteria, which have a fair level of support, while receiving much (albeit contentious) attention at all levels. We believe that these options could move up in the overall ranking, should they be further defined and carefully shaped according to the technical needs and the political realities. We believe that

    - The development of a "sectoral" peatland approach under the widely contemplated New Market Mechanism (NMM) and/or the Framework for Various Approaches (FvA); and

- At the EU level, the European options to
    - include land-use based emissions in the framework of the Effort Sharing Decision and
    - trigger peatland related interventions at the national level (through 'Green Peat Investment Schemes' (GPIS) or other national emission reduction projects),

fall into this category. The momentum for a sectoral NMM on peatland emissions ("*Sectoral Peatland Market Mechanism*" or "*Sectoral PMM*") is not least generated by the fact that it has – different from REDD – a cross-cutting potential addressing both industrialized and developing countries. Indeed, if ever Joint Implementation (or a successor regime) survives under the 2015 agreement, it could easily connect to the bespoke Sectoral PMM, employing the same or a similar structure while restricting the scope to industrialized (or perhaps industrialized and emerging) economies. A Sectoral PMM could also be used as a stand-alone blueprint, should the negotiations on a 2015 agreement ultimately fail. The integration of peatland related interventions in the Effort Sharing Decision, for its part, would build on the inclusion of LULUCF into the accounting framework, which is already (to some extent) underway.

5.3 Recommendations on Concrete Options

In the following, we will briefly summarize the parameters along which these two measures could be structured, before we make a number of recommendations for the negotiation agenda of the German government and the EU as a whole.

5.3.1 Options under the UNFCCC: A (Sectoral) Peatland Market Mechanism

A Peatland Market Mechanism (PMM) could be created in the form of a "sector"-window under a general or multi-sector New Market Mechanism or as a stand-alone "sectoral approach". "Sector" in this context is not to be understood in an economic sense but rather in the sense of territory-wide application to a certain category of soil (all peatlands at the country- or at the subnational level). It would aim at the creation and trading – in the form of trading proper or in the form of crediting – of emission reduction units or "new reduction units" (NRUs)[345] related to peatland emissions and emission reductions. While the climate finance focus is on developing countries, industrialized countries would participate through making a peatland commitment of their own and creating direct demand (and perhaps supply – under a unified trading approach). This sets the Sectoral PMM apart from a peat-focused REDD+ approach, under which, for all practical purposes, demand would be created exclusively from sectors outside forestry ('industrial offsets'). PMM demand, by contrast, can come from within the "sector" (peat offsets for peat-related emissions (peat agriculture, peat extraction, etc.) as well as from without.

As REDD+ nonetheless is the (sub-) sector within LULUCF, for which the conceptualization of emissions trading has gone farthest, we will explore the architecture of a Sectoral PMM in comparison to that of a (peat focused) REDD+ in table 7:

(both special peat features within a Peat-Focused REDD+ mechanism as well as special features of a Sectoral PMM are marked in red/*italics*)

Table 14: Architecture of a Sectoral PMM in comparison to that of a (peat focused) REDD+

Feature	Peat-Focused REDD+	Sectoral PMM
Eligible countries	All developing countries with *peat swamp forests*	*All countries with peatlands*
Eligible activities	Reducing emissions from *peat swamp* deforestation; Reducing emissions from *peat*	Reducing emissions from peatland drainage, destruction and degradation;

345 See chapter 4.1.1 above.

	swamp forest degradation; Conservation of *peat swamp forest* carbon stocks with a focus on *soil carbon*; Sustainable management of *peat swamp forests*; and Enhancement of *peat swamp forest* and *forest soil* carbon stocks.	Conservation of undrained peatlands; *Restoration of drained and/or degraded peatlands* *Implementation of paludicultures*
Scope of activity	National or subnational	National or subnational
Trading principle	Crediting	Trading or crediting
Trading period	Year-to-year accounting (credit generation) is an option (if combined with a buffer or insurance model, see below under "Permanence, Liabilities")	*Annual or multi-annual compliance within multi-annual trading periods (similar to the commitment periods of the Kyoto Protocol) is the most likely option*
Principle of linking	Unilateral (credit recognition by industrialized countries)	*Unilateral or bilateral/multilateral (trading of units in both directions)*
Participants	Government-to-government (base concept) Direct involvement of subnational and private individuals possible ('nesting')	Government to government (base concept) Direct involvement of subnational and private individuals possible ('nesting')
Baseline Setting	The standard REDD* reference level based on historic data and national circumstances; Criterion is the rate of forested-to-non-forest conversion *and the (continued) land use. But note that a decreasing rate of conversion may still – given the peculiarities of organic soils – lead to an increase in emissions*	*Ambitious reference level, which deviates from business-as-usual* *Criterion is the (i) conversion rate of undrained-to-drained peatlands, (ii) the rate of further degradation (e.g. deeper drainage) of drained peatlands, and (where the bulk of emissions are hidden) (iii) continued land use* *Requirements for country-wide or subnational baseline calculation can be defined on the basis of emission factors established by the IPCC (developed, but need for adjustment)*
Technical set-up	Forest cover fixation through remote sensing (robust data available)	*Means to assess peatland emissions from forested land, agricultural land and other land are available (cf. IPCC*

		Guidelines), but not yet widely and consistently applied. A range of countries is still to undertake a detailed spatial mapping of peatlands/organic soils
Institutional Set-Up	Bilateral or multilateral Bilateral or international "clearing house" for baseline setting and MRV National focal point / liaison (see Warsaw Framework) Bilateral or international registry Roll-out (three phases)	Bilateral or multilateral Bilateral or international "clearing house" for baseline setting and MRV National focal point / liaison Bilateral or international registry *3-phase roll-out (Phase 1 – National Strategy and Action Plan, Phase 2 – Implementation of policies and demonstration activities, and Phase 3 – full implementation) needs to be adapted to the specific situation of peatlands, in particular in its impact on long-established agricultural use*
MRV	Installation of robust monitoring; International support for technical verification (See Warsaw Framework)	Installation of robust monitoring; International support for technical verification
Safeguards	Information System on REDD+ Safeguards (see Warsaw Framework)	*Information System Peat Safeguards will have partially modified focus areas (cf. agricultural soils), but the overall safeguard approach (to secure rights and interests of the local population, to yield biodiversity benefits and so on) is useful*
Permanence, Liabilities	Permanence can be managed through buffer-regimes or insurance policies (country backs credits through long-term guarantees);	*A separated peatland multi-annual approach would isolate the permanence issue, i.e. a country that commits to a reduction target over a certain commitment period (e.g. 10 years) vouches for any past-activity stock losses on the ground into later comment periods; credits or other trading units in any compliance year are therefore unaffected by*

		such a loss.
Commodification, trading and sales	Despite political reservations in several countries (both industrialized and developing) against 'commodification' ("REDD+ assets"), support for 'results-based-finance', measured on the basis of $tCO_2eq.$ is consolidating To what extent the output of results-based-finance – $tCO_2eq.$ translates into tradable units (and potential offsets for industrial emissions) remains to be seen	*Trading and compensation for peatland (or generally LULUCF) related emissions in participating countries would be the basis of "sectoral" engagement; demand and supply could be organized within the same "sector";* *'results-based finance' is an option (or a temporary option), but commodification appears to be the ultimate aim*

The comparison shows a range of identical and similar elements, i.e. a PMM could use elements conceptualized or already established (e.g. MRV governance), but would also require additional efforts and technical works (on methodologies, monitoring, baseline setting and other) in order to become implementation-ready. The biggest challenge remains the stalled state of negotiations on NMM, FVA and sectoral approaches.[346] The biggest opportunity, on the other hand, is that demand and supply could be directly linked. If, for example, Iceland and Malaysia were to participate in a (bilateral or multilateral) PMM, e.g. linked through their respective INDCs, both countries would set country-wide peatland emissions targets (based on historic emissions, projections and national circumstances) for a period of e.g. 10 years. During this period, Iceland (whose annual peat-related emissions are around 5.7 mtCO2eq.)347 could combine its domestic peatland restoration efforts with conservation and restoration activities in Malaysia; credits generated with the support of Iceland could be used under the Icelandic target, while being deducted from the reduction efforts implemented by Malaysia ('nesting' to avoid double-counting). Notably, the PMM could be organized under a centralized scheme (NMM) or in bilateral and multilateral constellations (FVA). For a graphical understanding see figure below.

346 See chapter 4.3.4

347 Joosten, H. / Barthelmes, A./ Couwenberg, J. / Tegetmeyer, C. / Risager, M., 2014, Peatlands and climate in a Ramsar context: a Nordic-Baltic perspective (forthcoming).

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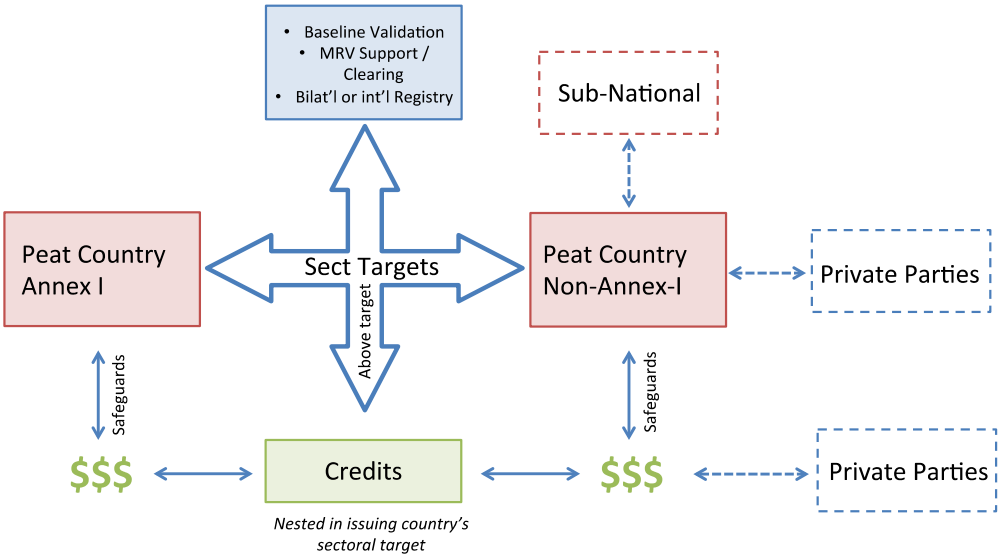
Figure 18: Model structure for a Sectoral Peat Market Mechanism.



The negotiation of a PMM will not be simple. The NMM/FVA discussions have proved cumbersome; peatland emissions and instruments to reduce them are yet to seize the attention of countries and their negotiators; the unclear position of LULUCF accounting in country commitments may prompt countries to postpone LULUCF mechanisms altogether. Technical discussions and the question of permanence may still cast a cloud on the negotiations of mechanisms. Yet, the opportunity is there, and countries across the board understand that a 2015 agreement without LULUCF will not work. The INDC process, in particular, could breath new life in the NMM/FVA discussions. We draw the following recommendations for Germany's (and the EU as a whole) position from our analysis:

- Present peatland-related emissions as a high-potential and high-opportunity matter, which requires consideration at the reporting and accounting level as well as at the level of climate finance instruments;
- Stress the cross-cutting nature of peatland emissions: They are a large source of anthropogenic emissions in almost every country in the world with peatlands whether industrialized or developing;
- Stress the ability of peatland-related emissions to bridge the regulatory and policy-gap that (still) exists between forest (biomass) carbon and agricultural (soil) carbon;
- While acknowledging the challenges for countries to adequately account for peatland emissions, bring in focus that the comparably small territorial exposure – 400 million ha or about 3% of the global surface – and the long-term emissions profile make peatlands a priority opportunity for long-term climate finance intervention;
- Promote targeted peatland interventions as a project type within the NMM/FVA design or as an *NMM/FVA pilot*, should the negotiations on the mechanism(s) not make substantial progress;

- If the 2015 agreement is set to adopt an NMM/FVA placeholder – instead of a full-fledged provision on their design – make sure that soil-carbon emissions or LULUCF as a whole finds recognition; and
- Especially in the absence of clear progress on NMM/FVA, work actively towards integration of peatland interventions as an eligible project category under the CDM and JI; for the CDM, the creation of permanent and fully tradable credits will be crucial; on the basis that the only non-permanence risk (if at all) stems from above-baseline stock loss events, the creation of a moderate buffer solution seems non-complex and viable;
- Establish a *Peatland Partnership* with one or more developing countries and aim to establish the adoption of a "sectoral" (territory-wide) peatland target (pledged or binding) and a peat trading or crediting instrument meant to secure compliance by all partner countries.

5.3.2 Option at the EU Level: Peat Intervention under the ESD

The integration of peatland-based and other LULUCF-emissions in the Effort Sharing framework has become a feasible prospect, ever since the EU-LULUCF Accounting Decision has been adopted.[348] In its explanatory remarks on the Accounting Decision – which – we recollect – phases in mandatory reporting for different types of soil carbon emissions until 2021, but leaving it to Member States to report on WDR – the European Commission states:[349]

"The EU Decision does not set a target for emission reductions in the LULUCF sector. There are various reasons for this, an important one being that accounting must prove robust before setting targets. The Commission will consider whether to propose GHG targets for agriculture and forestry sectors once the accounting rules have proven their worth."

This may be after the full rollout of the Accounting Decision (by 2021) or before (especially should there be relevant account progress at the UNFCCC level). The revision of the ESD to respond to the 2030 climate and energy package represents a good opportunity in any case. The following details need to be kept in mind, however:

- Peatland-related emissions are just one emission source among others in LULUCF; in all likelihood there will not be a decision to incorporate peatland emissions only (other aspects aside, the distribution of peatlands is very uneven), but peatlands will be included in a country's *overall LULUCF window*; for an overview of soil carbon density in EU countries see figure 18;
- The EU accounting system then may or may not mirror the international emissions obligations (QUELROs). It depends on the accounting characteristics of the 2015 agreement whether the LULUCF related emissions that are then the basis for the LULUCF window under the ESD will be fully synchronized with the international accounting units;
- The EU may choose to incorporate LULUCF emissions into the ESD or to set up a LULUCF accounting framework of its own. High variability of emissions and removals in forests (less so, however, in peatlands) and arguably a lower frequency of gathering inventory data may argue for multi-annual compliance cycles rather than the annual cycles applicable to the ESD.[350] However, the ESD may itself provide for flexibility for variable emissions – as it already does with respect to meteorological conditions (Article 3 (3) ESD) – and the frequency of gathering inventory data can follow the cross-economy cycles otherwise applied. . From a technical point of view, year-to-year inventories should not present substantially higher transaction costs once an adequate national system to trace

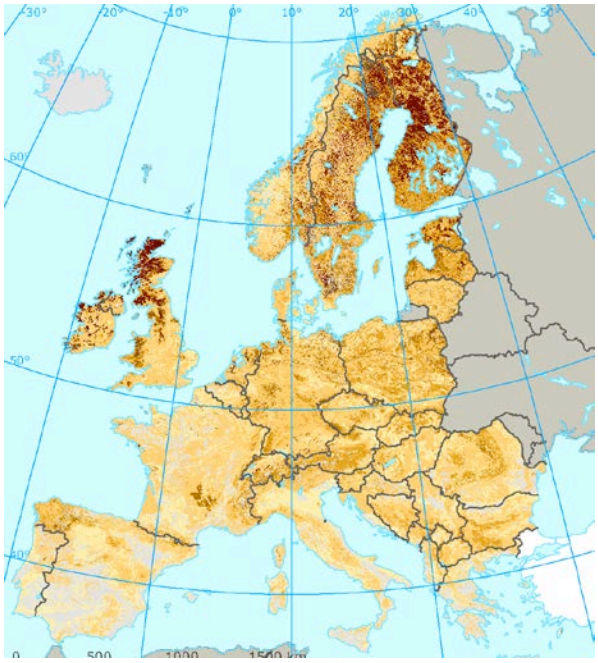
[348] See above chapter 2.1.4.

[349] European Commission, Climate Action, LULUCF in the EU, http://ec.europa.eu/clima/policies/forests/lulucf/index_en.htm.

350 See European Commission, 2012, Accounting for land use, land use change and forestry (LULUCF) in the Union's climate change commitments, Communication, COM(2012) 94 final of 12 March 2012, page 11. http://ec.europa.eu/clima/policies/forests/lulucf/docs/com_2012_94_en.pdf.

emissions is established. Incorporation in the ESD may be an effective way to concentrate and consolidate the Union's emissions trading systems and to tap into economies of scale and other market opportunities by establishing a large unified emissions trading system (outside the EU ETS);

Figure 19: Soil organic carbon density. The intensity of the shading reflects the percentage of topsoil organic carbon content; the darker it is, the higher the carbon percentage.



Source: European Environment Agency.

- The ESD does not foresee a separate regime of crediting; rather it relies on the generation of international credits (CDM and JI) and Article 24a EU ETS;
- As JI is no longer practiced in the EU and as Article 24a EU ETS will not be instrumentalized any time soon, the inclusion of LULUCF in the ESD will not lead to *peat-based credits* generated within the EU;
- Rather, ESD coverage will have an indirect impact on peatland related emissions – provided targets are set in a robust way, countries will be forced to employ conservation, restoration and mitigation measures (paludicultures and other);
- Indirect crediting can be achieved through linking ESD quota sales to so called "green investment schemes" ("GIS") or, in this context, "green "peat" investment schemes" ("GPIS"). As explained in chapter 3 above, GIS have become fairly frequent add-ons to Assigned Amount Unit (AAU) transactions among industrialized countries. While ESD quota (so called Annual Emission Allocations or "AEAs") are yet to materialize, GIS may have a renaissance. It will depend on country choices which sectors to address with GIS; GPIS may become of particular interest for the Member States of the Northeast.
- A direct crediting link with (EU-external) peatland interventions could be achieved if the CDM ultimately opened to peatland conservation and restoration projects or if the EU concludes a bilateral agreement with a third country allowing for peat credit generation.
- Permanence should not become an obstacle in either scenario. While the ESD does allow for temporary credits, the CDM may well move towards issuing permanent credits in exchange for a buffer or insurance system (see chapter 5 above). Under a bilateral system the same may apply: Any credits

may be traded as permanent, if supported by a scheme that guarantees compensation for any stock loss events.

On the basis of these considerations, we conclude with the following recommendations for the German government and EU regulators:

- Consider the creation of a pilot LULUCF window as part of the ESD in the short-term, i.e. prior to 2020, either for all Member States or for those Member States, which show an interest; participating countries should receive a shadow ESD quota that includes LULUCF, for which ESD reporting obligations, yet no coercive actions should apply. The pilot will give insights into whether the synchronization of LULUCF inventories with the ESD inventory is possible and whether emissions fluctuations or any technical details cause specific challenges;
- On the basis of the pilot, the EU may decide whether integration of LULUCF in the ESD framework is technically feasible; if so, it appears to be the preferable option to setting up an entirely new accounting framework;
- Work towards a synchronized approach of LULUCF reporting and accounting within the EU and under the 2015 agreement, it being understood that the Union's LULUCF accounting rules can be more stringent in the sense that more activities are subject to mandatory accounting;
- Encourage the formation of GPIS by offering methodological modules and collecting practical data;
- Should the 2015 agreement not materialize or not deliver on the task to provide market mechanisms, engage with third countries to promote a crediting scheme, which includes, if not focuses on, peatland-related interventions, and neutralize any permanence issues by issuing stock loss guarantees or working on the basis of a buffer; and
- Work towards a genuine EU crediting instrument, which aims at climate finance investment in peatland intervention within the EU.

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