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A match made in Paris

Adaptation–mitigation synergies in the land sector

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Key messages

- Both mitigation and adaptation are of critical importance to the land sector, including forests and people depending on forests.
- Mitigation and adaptation are 'two sides of the same coin', but have often been treated separately, which reduces efficiency and effectiveness of policies and measures.
- Links between adaptation and mitigation are being made in the 2015 Paris Agreement, in the Warsaw REDD+ frameworks and by the Green Climate Fund.
- Research shows that there are many benefits to considering adaptation and mitigation jointly, for example in REDD+, and that an increasing number of synergistic projects are being implemented on the ground.
- Capacities to establish programs and projects that integrate adaptation and mitigation remain a challenge
- Policymakers can identify opportunities for harnessing the synergies between adaptation and mitigation and can also analyse trade-offs and put in place safeguards to reduce or avoid them
- Incentivizing the necessary research to further elucidate links and trade-offs between mitigation and adaptation will be important.

Introduction

Synergies between adaptation and mitigation in policy can have multiple benefits (Locatelli et al. 2015a). However, lack of international agreement has created a barrier to reaching their full potential (Bustamante et al. 2014). It is only recently that parties have begun to consider the adaptation benefits of REDD+, for example, concerning the non-market approach to REDD+.[1] Mitigation and adaptation synergies have now advanced further as a result of the Paris Climate Agreement.[2]

In this paper, we discuss where and how adaptation and mitigation synergies are recognized in the international climate policy arena. We highlight the way in which adaptation and mitigation synergies are becoming an increasingly important approach to addressing climate change. They are now being applied in multiple ways through national-level project implementation, international climate finance and United Nations Framework Convention on Climate Change (UNFCCC) climate policy. We explore the 'synergies readiness' of countries, showing that many developing countries are already moving towards synergies, however, the links between, for example, REDD+ and adaptation could benefit from further policy development aimed at realizing the benefits, whilst also safeguarding against negative impacts and managing trade-offs. We explore these risks and consider the need for the discourse around joint adaptation mitigation approaches to move away from a 'co-benefits' logic towards a synergistic approach to achieving climate resilience and low greenhouse gas emissions development.

Synergies in the Paris Climate Agreement

Mitigation and adaptation linkages and synergies are now firmly embedded in the Paris Climate Agreement, most obviously in Article 5, which 'encourages policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests (JMA)'. The final REDD+ decisions[3] define the JMA alternative approach to REDD+ and link it to the Warsaw REDD+ Framework. They also encourage financing entities such as the Green Climate Fund to fund JMA.

Article 2 of the Paris Climate Agreement links resilience to low emissions development, and the adaptation and mitigation long-term goals (in Articles 4 and 7) could be interpreted in a way that ensures actions to achieve one should not undermine the other. Article 4.7 provides that "mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans can contribute to mitigation outcomes".

The finance Article (Article 9) recognizes the need for balanced finance across mitigation and adaptation and the corresponding decision on finance[4] recognizes the importance of adequate and predictable financial resources for REDD+ and JMA. Linkages and synergies between adaptation and mitigation have also emerged in the context of the development of the Green Climate Fund, where half the currently submitted concept notes, in dollar amounts, represent cross-cutting (mitigation and adaptation) projects.

1 http://unfccc.int/resource/docs/2015/sbsta/eng/l05a02.pdf

2 http://unfccc.int/paris_agreement/items/9485.php

3 SBSTA decision 16/CP.21 at http://unfccc.int/resource/docs/2015/cop21/eng/10a03.pdf#page=15

4 COP decision 1/CP.21, paragraph 54 at http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf

The Paris Climate Agreement and the work at the Green Climate Fund have now opened the policy space within the UNFCCC for new work on the subject to commence. Article 6.8 of the Paris Climate Agreement defines the framework for non-market approaches, of which JMA is one. The agreement mandates a work program to "*enhance linkages and create synergies between, inter alia, mitigation, adaptation*, finance, technology transfer and capacity-building" (author's emphasis). It is under this work program that the UNFCCC process can contribute through the provision of guidance and/or modalities to assisting countries in adaptation mitigation synergies and JMA implementation.

Synergies readiness

Many developing countries are already progressing towards more synergistic approaches to mitigation and adaptation. A recent study, undertaken across 53 developing countries, showed that around 51% of the countries (27 out of 53) clearly integrate the two. The countries with the highest potential for synergy belong to the middle-income group and are experiencing rapid development and economic growth with associated increasing emissions, whereas lower potential countries fall mostly within the category of Least Developed Countries.[5] Countries with better environmental governance and environmental sustainability measures possess stronger synergy potential than the rest (Duguma et al. 2014a).

However, arguments against a synergistic approach have also been raised, for example by Klein et al. (2005), who conclude that, although there are some justifications for emphasis on policy development related to synergies, this could lead to projects that are difficult to implement and administer, are cost-ineffective, and may produce insufficient mitigation and adaptation benefits. There is a risk that project developers portray mitigation projects as adaptation projects or vice versa for the purpose of obtaining finance. Studies in Vietnam and Indonesia have shown competition for financial resources, and limitations on experience and capacity contribute to arguments in favor of keeping the two policy approaches on separate tracks (Pham et al. 2014).

Looking more closely at national policy and 'on-the-ground' project reality we can see evidence of synergies. In the Brazilian state of Amazonas, the Juma Sustainable Development Reserve Project contains design aspects that address both mitigation and adaptation. In Indonesia, the Rimba Raya Biodiversity Reserve Project in Central Kalimantan's peatlands and the Ulu Masen Ecosystem Project in the autonomous region of Aceh also take a synergistic approach (Pham et al. 2014). Mexico's National Commission for Protected Areas links the two objectives, and project developers in Colombia have expressed a desire for policies to be developed that integrate adaptation into mitigation projects (Locatelli et al. 2011). Furthermore, in the lead up to the Copenhagen climate negotiations in 2009, several Latin American countries submitted to the UNFCCC that there is a need to explore synergies.[6]

While the topic has only recently gained international policy recognition, the main challenge lies at the national (and subnational) level and, despite the increasing recognition in international policy and national-level application, little has been done to assist countries to put in place the necessary enabling conditions for synergistic design and implementation. When putting in place such guidance, four major enabling conditions should be considered: (1) emphasis on unified national laws, policies and strategies; (2) existing and planned financial means and measures to promote synergies; (3) institutional arrangements in the country with specific reference to climate change issues; and (4) plans, programs and initiatives in the country. Unless such enabling conditions are prioritized, the accompanying inefficiency in addressing climate change issues will remain a challenge (Duguma et al. 2014a).

REDD+ adaptation and synergies

REDD+ is considered a mitigation measure, however, there are clear links with adaptation (Elias et al. 2014). More recently, the decision on non-carbon benefits provided the first formal linkage to adaptation and the decision on JMA followed.

Forest mitigation projects have the potential to facilitate ecological adaptation by reducing human pressures on forests, enhancing connectivity between forests and conserving biodiversity hotspots (Locatelli et al. 2011). They can also contribute to human adaptation through ecosystem-based adaptation, defined as the management of ecosystem services to reduce human vulnerability to climate change. A good example is that of coastal ecosystems. Mangroves are considered to be one of the most carbon-rich forests in the world and account for as much as 10% of the global emissions from deforestation (Donato et al. 2011). Rehabilitation and restoration of mangrove ecosystems have high adaptation benefits, such as buffering coastal zones from tropical storms and improving fishing opportunities (Murdiyarso et al. 2011, 2015).

Conversely, REDD+ has the potential to cause serious negative impacts on the adaptive capacity of local people, for example, through land or rights deprivation and dependence on external funding (Locatelli et al. 2011). However, the integration of adaptation into REDD+ activities can increase local people's acceptance of and engagement in projects (Klein et al. 2005). This includes recognition of rights and tenure (Obiang-Mbomio and Pérez-Terán 2014). These are important matters when it comes to the perception of REDD+. Studies in Costa Rica have shown that where REDD+ is applied strictly from a carbon perspective, it may not protect the forests that provide the greatest societal benefits in terms of biodiversity and local ecosystem services (Locatelli et al. 2013).

The link between REDD+ non-carbon benefits and adaptation also provides a good example of the importance of adaptation for REDD+. Non-carbon benefits are recognized as being important to the long-term sustainability of the implementation of REDD+ activities.[7] Many non-carbon benefits arising from REDD+ activities will support adaptation, which itself is an important non-carbon benefit (Pramova et al. 2012a). Such non-carbon benefits include: the provision of goods to local communities; trees in agricultural fields regulating water and soil; biodiversity conservation increasing the resilience of ecosystems; and forests protecting coastal areas from climate-related threats (Pramova et a. 2012b).

Synergies and finance

The mitigation policy agenda has been stronger than that of adaptation, both within the UNFCCC and in project support and implementation (Duguma et al. 2014a). It could be argued that where financial resources are being allocated to REDD+ as a mitigation tool, adaptation finance for forests stands a lower chance of being prioritized. This issue of imbalance played a major role in the negotiations towards a new climate agreement. It was also the genesis of the groundbreaking decision of the Green Climate Fund to require a 50/50 allocation across mitigation and adaptation projects and programs.

The question of mitigation–adaptation synergies in climate finance is relatively unexplored, however this is an important consideration that relates to trends showing that:[8]

- A 7% share of climate finance is being provided for projects with a *multiple focus* – this is up from 3% in 2014.
- A total of 68% is spent on mitigation (52% on mitigation in general and 16% on REDD+) – this is down from 77% in 2013, and 71% in 2014.
- A 24.5% share is spent on adaptation – this is up from 15% in 2013, but a decrease from 27% in 2014.

5 The highest scoring countries in this study are China, Malaysia, Mexico and Brazil and the lowest scoring countries are Vietnam, Sri Lank, Saint Lucia and Niger;

6 The submission was made on behalf of Guatemala, the Dominican Republic, Honduras, Panama and Nicaragua highlighting the need for exploring synergies between adaptation and mitigation. See http://unfccc.int/resource/docs/2009/awglca6/eng/misc04p02.pdf.

7 http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf#page=24

8 http://www.climatefundsupdate.org/themes (accessed 21 April 2016)

Realizing the synergies between mitigation with adaptation may contribute to closing the adaptation-funding gap (Klein et al. 2005). Studies suggest that countries that are more affected by climate change have a stronger tendency to adopt synergistic approaches, which may be a reflection of efforts being made to simultaneously use limited resources (Pham et al. 2014).

Interviews undertaken with many of the major international climate finance initiatives[9] have shown that some donors would prefer a more integrated approach. Some consider that risks associated with mitigation projects can be addressed through the inclusion and integration of adaptation, particularly, through ensuring the permanence of emissions reductions and benefits for local communities. This study found that an integrated approach has the potential to increase efficiency in the use of the limited available financial resources and allow for greater economies of scale through delivery of multiple benefits (Locatelli et al. 2016).

There are, however, risks associated with a synergized approach. Some donors hold the view that an overemphasis on integration or synergies and trying to "do everything" could lead to overlooking important issues or could create projects that are overly complex, for example, through more complex monitoring and reporting requirements. An important risk identified is that adaptation finance may be redirected to mitigation actions in circumstances where adaptation funding is already insufficient (Locatelli et al. 2016).

Trade-offs and the need to safeguard against maladaptation

It is important to consider the risks associated with both adaptation and mitigation actions and to identify both the opportunities and challenges of considering actions more holistically. While some adaptation measures (e.g. reduction in carbon stocks through agriculture and nitrogen fertilization) can increase emissions, adaptation measures can help maintain the mitigation potential of activities in forests and the land sector. For example, preventing large fires or restoring degraded forest ecosystems will prevent release of greenhouse gases and enhance carbon stocks. In the agriculture sector, cropland adaptation options that contribute to mitigation include soil-management practices that reduce fertilizer use, increased crop diversification, the availability of quality seeds and integrated crop/livestock/forestry systems (Locatelli et al. 2015a).

However, a different scenario emerges when considering the risks arising from mitigation activities. Mitigation measures, particularly in the land sector, may increase people's vulnerability if they have impacts on land tenure and land-use rights for indigenous peoples and local communities. Such actions may result in lack of recognition of customary rights, loss of tenure or possession rights, and in some cases displacement of social groups (Bustamante et al. 2014), all of which increases vulnerability and negatively impacts adaptive capacity. Land-use mitigation measures may also impact on food security, for example, where large-scale forestry or energy crop plantations reduce food production (Bustamante et al. 2014; Locatelli et al. 2015b), and may increase conflict where appropriate measures are not taken concerning benefit sharing (Robinson et al. 2011). Mitigation measures in the land sector can also have negative impacts on water resources and the adaptation of water users, as water yields are affected by forest management, afforestation, reforestation and forest thinning (Jackson et al. 2005).

Polarization between the possible win–win synergetic relationship between adaptation and mitigation, and a winner–loser relationship leading to trade-offs continues to exist. Policy design needs to take this into consideration and ensure maximum benefits arising from the relationship between the two. Policies should identify and manage, minimize or safeguard against the potential risks of adverse outcomes. Considering both adaptation and mitigation in climate change initiatives could help avoid so-called trade-offs that could otherwise occur (Duguma et al. 2014a).

9 Including the Global Environment Facility, the World Bank, the Adaptation Fund and major climate financing countries, such as Norway, Japan, the UK and Germany.

Moving from co-benefits to multiple benefits

The choice of language or terminology for policy development is essential. As the discussion moves forward, emerging terminology seems to emphasize 'synergies', 'holistic', 'joint', 'complementary' and 'integrated'. The interpretation of words in policy and law can be significantly complex, confusing and time consuming. Here, we will only consider the approaches of 'synergy' and 'complementarity'.

The concept of 'synergy' has been defined as "combined or 'co-operative' effects; the effects produced by things that 'operate together'; "effects produced by the whole are different from what the parts can produce alone" (Corning 1998). In synergy, two or more agents, or components, or business units work together to achieve a jointly defined outcome that matches all agendas, with motives such as increasing effectiveness and minimizing costs (Duguma et al. 2014a), or, to put it in the context of the Paris Climate Agreement, "to foster climate resilience and low greenhouse gas emissions development".[10]

Complementarity on the other hand relates to a circumstance where either adaptation or mitigation is used as the entry point and the other is the associated co-benefit (Duguma et al. 2014a). In other words, a REDD+ project seeking results-based payments, which includes adaptation measures may be considered to be a complementarity approach as opposed to a synergistic approach. The recently agreed alternative approach to REDD+ known as JMA may be a synergistic approach as neither adaptation nor mitigation are intended to be a co-benefit of the other.

It has been argued that the separate treatment of adaptation and mitigation increases the cost of climate change and fails to give full meaning to practices that minimize resource requirements (Kane and Yohe 2000). The complementarity approach may also play a significant role in the competition for resources and is considered to be insufficient to address existing and expected climate change impacts on the land sector (Duguma et al. 2014b).

Conclusions and recommendations

Both mitigation and adaptation are of critical importance to forests and the broader land-use sector, pointing to the need to understand the linkages between the two as a basis for implementing effective and efficient international and national climate policies, projects and programs. They share similar objectives, which provides a potential basis for their harmonization. Applying adaptation and mitigation synergies in project and program implementation can have multiple benefits, for example, by increasing local people's acceptance of and long-term engagement with projects.

Adaptation–mitigation synergies as a concept is now well established. Realizing the synergies between adaptation and mitigation is an important climate policy objective for which clear scientific evidence exists and research shows an increasing number of synergies with projects on the ground providing useful lessons. However, when addressing the issue at both the national and international level, it will be important to consider appropriate unified policies and strategies, institutional arrangements, and ensure proper and sustainable financial mechanisms to promote the synergy approach (Duguma et al. 2014a). More needs to be done to explore the portfolios of practices that countries would have at their disposal to best synergize mitigation and adaptation, how to set up the required institutional frameworks, including monitoring the performance of synergies efforts

Policy makers at the UNFCCC now have an opportunity to provide guidance to harness these benefits through the implementation of the Paris Agreement and give further consideration to the issue through new negotiations related to nationally determined

10 Article 2.1(b) of the Paris Climate Agreement;

contributions, reporting requirements, MRV (measuring, reporting and verification), non-markets and the technical examination/pre-2020 process.

In formulating policy, attention should be paid to the possible effect that adaptation–mitigation synergies could lead to projects that are more complex and, hence, potentially more expensive than single-objective projects, and that may give rise to efforts to seek funding in circumstances where adaptation is already underfunded. Policy makers will also need to identify and understand the trade-offs and develop policies, to reduce and preferably avoid negative impacts. Trade-offs could be minimized or avoided by putting in place safeguards against the potential negative effects one may have on the other, for example, where mitigation actions cause maladaptation through an increase in vulnerability of ecosystems and local communities.

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