



*With people sitting around: villagers in Nepal discussing a common understanding towards management of community forest. Photo Credit: Nepal Forestry Department. Photo: African Centre for Technology Studies/Joanes Atela*

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# CHAPTER 23

## PES as a potential mechanism for conflict resolution in ecosystem management

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### Highlights

- PES schemes have the potential to resolve resource conflicts amongst different actors and interests in ecosystem services governance.
- PES can incentivize resource management and clarify rights among various social groups involved in resource use.
- PES can also reconfigure roles and promote negotiations among multiple actors, e.g. public bodies, the private sector and local communities, thus harmonizing conflicting interests.
- The effectiveness of PES in resource-conflict resolution can be enhanced by broadening the conceptualization and application of the schemes from technical market-based approaches to those incorporating key principles including equity, representation and participation.
- The potential for PES to resolve conflicts is however hinged on institutional linkage and adequate representation of local community interests in an equitable and just manner, as opposed to a demand-supply-driven approach to such schemes.

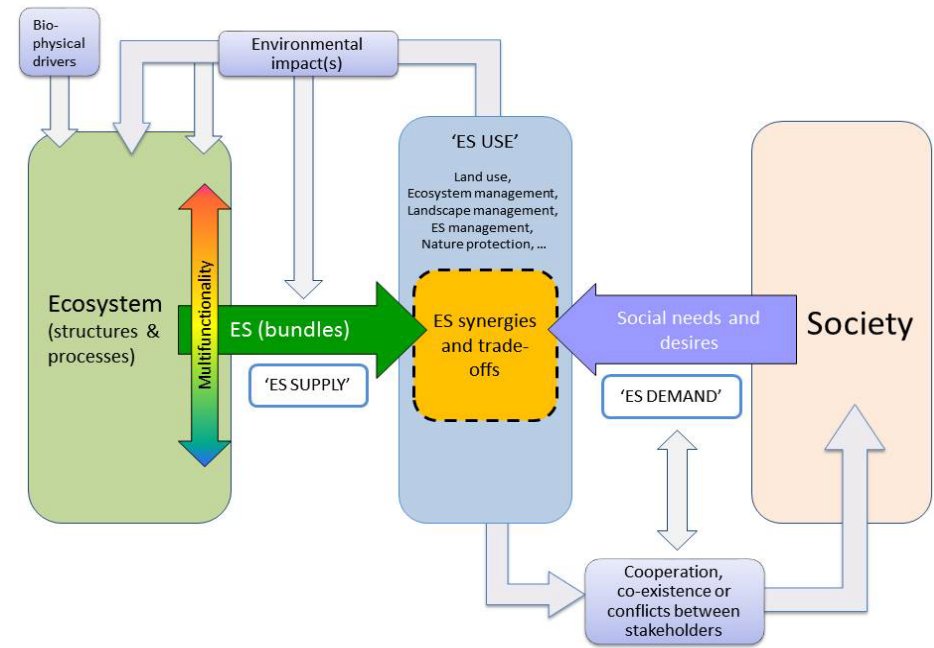
### 23.1 Introduction

The use of ecosystem services draws in multiple actors with different ecological, social and economic values attached<sup>1</sup>. These actors are drawn from global level organizations, such as UN agencies and intergovernmental and nongovernmental agencies, national-level state agencies, the private sector as well as local communities and their alliances, all attaching different values to ecosystem services. The roles that these actors play are at times overlapping as the governance space in management of ecosystems has expanded to include multiple actors including non-state actors and local communities.

In this regard, different actors often have diverse and competing interests over the management of ecosystem services. These divergent interests are often harbingers of contestations among different actors and values attached to ecosystems, giving rise to or exacerbating conflict in the use and management of ecosystem services. This is further enhanced by the fact that many ecosystem functions and services operate across political borders characterized by various socio-cultural and economic interests. For instance, watershed services span both the upper and lower catchment areas inhabited by different communities. This is exacerbated by varying resource entitlement structures in which some actors have more social entitlements than others<sup>2</sup> resulting in concerns of fairness and equity.

Varying resource entitlements for different groups have also played a significant role in inflaming conflict. However, these complications are often underestimated in the efforts to minimize conflict among resource users. In these times of human-caused climate change, payment for ecosystem services (PES) has gained prominence as a tool to actively engage multiple actors, including state actors and non-state actors such as the private sector, in managing ecosystem services<sup>3</sup>. PES has been defined as “a voluntary transaction where a well-defined ecosystem service is bought by a buyer from an ecosystem service provider if and only if the ecosystem service is secured<sup>4</sup>. PES has been used for a variety of ecosystem services including biodiversity (e.g. fees set on wildlife tourism), landscaping, watershed management, carbon sequestration for climate regulation, among others<sup>5,4</sup>. Some scholars argue that PES provides economic incentives for landowners to collectively pursue ecosystem management<sup>6,7,8</sup>. It has also been argued that PES approach has the potential to remedy some of the conflicts emanating from social, economic and ecological interests of actors<sup>1</sup>. For these reasons, PES has gained considerable attention in the effort to sustainably manage ecosystem services and harmonize interests of different ecosystem users and ecosystem services.

This chapter examines various ways in which PES can contribute to conflict resolution among diverging actor interests in ecosystem services. Our aim is to explore approaches and processes in which PES can achieve conflict resolution, supported by case examples from the developing world. We further explore the enablers and hurdles in the potential for PES to resolve conflicts among resource users. We offer concluding remarks at the end.



**Figure 23.1** Conceptualizing ecosystem service flows between nature and society

### 23.2 Conditionality in PES contracts as basis for monitoring

Huberman (2009)<sup>9</sup> has contended that PES is increasingly being utilized as a mechanism for sustaining not only livelihoods, but also as a way of sustaining the natural environment. It has further been argued that PES is dependent on 5 criteria including 1) voluntary transaction

between the actors or stakeholders involved; 2) well-defined land use that would likely secure the ecosystem service being sought; 3) at least one purchaser of ecosystem services; 4) at least one provider of the ecosystem services being sought; and 5) the ecosystem provision that the 'purchaser' of ecosystem services seeks and that the provider is able to secure. In this sense, PES becomes an innovation where stakeholders can continue to access ecosystem services without jeopardizing social goals.<sup>10,11,12,13,3</sup>

It is worth noting however that there are other PES schemes which follow different approaches and criteria while aiming for the same goals and not necessarily following market-based approaches<sup>14</sup>. This has meant that there are broader approaches to the conceptualization of PES, a divergence from Wunder's conceptualization. These divergences have sought to move from the mainly market-based conceptualizations of PESs to also focus more on complex underlying social, political and biophysical dynamics between the environment and humans in addition to the institutional contexts in which human interaction takes place<sup>15</sup>. In this regard, broader conceptualizations of PES have looked at them as mechanisms that can enhance regional development, entrenched in social action, values and perception<sup>16,17</sup>. Further, these broader conceptualizations also account for transparency of PES systems, decision making and establishment of legitimacy for environmental services. These have been critical issues that have formed the basis of the arguments to broaden conceptualizations of PES from the more neo-classical and market-oriented approaches.<sup>18,17</sup>

PES has however been viewed as an attractive approach since it is based on ensuring that land users, especially those who are from low-income parts of the community, can be encouraged to engage in sustaining the natural environment on their land through payments from ecosystems service purchasers. This would go some way in at the very least covering the opportunity costs of more environmentally friendly land usage<sup>6,4,13</sup>. PES stems from global policy efforts to conserve ecosystems for sustainable development, as was emphasized in the 1992 Conference on Environment and Development.<sup>19</sup>

Initially, ecosystem management was mainly undertaken through integrated conservation and development projects (ICDPs) which were essentially project-based initiatives targeted to conserve forests and biodiversity while supporting socio-economic development activities in local settings of developing countries<sup>20,21,22</sup>. Evidence from Africa<sup>23</sup> and Asia<sup>24</sup> however shows that, despite the widespread implementation of ICDPs in developing countries, these initiatives have not adequately addressed underlying drivers of resource degradation<sup>22,25</sup>. This is through absence of linkages with regard to the interests of various actors interested in ecosystem services at various levels of governance<sup>22,21</sup>. In this context, PES emerged as a useful tool for reconciling actor interest and enhancing public-private partnerships (PPP) and a tool for actively engaging multiple actors<sup>3</sup>. Further, it has been argued that PES invokes market institutions to incorporate various actors including the private sector to invest in ecosystem management and in so doing harmonizes interests of these actors compared to ICDPs where private-sector interest was only captured through corporate Social Responsibility.<sup>6,8,7</sup>



## 23.3 Data and information framework

PES opens up avenues and opportunities for remedying and mitigating conflicts that emerge from social, economic and ecological interests of actors<sup>1</sup>. This role takes on diverse aspects, including

### **i. PES as an avenue for promoting negotiations and cooperation among multiple actors**

PES enhances communication between various stakeholders with varying interests in ecosystem services. Since the conceptualization of sustainable development concerns by the Brundtland commission, various forums have emerged to bring together diverse actors ranging from scientists, the private sector, local communities and policymakers to interact and harmonize their interests in ecosystems dialogues<sup>26</sup>. Globally, PES has been a central tool in the global negotiations on climate mitigation options. To date, carbon-trading schemes occupy a central place in international climate agreements in which state and non-state actors have agreed to reduce greenhouse gas emission partly guided by PES principles. For instance, private-sector interest in economic returns beyond the limits of growth often conflicts with UN interest in sustainable development and also causes climate change that interferes with local communities' livelihood interests. PES has however enabled harmonization of these conflicting interests by allowing actors to trade carbon-dioxide equivalents and compensate for livelihood losses resulting from the emissions.

At regional scale, PES has become a crucial tool for enhancing cooperation between states and communities on transboundary resources such as forests, parks and even water bodies. Through PES-based initiatives, the concept of regional environmental cooperation has been seen as critical for regional stability and friendship<sup>27</sup>. Martin et al (2011)<sup>28</sup> found that increasing cooperation through PES in international transboundary resources such as forests, parks is synonymous with reducing conflicts in the Congo Basin. For instance, in the Great Limpopo Transfrontier Park of South Africa, PES has enabled more formal cooperation through agreements and joint institutions, enhancing cooperation and reducing conflict<sup>29</sup>. Conversely, it has been demonstrated that informal low-level cooperation in managing ecosystems, with little application of PES, has been associated with high levels of conflict among states or communities. This was the case in the Virunga National Park of the Democratic Republic of Congo, where no PES-related institutions had been optimized in bringing together concerned parties, thus exacerbating conflict in the 1990s.

At the local level, evidence shows that PES provides a platform to build local institutions for enhanced negotiations with various interests. Specifically, PES has in some instances helped build institutions that support participation, equity and rights and thereby reducing conflict. One example is the forestry carbon scheme Kasigau corridor REDD+ project in Kenya. The scheme works with local communities to generate and sell carbon credits from a rangeland. Through PES principles on participation and benefit sharing, the project has helped to reduce conflict over communal land ownership and management. Prior to the REDD+ project, richer and more powerful individuals in the area were interested in having the communal land subdivided into purchasable pieces they could acquire using their wealth, which conflicted with the interests of poorer individuals who depended on the land for firewood and other provisioning services. Through building institutions for participation and benefit sharing in line with UNFCCC safeguards, the REDD+ project helped bring together various land owners including ranch shareholders, private land owners and community members to negotiate on a benefit-sharing formula that accounts for these interests. The agreed benefit sharing mechanism appeared to strengthen entitlements across social groups in a manner that minimized conflict<sup>30</sup>. Another example is Latin America's Fondo Bioclim carbon project where

it was found that PES created institutions that enhanced cooperation among local communities and in doing so enhanced legitimacy of the scheme and reduced conflict.<sup>31</sup>

## **ii. PES as incentivizes resource management to reduce conflict**

As already highlighted above, PES emerged as a useful tool for reconciling actor interest and enhancing public-private partnerships (PPP). A central feature of PES is that the scheme uses markets for ecosystem services to create economic incentive for land owners to conserve resources and minimize conflict that could arise from overexploitation. Evidence from various PES activities in developing countries e.g. watershed management in Kenya<sup>32</sup> and payment for carbon in Mozambique<sup>33</sup> reveals that these schemes provide economic incentive for land owners to protect ecosystems. Furthermore, the schemes enhance adaptation to climate change and minimize conflict arising from externalities.

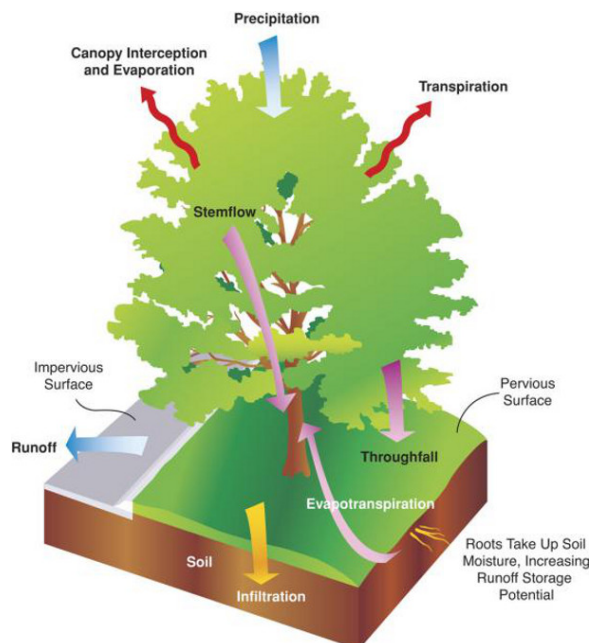
PES has two main incentive features that can be linked to conflict resolution: rewards/payments and compensation. These incentives are crucial in reducing conflict especially when a public ecosystem service depends on private actions. Rewards emanating from PES in this case reflects a just and equitable price for services rendered<sup>4</sup>. The principle is that every actor who delivers an ecosystem 'good' should be rewarded. This principle incentivizes actions from actors linked in various parts of an ecosystem, e.g. upper catchment activities that would support the interest of those in the lower catchment. For instance, in Asia, the Rewarding the Upland Poor for Environmental Services (RUPES) programme has minimized conflict between upstream and downstream catchment inhabitants.<sup>34</sup>

PES also provides incentives through compensation that minimizes conflicts between resource users. Compensation here refers to paying for the (opportunity) cost the service supplier has suffered, and applies only to those who bear the costs of the scheme, whereas rewards/payments are given to anyone delivering the service. At the global level, compensation was established through the Dublin Principles which conceptualized water as an economic good and highlighted compensation as one of several ways to redress environmental grievances. The aspect of compensation in PES has been applied in many instances to curtail conflicts that may arise from ecosystem custodians. For instance, a review of 15 initiatives in Asia and Africa that compensated local communities for watershed services revealed that such compensation can enhance social cohesion among community members<sup>35</sup>. Specific cases in India where, through the compensation schemes, village communities came up with innovative social arrangements to secure watershed services are an example. These arrangements enhanced collective efforts between upstream and downstream water users to conserve the catchment area<sup>35</sup>. Compensation has also helped reduce conflict in wildlife management. An example is the compensation mechanism instituted around Nairobi Park in Kenya where farmers are compensated for any damage to livestock and crops caused by wildlife.<sup>36</sup>

## **iii. PES as a catalyst for creating institutional conditions for conflict resolution**

PES operates within market conditions and rules that, if observed, have been shown to potentially catalyse peace-building among resource users. PES schemes are characterized by two main institutional conditions aimed at streamlining actions to meet market conditions. These are assignment of rights and role, and monitoring compliance<sup>4</sup>. In terms of assignment of rights, most PES schemes operate effectively where rights to an ecosystem are well defined and defensible. At the global level, decisions on PES schemes have emphasized the need for PES to clarify and respect rights of various interested stakeholders. For instance, negotiations on PES schemes such as carbon trading have established safeguards that outline the need to engage all stakeholders in decisions and respect the rights of various forest users in designing and implementing the schemes. International multilateral agencies involved in supporting PES

such as the World Bank have also designed PES schemes targeting energy (CDM), biodiversity, agriculture and forestry. These schemes have been designed with Strategic Environmental and Social Assessment (SESA) principles aimed at ensuring rights and participation of affected stakeholders.



**Figure 23.2** Understanding the ecosystem flows and dynamics. Photo: Google images

Conflict often emerges where a lack of well-defined rights degenerated into inequitable benefit sharing or no benefits at all to some actors. Therefore, clarifying rights and emphasizing equitable benefit sharing in PES schemes significantly reduces the potential for conflict between actors such as local communities and investors. Re-establishing conditions on rights and equity provides a force for peace locally, regionally and globally by helping to internalize norms and establish actor identities in ecosystem management<sup>37</sup>. Some lessons can be drawn from the case of the Tsavo National Park in Kenya where poorly defined rights and benefit-sharing mechanisms saw all benefits channelled to the central government rather than to local communities. This then resulted in conflict between local institutions, households and the Kenya Wildlife Service (KWS). However, the application of PES in the area through the Kasigau REDD+ project has more clearly defined rights and benefit sharing, with evidence emerging that local communities are happier and more at peace with the PES project than with the Park scenario.

Compliance is one of the key conditions underpinning PES and needs to be monitored. Various PES schemes have thus called into being various monitoring standards that inform reward and ensure that the various actors meet their roles and commitments, which ultimately also reduces conflict, especially between ecosystem producers and ecosystem buyers. Examples are the Voluntary Carbon Standards (VCS) that are often applied to verify whether an ecosystem supplier has delivered credible and quality ecosystem services in line with the agreements. In some PES schemes, such monitoring may involve regulations, penalties or fees for non-compliance. In watershed management for instance, penalties are often imposed for failure to comply with pollution and compensation levels as required by

PES. Such penalties reduce existing and potential conflicts between commercial and domestic water users.<sup>38</sup>

23.4 Enabling conditions for PES to resolve conflicts

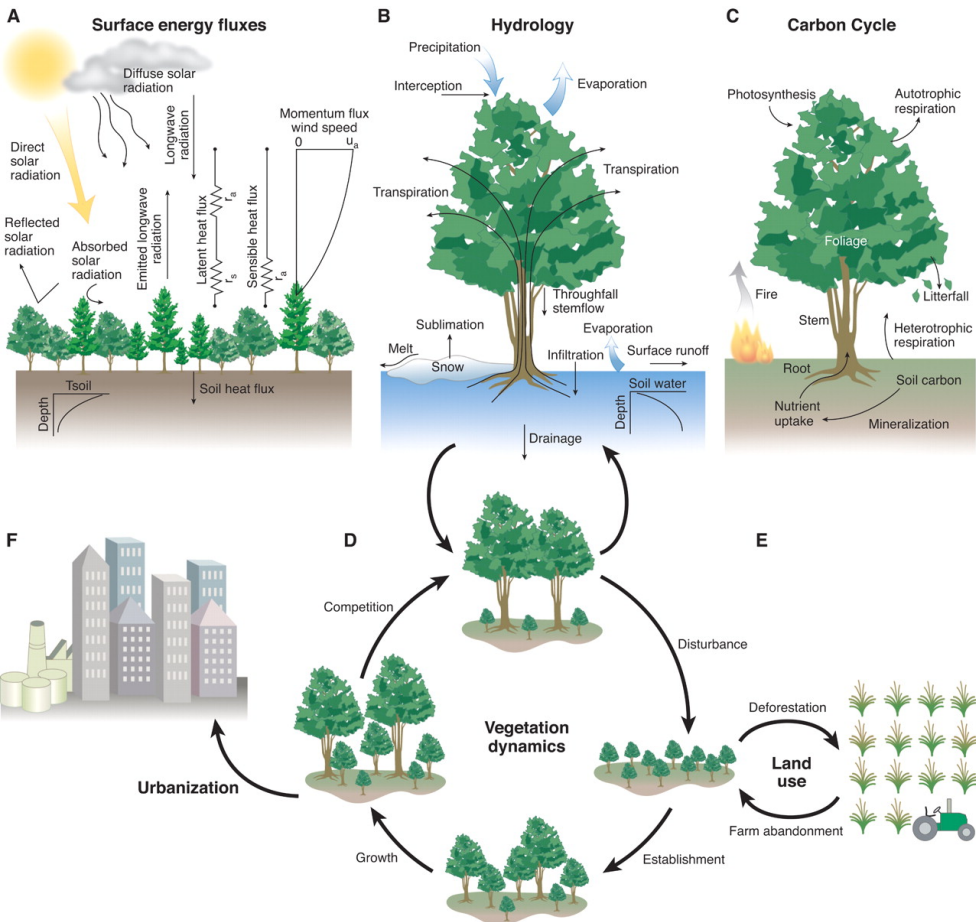


Figure 23.3 Description of ecosystem services drawn from forest

The previous section indicates that the potential of PES to curtail conflict is subject to several factors including issues of equity, rights, and institutions. This section briefly highlights some of the enabling conditions that could improve the role of PES in conflict resolution.

First, equitable representation of actors in PES decisions is paramount. This is critical especially in enhancing communication and cooperation among actors with varying interest. In most cases, conflict arises in situations where the needs of some stakeholders, especially local communities, are not well represented in a project's design, implementation and benefit sharing. This is more so because most PES schemes are designed through a top-down approach with little consideration for local voices<sup>39</sup>. Ensuring that all actors with a stake in ecosystem services are consulted, that they have full understanding of the ecosystem value, that they embrace the mutual benefits produced by the ecosystem service, and that their views are incorporated in decisions should therefore help minimize conflict<sup>1</sup>. Further,



equitable representation in decisions enables actors to understand their mutual dependence on each other and to build trust and norms in a given PES scheme.

Second, strengthening institutional linkage and coherence across and between different levels of governance relevant to PES is critical. While PES has been an avenue for cooperation among states, especially at the international level, this cooperation may not necessarily filter down to national levels where various actors and sectors may also have a stake in the services. Contextual issues such as livelihoods that may be threatened through certain PES standards, as well as state-led centralization regimes may limit how PES resolves conflict. Conversely, consistent rules and standards can support faith in collective action and minimize conflict. PES rules and standards therefore need to be harmonized across global, national and local levels.

Third, equitable and just revenue sharing and investments are critical for PES to support conflict resolution. While most PES schemes are designed to operate within formal market conditions, harmonizing these conditions with informal contextual circumstances such as local livelihood strategies could further unlock the potential of PES. Several studies show that sharing the benefits to local livelihoods is a key area of interplay between formal PES rules and practical implementation especially at the local level<sup>40,41,42</sup>. Most ecosystem services are hosted at the local level where livelihood needs emanating from the services are a priority. Cases where local livelihoods have been compromised through PES have often devolved into conflict.

Strategically supporting the livelihoods that rely on these ecosystem services can enhance conflict resolution through PES. One key approach that has been established in literature is the pro-poor approach where PES actions are strategically targeted at increasing the assets and capabilities of the poorer people in any given setting, while avoiding harm<sup>43,44</sup>. The case of the Kasigau project highlighted earlier reveals that the approach has accelerated conflict resolution between rich land owners and poor landless peasants while enhancing delivery of the ecosystem service itself.

While the advantages are abundant and clear, it is important that PES meet the aforementioned enabling conditions for it to be an effective mechanism for resolving resource conflicts. Indeed, the sustainability of PES has been subject for debate since some scholars have argued that PES schemes are created and legitimized through time-bound international agreements<sup>31</sup>. Caution is also urged over the rights of local communities, especially where ecosystem services span cultural boundaries with various preferences for rewards. Purely market-based conceptualizations of PES are particularly unlikely to achieve equitable outcomes for local communities, who are often excluded from the global and national decisions<sup>10,31,39</sup>. This exclusion has raised concern about equity and rights in PES schemes such as forestry carbon payments in most parts of Africa where entitlements are likely to be seized by powerful private-sector investors interested in profits and centralized state institutions interested in national GDP with unclear linkages to local livelihoods.<sup>42,45,1</sup>

Crucially, as PES is a way of negotiating various actors' interests and thus increasing its legitimacy, it is important to note that designing and implementing PES often involves power relations that open up opportunities for further conflict, especially at the local level. Some PES schemes such as forestry carbon schemes involve resources utilized by local people for their livelihoods. There have been concerns that such resources could be 'captured' by powerful business investors, exacerbating conflict.

Evidence shows that elite capture and subsequent conflicts often stem from weak institutions and institutional linkages including unclear land tenure and poor enforcement of rights, which characterizes most developing contexts<sup>33</sup>. Eraker<sup>46</sup> refers to the case of a commercial

plantation project in Uganda which barred local households from both tree and non-tree forest products, causing loss of income for the entire community and subsequent revolt by this local community. In the case of the Kariba forestry PES scheme in Zimbabwe, the PES scheme creates potential for conflict between two social groups as rich immigrants expect the scheme to displace indigenous locals who have been blamed for forest degradation<sup>47</sup>. It is worth noting that improper conceptualization and execution of PES may create false and unrealistic expectations among local communities. This happened when the Vision 2050 forestry scheme in Ghana was unable to meet its promises to the local people, who in turn abandoned certain forest-based livelihood practices and took responsibility for planting trees along the forest transition zone.<sup>48</sup>

## 23.5 Conclusion

This chapter has explored the potential role of PES in conflict resolution among resource users. Drawing on evidence from cases across Africa, Asia and Latin America, we presented specific ways in which PES institutional architecture and associated conditions can support conflict resolution by harmonizing interests.

The upshot is that, while appropriately conceptualized PES schemes do have the potential to mitigate resource conflicts, they are by no means a panacea, and have duly been approached with a level of caution. Given the complex and dynamic nature of resource conflicts, we argue that PES's ability to contribute to their resolution is hinged on the approaches taken in the design and execution of the schemes, and the consideration given to actor representation, equity, rights and institutional robustness, especially at local level.

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