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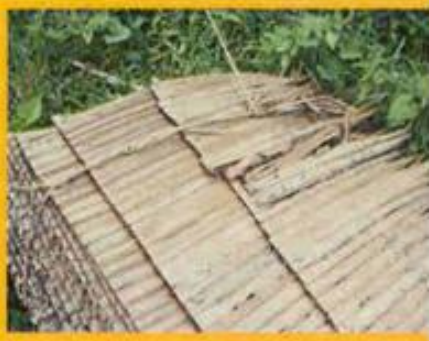

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Payments for Environmental Services (PES) as innovative financing mechanism for adaptation to climate change in Ghana

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Payments for Environmental Services (PES) as innovative financing mechanism for adaptation to climate change in Ghana

Centre for Advanced Training in Rural Development on behalf of the 'Centre for International Forestry Research' (CIFOR) and the Advisory Service on Agricultural Research for Development of the 'German Technical Cooperation' (GTZ/BEAF)

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Executive summary

The objective of this study is to analyse the potential and constraints of Payments for Environmental Services (PES) as a mechanism to finance adaptation measures to climate change in Ghana. It was conducted on behalf of the Centre for International Forestry Research (CIFOR) and the Advisory Service on Agricultural Research for Development of the German Technical Cooperation (GTZ-BEAF). The core idea of PES is to create financial incentives for local land users to adopt sustainable land- and resource uses that secure the conservation and/ or restoration of an ecosystem. Land users (service providers) have a direct impact on the ecosystem through their land use practices and therefore on the provision of environmental services (ES). External beneficiaries of ES compensate service providers (e.g. farmers) through direct payments for securing the provision of these services.

In the tropics the rural population not only has a direct impact on the ecosystem but usually depends heavily on ecosystem services derived from tropical forests. Tropical forests for example contribute to the livelihoods of the poor through the provision of food, fodder and building materials, the diversification of income, the regulation of extreme weather events, and the provision of option values of biodiversity. This enables the local population to better cope with climate changes. Their dependency on these ecosystem services makes them more vulnerable to climate change induced environmental degradations. Considering this logic, strategies that secure the conservation or restoration (through afforestation and reforestation) of tropical forests and thus biodiversity can be seen as measures to increase the adaptive capacity of the rural population to climate change impacts. Within the proper institutional framework PES is a tool, which can finance this kind of adaptation measures.

In our study we conducted a general assessment of the institutional framework and key stakeholders on national level and a local case study in order to analyse and evaluate the main components (potential environmental services, providers, buyers, and the local institutional framework) of a PES scheme. The study site for our local case study on biodiversity-related PES was the fringe area of the Ankasa Conservation Area (ACA) in the south-western region of Ghana. The ACA belongs to the Upper Guinean Rainforest, one of the remaining biodiversity hotspots. For our data collection, we randomly selected 14 spots in the forest fringes of the ACA to conduct focus group discussions and ecological assessment. Semi-structured interviews were conducted with key stakeholders on local and national level.

Our findings indicated that PES itself is already discussed by state and non-state stakeholders. But there is a lack of interest in conservation issues in Ghana.

The promotion of economic sectors like the cocoa and timber industry competes with the goals of a biodiversity related PES scheme. We also assessed a lack of awareness about the contribution of forests to adaptation to climate change and missing coordination between stakeholders in adaptation processes. However, there is awareness on the connection between intact forest ecosystems and livelihoods of the local population. We identified stakeholders from state and non-state institutions that are engaged in projects and programmes concerning biodiversity conservation, such as the promotion of community-based natural resource management.

For the set up of any future PES scheme in Ghana, up-front funding must be provided, including the funding of feasibility studies, training programmes, and capacity building measures. The sources of funding comprise government funds, international funds and funding through international NGOs. The Official Development Assistance (ODA) for the sector of natural resources and environment is subject to budget funding. Therefore the chance to ensure up-front funding for PES through the Ghanaian Government strongly depends on the priorities of the funding agreements between the government and its development partners. In the case of bilateral donor funding, up-front funding for PES schemes could fit into the cross-cutting issues climate change and biodiversity. Possible global funding could entail funds from the World Bank, the Global Environmental Facility or from international conservation NGOs.

Concerning the payments for environmental services our findings indicated, that watershed protection gains higher interest on national level (governmental institutions as potential buyers), while buyers for biodiversity protection and restoration are located on international level (payments by multilateral funds and international conservation NGOs). Therefore the bundling of watershed and biodiversity related environmental services seems to be the most promising approach for a potential PES scheme in Ghana. Linking forest related environmental services and adaptation funding options for PES from international adaptation funds might be possible.

For the implementation of a biodiversity-related PES scheme in the fringes of the ACA we identified several constraints. The most fundamental are:

1) **Existent drivers for deforestation:** Commercial (over)exploitation of natural resources that imply high opportunity costs and underlying structural reasons which cannot be altered by a PES scheme (e.g. population growth, migration processes).
2) **Small dispersed native forest patches:** Due to the existing disincentives towards the conversion of forestland into farmland only few native forest patches are left in off-reserve areas that could be of interest for conservation

through PES. The dispersed locations and the small sizes of landholdings require the organisation of farmers, which causes high transaction costs.

3) **Present land tenure system:** The traditional authorities have the power over land- and resource use practices on stool land and must be involved in any decision making process concerning land use changes. Farmers do not have real land use options and risk losing their land if they do not cultivate it. Our study also indicated a low level of trust between landowners and land users.
4) **Present benefit sharing system:** The present benefit sharing system does not secure payment flows towards the service providers (farmers), especially concerning timber revenues. Conservation and restoration of forests is thus not considered as an attractive option for most land users.
5) **Weak law enforcement and lack of effective monitoring regarding the trade of bush meat and illegally extracted NTFP:** This fact undermines the additionality of land use changes through PES around the ACA for biodiversity benefits on-reserve.

Based on our findings we consider farmers to be the most appropriate service providers for the implementation of a PES scheme in the fringe areas of the ACA, as they are most likely to secure service provision through land use changes and opportunity costs are most likely to be moderate. The land use change options to secure the provision of ES around the ACA considered in this study are afforestation, reforestation and other sustainable land use practices like agroforestry. Concerning afforestation and reforestation farmers would only provide uncultivated parts of their farmland, while improving or intensifying the agricultural productivity on the cultivated parts. For the introduction of sustainable land use practices like agroforestry the major constraint is that farmers are lacking experience while at the same time the agricultural extension service is lacking capacities.

Concerning the local institutional framework PES can only work on stool land if the traditional authorities that are landowners are willing to participate in such a scheme. As land users and landowners would act as providers of ES, this would increase the transaction costs of a potential PES scheme. Therefore it seems more promising to induce land use changes on private or family land, where the landowners themselves can decide on land use practices themselves. A precondition is the access to land titles and the official registration of planted trees. Furthermore for a potential PES scheme a reform of the present benefit sharing system would be necessary to ensure that revenues reach the communities on local level. On local level, there are several institutions (e.g. NGOs, Community Resource Management Areas) that could act as

intermediaries to facilitate negotiation processes, monitor the agreements and manage payments.

Our ecological study indicated that there is little connection between the land use pressure off-reserve and the ecological intactness of the ACA. The ecological state seems only to be determined by former logging activities in the reserve, the law enforcement activities, and the willingness of the fringe communities to accept the protective status of the ACA. We conclude that a biodiversity related PES needs to be based on biodiversity rich forest patches, which e.g. could be found in a buffer zone with comparably low protection status. Unfortunately there is no gazetted buffer zone around the ACA. Therefore it will be difficult to find potential buyers to finance a biodiversity-related PES scheme around the ACA. Thus, for a PES scheme that is related to biodiversity conservation and adaptation to climate change other sites should be taken into consideration. For example the Global Significant Biodiversity Areas (GSBAs) seem to be appropriate sites. As we were able to assess through the ecological field study, monitoring costs are low and not a limiting factor for the implementation of a PES scheme.