

# **Payments for ecosystem services: an assessment of existing and possible reward mechanisms for ecosystem services in the Pendjari Biosphere Reserve, Benin**

Betalingen voor ecosysteemdiensten: een evaluatie van beloningsmechanismen voor ecosysteemdiensten in het Pendjari Biosfeer Reservaat, Benin

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## ABSTRACT

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Payments for ecosystem services (PES) have become a well-known concept in the field of nature conservation. The idea is to close the gap between the real value of ecosystem services (ES) to human well-being and the value reflected by conventional markets, which often neglect negative effects of economic activities on ecosystem services. PES projects mainly focus on the protection and restoration of natural resources, but at the same time often linked to poverty alleviation in developing countries. The study area of this thesis concerns the Pendjari biosphere reserve in northern Benin. The riparian population living along two roads bordering the reserve pose a (long-term) threat to the provisioning of several ES. This study checks whether PES schemes can already be identified here and which ES have potential to develop one in the future. First, the local context is sketched based on literature and interviews with local experts. The results are presented coherently using the DPSIR framework. In this way, a cause-effect chain is established for the study area. This is complemented by focus groups organized with local communities, which allowed us to identify the priority ES in the study area. In general, cultivated goods obtained by agriculture are considered the most important. The vast majority of the population also value domestic water and tourism more than other ES. In the next part of this thesis four ES are fully assessed: agriculture, water, tourism and carbon. If possible a rough estimate of the value of the ES is given. Thereafter, all aspects of a PES project concerning improved cooking stoves are evaluated. Our findings indicate, on the one hand, the impressive efficiency of the wood consumption and, on the other hand, the major shortcomings of the project which largely nullify the outcome. Finally, the potential of the four previously mentioned ES is discussed based on all available information. Above all, tourism and carbon seem to have the most potential. Some promising PES chains could be identified and the perspectives for the future look rather good. However, the two ES face great challenges. The long chain between buyers and providers causes problems and is a major disadvantage for carbon PES. Tourism is currently undergoing major changes by the replacement of the park management and the future is uncertain. Our findings suggest that PES schemes are less likely to develop in the field of water and agriculture. Little progress has been made and the PES chains are very local. Agriculture is, moreover, not very suitable for PES according to literature, since it is often an alternative for PES systems.