GUIDELINES FOR GENDER AND SOCIALLY INCLUSIVE PAYMENT FOR ECOSYSTEM SERVICES FOR THE WATER SECTOR IN KENYA

ENVIRONMENT FOR DEVELOPMENT – KENYA

(EFD-KENYA)

Authors: *Richard Mulwa, Michael Ndwiga, Elly Musembi, Beatrice Kanani*

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FOREWORD

Water is an essential resource for life, yet its sustainability is increasingly threatened by environmental degradation, climate change, and inequitable management practices. To address these challenges, the Payment for Ecosystem Services (PES) approach offers a transformative mechanism for promoting environmental conservation while ensuring socio-economic equity. By recognizing and compensating the stewards of our ecosystems, PES has the potential to enhance water resource management and support livelihoods in Kenya. These guidelines are a critical step toward actualizing this potential. The guidelines are a culmination of extensive research, stakeholder engagement, and lessons learned from global PES practices, particularly from Costa Rica. They are designed to provide practical and actionable frameworks for integrating gender and social inclusivity into PES schemes, ensuring that no group is left behind in the distribution of ecosystem service benefits.

We are deeply grateful to the Environment for Development (EfD) Initiative for their funding and to all stakeholders who contributed to the development of these guidelines. Their insights and collaboration have enriched this document, making it a robust tool for policymakers, practitioners, and researchers in Kenya's water sector. It is our hope that these guidelines will serve as a roadmap for establishing effective PES schemes that not only conserve our precious water resources but also foster equity, sustainability, and resilience in our communities. Together, let us work toward a future where Kenya's water ecosystems are protected, and the people who rely on them are empowered.

Richard Mulwa (Prof.)

CENTER DIRECTOR, ENVIRONMENT FOR DEVELOPMENT KENYA

ACKNOWLEDGEMENTS

The development of these guidelines for a socially and gender-inclusive Payment for Ecosystem Services (PES) in Kenya would not have been possible without the generous support and contributions of numerous individuals and organizations. We extend our deepest gratitude to Environment for Development (EfD) for their funding and unwavering commitment to this initiative. Their support has been instrumental in advancing this critical work. We sincerely thank the stakeholders in the water sector, including policymakers, community representatives, civil society organizations, and private sector partners, for their invaluable contributions during various stakeholder meetings. Their insights and diverse perspectives have enriched the guidelines.

Our appreciation goes to the researchers at EfD Kenya, as well as the researchers from Costa Rica and Sweden, whose expertise and insights provided a global perspective, helping us adapt international best practices to the Kenyan context. Special thanks to the dedicated EfD Kenya staff for their outstanding support in organizing stakeholder meetings and their contributions to the development of these guidelines. We also recognize the efforts of other contributors, including local community representatives, government agencies, and academic institutions, whose collaborative efforts and shared vision have made this work a success. Lastly, we acknowledge the countless hours of dedication by all participants and stakeholders who share our goal of achieving sustainable water resource management through inclusive PES schemes.

ABBREVIATIONS AND ACRONYMS

ADR	:	Alternative Dispute Resolution
CBO	:	Community-Based Organization
CNA	:	Capacity Needs Assessment
CSR	:	Corporate Social Responsibility
KEWI	:	Kenya Water Institute
KPIs	:	Key Performance Indicators
M&E	:	Monitoring and Evaluation
MOU	:	Memorandum of Understanding
NET	:	National Environment Tribunal
NGOs	:	Non-Governmental Organizations
PES	:	Payment for Ecosystem Services
PPPs	:	Public Private Partnerships
SDGS	:	Nations Sustainable Development Goals
WRA	:	Water Resources Authority
WRUA	:	Water Resources Users Association
WTA	:	Willingness to Accept
WTP	:	Willingness to Pay

CHAPTER ONE: INTRODUCTION

1.1 Background Information on PES

Ecosystems are dynamic and interdependent systems that provide essential services, such as clean air, water, food, and climate regulation (MEA, 2005). However, they face significant challenges, including pollution, habitat destruction, climate change, and resource overexploitation, which threaten their ability to sustain these services (Millennium Ecosystem Assessment, 2005; Díaz et al., 2019). To protect and conserve ecosystems, it is critical to implement strategies like enforcing environmental regulations, promoting sustainable practices, restoring degraded habitats, and creating protected areas (TEEB, 2010; CBD, 2020). In the case of water ecosystems, targeted actions such as reducing pollution, improving water management practices, and utilizing Payment for Ecosystem Services (PES) schemes can incentivize conservation efforts, ensuring long-term water security and ecosystem health. These combined efforts are necessary for maintaining ecosystem resilience and safeguarding crucial resources like freshwater (Mellado et al., 2018).

The current status of PES in Kenya's water sector is underdeveloped, with traditional approaches primarily relying on command-and-control mechanisms rather than market-based incentives. While Kenya has made strides in integrating environmental policies, PES schemes are not yet widespread or systematically implemented in the water sector. Key gaps include insufficient gender and social inclusivity, where marginalized groups, particularly women and vulnerable communities, often lack access to the benefits derived from ecosystem services despite being key providers and stewards of these services. Institutional fragmentation and limited coordination between stakeholders, including government agencies, local communities, and the private sector, further hinder the effective implementation of PES. There are also capacity and awareness gaps, with a lack of understanding on how to design and operationalize PES mechanisms. Opportunities to address these gaps include leveraging community participation, applying gender-sensitive approaches, and learning from global best practices, such as Costa Rica’s PES model, which can be tailored to fit Kenya’s specific needs for equitable and sustainable water management.

1.2 Rationale

The need for PES guidelines in Kenya is driven by several key factors. First, the increasing degradation of watersheds across the country has raised concerns about the sustainability of water resources. Traditional command-and-control approaches to environmental management have proven inadequate in addressing the scale of these challenges. Market-based mechanisms, such as PES, provide an opportunity to incentivize the conservation and sustainable management of ecosystem services. However, the absence of such market-based systems highlights the need for a well-structured framework to compensate communities and individuals for their role in protecting these vital resources. Second, the PES guidelines must incorporate considerations of gender and social inclusion. In many rural and marginalized communities, women and other vulnerable groups play a critical role in the stewardship of natural resources. Yet, they are often excluded from the benefits of ecosystem services. The guidelines will ensure that PES schemes are designed to be inclusive, recognizing the contributions of all stakeholders, and ensuring equitable access to the benefits derived from ecosystem conservation.

Furthermore, the PES guidelines help to ensure an equitable distribution of benefits from ecosystem services. By structuring the compensation mechanisms fairly and transparently, the guidelines will aim to balance the distribution of financial rewards and incentives, preventing the concentration of benefits among a few whilst ensuring that disadvantaged groups also benefit. These guidelines will also play a key role in supporting sustainable water resource management in Kenya. As the country faces increasing pressure on its water resources due to population growth, climate change, and unsustainable land use, PES provides an innovative tool to promote long-term conservation and sustainable management. By integrating PES into Kenya's water governance framework, the country can enhance the resilience of its water ecosystems and ensure its ability to provide essential services for future generations. Finally, the development of these PES guidelines aligns with both national and global conservation goals, including the United Nations Sustainable Development Goals (SDGs). The SDGs, particularly Goal 6 (Clean Water and Sanitation) and Goal 15 (Life on Land), emphasize the importance of sustainable resource management and the protection of ecosystems. By promoting PES as a tool for conservation, Kenya will contribute to these global efforts while ensuring the sustainable management of its own water resources.

1.3 Objectives

The primary objectives of developing the PES guidelines are to:

a) Develop comprehensive guidelines for designing and implementing a PES scheme specifically tailored to the water sector in Kenya. These guidelines provide a clear framework for integrating PES into water resource management, promoting conservation, and ensuring the sustainable provision of ecosystem services.
b) Establish modalities for incorporating gender and social considerations into the PES guidelines. This ensures that the benefits of PES schemes are equitably distributed and that all stakeholders, particularly women and marginalized groups, are included in the decision-making processes and benefit from ecosystem service payments.

1.4 Scope

The scope of these guidelines focuses specifically on the water sector in Kenya, aiming to address the challenges and opportunities for integrating PES in the management of water resources. The guidelines serve as a comprehensive framework for stakeholders within this sector, ensuring that PES is designed and implemented effectively and inclusively to promote sustainable water management and ecosystem conservation. The target groups for these guidelines include a diverse range of stakeholders, each of whom plays a critical role in the water sector. These include local communities who are both stewards and beneficiaries of ecosystem services, policymakers, and government agencies responsible for regulating and overseeing water resource management, natural resource managers who implement conservation strategies on the ground, and development partners who support the implementation of PES schemes through funding and technical assistance. Additionally, research and academic organizations contribute valuable knowledge and analysis to the development of PES schemes, and civil society organizations, particularly those advocating for environmental sustainability and social equity.

1.5 Regulatory and Institutional Framework

The regulatory framework governing water resource management and ecosystem services in Kenya is shaped by several key pieces of legislation. The Constitution of Kenya (2010) provides a foundational legal framework for the protection and management of the environment, including the right to a clean and healthy environment. The Environmental Management and Coordination

Act (EMCA) No. 8 of 1999, revised in 2002 and amended in 2015, sets out guidelines for environmental management in Kenya, with provisions for sustainable natural resource use. The Environmental Easements Act provides mechanisms for the creation of agreements aimed at conserving ecosystems, while the EMCA Water Quality Regulations (2006) and the EMCA Regulation on Wetlands, River Banks, Lake Shores, and Sea Shore Management (2009) further focus on the protection and sustainable management of water bodies and aquatic ecosystems. The Water Act (2002) is a key piece of legislation that governs water resource management, focusing on the efficient and sustainable use of water in Kenya. The Forest Conservation and Management Act (2016) also plays an important role in regulating forest ecosystems, which are closely linked to water catchments and watershed health.

The institutional framework for water supply and management in Kenya involves various government agencies and stakeholders (Figure 1). The Ministry of Water, Sanitation and Irrigation oversees national water policy and programs, while institutions like the Water Resources Authority (WRA) manage water resources at the national and regional levels. The Kenya Water Institute (KEWI) provides training and research on water resources. In addition, county governments play a crucial role in water management at the local level, and there are numerous civil society organizations and private sector players involved in water-related issues. Effective coordination among these institutions is vital to the success of PES schemes, as they will be required to work together to implement and enforce guidelines for the sustainable management of water ecosystems.

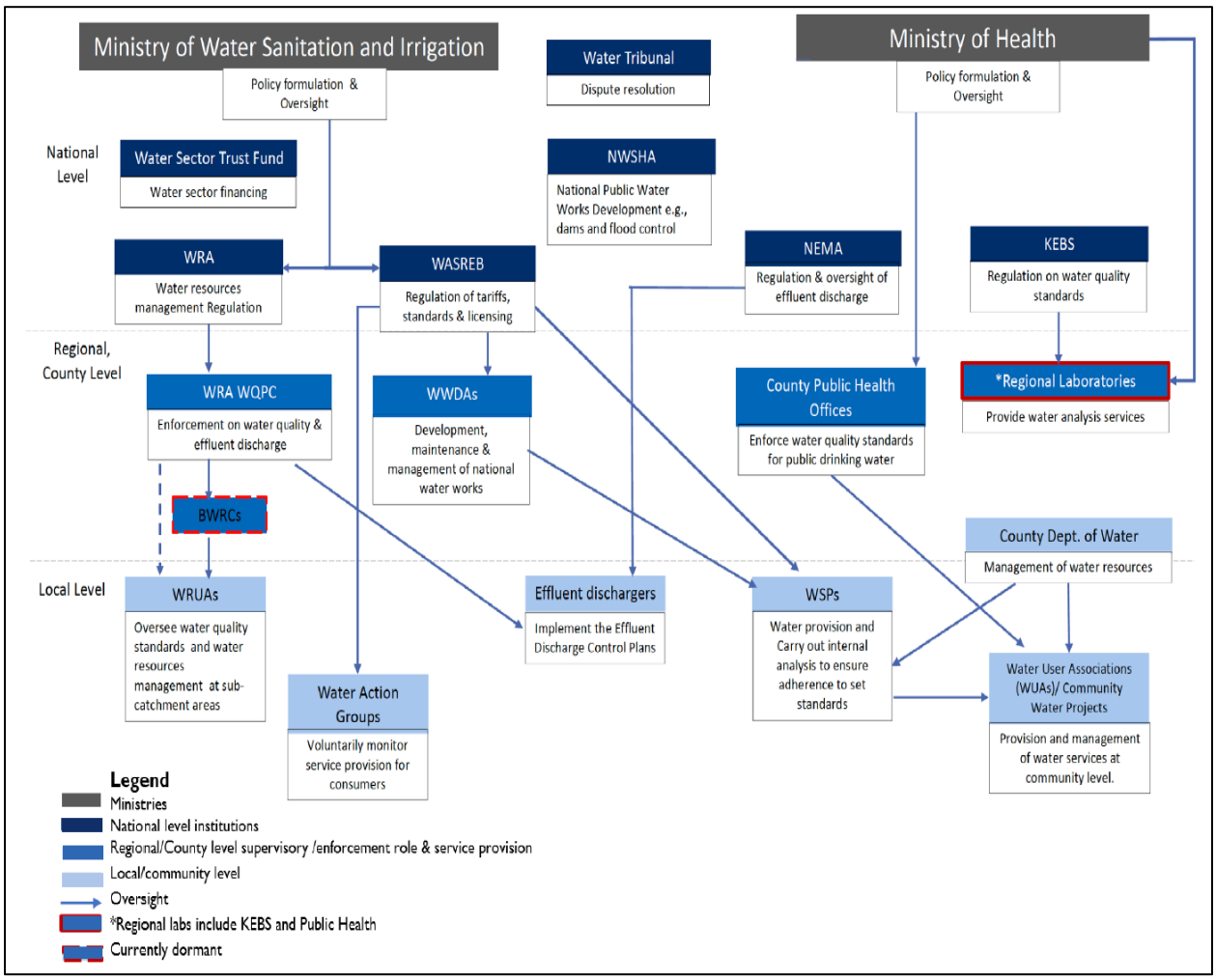

Figure 1: Institutional framework for water supply and monitoring

Source: REAL-Water. (2022)

CHAPTER TWO: PRINCIPLES, GENDER AND SOCIAL INCLUSIVITY IN PES

This chapter delves into the foundational principles that guide the design and implementation of PES schemes, ensuring they are fair, efficient, and effective. It provides an overview of the different types of PES, highlighting their unique applications and benefits. Furthermore, the chapter emphasizes the importance of integrating gender and social inclusivity into PES initiatives, addressing inequalities, and ensuring equitable participation and benefit-sharing among all stakeholders.

2.1 Principles of PES

For any ecosystem service conservation mechanism to be referred to as a PES, it has to satisfy the following criteria:

- A voluntary transaction
- There must be a well-defined ecosystem service or a land use likely to secure that service
- The ecosystem service is “bought” by a minimum of one ecosystem service buyer
- The ecosystem must be from a minimum of one ecosystem service provider or seller
- Lastly, the service provider secures ecosystem service provision (conditionality).

Based on this definition, we draw seven principles which underpin PES schemes.

a) Voluntary

PES programs should be based on voluntary agreements between ecosystem service buyers and providers. This ensures that participation is driven by mutual consent and avoids imposing conservation measures on unwilling parties.

b) Beneficiary Pays

Payments should be made by those who benefit from the ecosystem services. This could include individuals, communities, businesses, or governments acting on behalf of various parties. PES programs directly connect conservation actions and those who rely on ecosystem services by linking payments to benefits.

c) Direct Payment

Payments should be made directly to ecosystem service providers. This ensures that the financial incentives reach the individuals or communities responsible for implementing conservation practices. While intermediaries or brokers may be involved in facilitating payments, the goal should be to minimize transaction costs and ensure that the maximum amount of funding reaches the providers.

d) Additionality

Payments should be made for actions that go beyond what would be expected in the absence of the PES program. This prevents double-counting of benefits and ensures the program genuinely incentivizes additional conservation efforts.

e) Conditionality

Payments should be dependent on the delivery of ecosystem service benefits. While payments are often based on implementing management practices expected to lead to these benefits, monitoring and verifying actual outcomes is essential. This ensures that payments are aligned with the desired conservation goals.

f) Permanence

PES programs should be designed to ensure that the conservation benefits are long-lasting and not readily reversible. This can be achieved through long-term contracts, land easements, or other mechanisms that secure the continued provision of ecosystem services.

g) Avoiding Leakage

PES programs should be set up to prevent leakage, which occurs when conservation efforts in one location degrade ecosystem services elsewhere. This can be addressed through careful planning, monitoring, and enforcement mechanisms.

2.2 Types of PES

PES schemes could be classified using the source of funds, scale or ecosystem services. Fripp (2014) classifies PES schemes into three broad categories based on the primary funding source.

a) Public Payment Schemes

In these schemes, the government acts as the primary payer, providing financial incentives to land or resource managers to enhance ecosystem services on behalf of the wider public.

b) Private PES Schemes

These schemes involve direct contracts between beneficiaries of ecosystem services and service providers.

c) Public and Private PES Schemes

These schemes draw on government and private funds to support ecosystem service provision.

Further PES can be categorized into four groups based on their scale namely.

i. International

International schemes operate across national borders, involving multiple countries. For instance, REDD+ (Reducing Emissions from Deforestation and Forest Degradation), international carbon markets, and global biodiversity conservation

ii. National

National schemes operate within a single country and are often implemented by governments or national organizations. Examples include government-funded conservation programs, national carbon markets, and watershed management initiatives.

iii. Catchment

Catchment schemes focus on specific watersheds or river basins and involve multiple land users within a defined geographic area. Some examples would be Payments for water quality improvement, flood control, or ecosystem restoration within a catchment area.

iv. Local/neighborhood

Local/neighborhood schemes operate at the local or community level and involve individuals, households, or small groups. Some could include community-based conservation projects, urban greening initiatives, and local carbon offset programs.

PES can further be categorized based on the targeted ecosystem services namely.

a) PES for Carbon Sequestration

Carbon sequestration captures and stores atmospheric carbon dioxide. Here, PES operates so landowners or communities are paid to implement practices that increase carbon storage in forests, soils, or other ecosystems.

b) PES for Biodiversity Conservation

This involves protecting and managing biological diversity, including ecosystems, species, and genetic variation. Landowners or communities are paid to maintain or restore habitats that support biodiversity.

c) PES for Watershed Protection

The management of watersheds to ensure the sustainable supply of water resources and protect water quality. Landowners or communities are paid to implement practices that protect water quality, reduce erosion, and improve water flow regulation. Examples could be riparian buffer zones, erosion control measures, and sustainable land management practices.

d) Scenic Beauty and Tourism

This is the preservation of aesthetically pleasing landscapes and their contribution to tourism**.** Landowners or communities are paid to maintain or enhance their land's scenic beauty, attracting tourists. These could involve landscape conservation, heritage preservation, and sustainable tourism development.

Some PES schemes are tailor-made to address a specific commodity/service, ecosystem, or product, for instance, PES for water. Under PES for water, we could have the following PES schemes.

a) Water Quality Trading

This is a market-based approach where entities with excess water quality credits can sell them to entities that need to improve their water quality. Water quality credits are assigned based on the level of water quality improvement achieved through conservation or restoration practices. Entities can buy or sell these credits to meet regulatory requirements or achieve environmental goals.

b) Watershed Service Payments

Payments are made to landowners or communities to manage their land in ways that protect and improve watershed health. Such payments are often based on specific outcomes, such as reduced sediment loads, improved water quality, or increased water flow regulation.

c) Irrigation and Water Use Efficiency

Payments are made to farmers or other water users to encourage them to adopt more efficient irrigation practices and reduce water consumption. The payments can be based on water savings, irrigation efficiency improvements, or water pollution reductions.

2.3 Gender and Social Inclusivity in PES

PES programs should be designed to be inclusive of all community members, regardless of gender or social status. This is crucial for several reasons:

a) Empowerment

PES programs can empower women by giving them economic opportunities and decision-making authority.

b) Knowledge and Skills

Women often possess valuable knowledge and skills related to natural resource management, which can contribute significantly to the success of PES programs.

c) Equity

Ensuring gender equality in PES programs helps to address historical and ongoing injustices and promotes a more equitable distribution of benefits. Social inclusion ensures that marginalized groups have equal access to the benefits of PES programs and are not excluded from decision-making processes.

d) Sustainability

Gender-inclusive PES programs are more likely to be sustainable, as women are often key decision-makers in households and communities.

e) Community Buy-In

PES programs that include all community members are likelier to have strong community buy-in and support.

f) Biodiversity Conservation

Inclusive PES programs can help to protect biodiversity by ensuring that all community members are involved in conservation efforts and that traditional knowledge is respected.

g) Resilience

Socially inclusive PES programs are more resilient to shocks and stresses, as they can better adapt to changing conditions.

However, to achieve all this, four principles of justice are critical. PES programs should be designed to uphold these principles and ensure they are equitable, fair, and sustainable.

- **Recognition of Justice**

PES programs should recognize the specific needs and challenges faced by vulnerable and marginalized groups, such as indigenous peoples, women, and low-income communities. Respect for human dignity is essential in all PES initiatives. This includes recognizing the rights of all individuals to participate in decision-making processes and to benefit from the resources and services provided by PES programs.

- **Procedural Justice**

PES programs should be conducted fairly and transparently, ensuring all stakeholders have equal access to information and decision-making opportunities. Effective and impartial dispute-resolution mechanisms should be in place to address conflicts that may arise among stakeholders. The allocation of resources and benefits from PES programs should be transparent and based on clear criteria.

- **Distributive Justice**

PES programs should strive to ensure a fair distribution of benefits and burdens among stakeholders. This may involve considering income, land ownership, and vulnerability. PES programs should aim to address historical injustices and promote equity among different groups within the community.

- **Restorative Justice**

PES programs should seek to repair the harm caused by past injustices or environmental degradation. This may involve restoring ecosystems, providing reparations, or supporting community-based initiatives. PES programs should be designed to avoid creating new injustices, such as displacing communities or exacerbating existing inequalities.

CHAPTER THREE: PES SCHEME DESIGN AND IMPLEMENTATION

This chapter outlines the key components of designing and implementing an effective PES scheme. It begins by defining ecosystem services and establishing the foundation for understanding the benefits derived from natural ecosystems. The chapter then emphasizes the importance of conducting a baseline assessment to evaluate the state of the ecosystem and its services. Stakeholder assessment follows, identifying and engaging key players essential for the success of the PES scheme. It further discusses payment mechanisms, highlighting options for compensating service providers, and concludes with contractual arrangements to formalize agreements and ensure accountability among all parties involved.

3.1 Defining Ecosystem Services

A well-defined understanding of ecosystem services is fundamental to the successful design and implementation of a PES scheme. There are several key aspects to consider when defining the PES scheme to ensure that it is accurately targeted and effectively managed. The first step is to characterize the ecosystem. This includes identifying key ecosystem assets such as forests, as well as identification of key ecosystem sub-components such as rivers, lakes, streams, and reservoirs. The spatial coverage of these assets should be measured, and detailed cartographic maps developed to visualize the ecosystem and its sub-components. Once the ecosystem assets are characterized, the next step is to identify the specific ecosystem services they provide. These may include services like water quality improvement, increased water flow, groundwater recharge, carbon sequestration, biodiversity conservation, flood attenuation, and wetland restoration. It is also necessary to delineate the geographic boundaries within which these ecosystem services are provided. This delineation requires the development of cartographic maps that capture the catchment areas of the ecosystem assets and sub-components. Involving relevant experts in this process is essential to ensure accurate hydrological surveys and mapping.

3.2 Baseline Assessments

In this step, one determines the baseline for the scheme to have an understanding of what is happening on the ground without the proposed PES scheme. The baseline can also consider the pressures on natural capital assets in the area (for example, climate change, population growth, and changing demand for food, fuel, and housing). This will help to provide a basis to explore how

the flows of ecosystem services may change if a PES scheme is not set up. The key aim of the baseline assessment is to build on initial research to obtain more detailed data and information on the communities living in the area, the state of the natural assets, the threats and pressure they face, and the supply of ecosystem services they provide.

Additionally, to effectively design and implement a PES scheme, it is crucial to conduct a thorough assessment to determine the value of the specific ecosystem services involved. This valuation should be tailored to each ecosystem service, ensuring that the unique characteristics and benefits of the service are accurately captured. In addition to valuation, it is essential to develop mechanisms that define the concept of additionality, ensuring that the PES scheme generates benefits that would not have occurred without the intervention and to identify and address potential ecosystem leakages that could undermine the effectiveness of the scheme.

Comprehensive socio-economic and cultural assessments should also be conducted. These assessments provide critical insights into the social dynamics, cultural values, and economic conditions of the communities involved in the PES scheme, ensuring that these factors are considered in the design and implementation process. Furthermore, determining the willingness to pay (WTP) among buyers and the willingness to accept (WTA) among sellers is vital. The WTP and WTA assessments should account for various factors, including the sellers' opportunity costs, start-up, and ongoing maintenance costs, transaction costs, the availability of alternative options, and the degree of competition in both the supply and demand of the ecosystem service. This comprehensive approach ensures that payment levels are fair and reflect the true value of the ecosystem services being exchanged.

3.3 Stakeholder Assessment

Identifying and defining key stakeholders is a critical step in the development of a PES scheme. This process involves recognizing all relevant parties, including service providers, beneficiaries, and intermediaries, who will play a role in the scheme's implementation and success. Ensuring gender and social inclusivity is equally important during the stakeholder assessment. This means considering the diverse needs and perspectives of all groups, particularly those who may be marginalized or underrepresented, to foster equity and inclusivity within the PES scheme.

Clearly outlining the roles and responsibilities of each stakeholder is essential to avoid confusion and ensure that all parties are aware of their specific contributions to the PES scheme. This clarity

supports effective collaboration and accountability. Finally, developing robust mechanisms for stakeholder engagement is crucial. These mechanisms should include public consultations and feedback loops to facilitate continuous communication, gather input from all stakeholders, and address concerns throughout the lifecycle of the PES scheme

3.4 Payment Mechanisms

Determining the appropriate types of payments is a key component of a PES scheme. Payments can take various forms, including direct cash payments, in-kind contributions, and tax incentives. It is important to thoroughly describe each payment type and assess which method is most suitable for the specific ecosystem service and the community involved. Setting payment levels and schedules requires careful consideration. These should be based on the WTP among buyers and the WTA among sellers. The proposed payment levels and schedules should then be presented to the management committee, which will negotiate and finalize terms that are equitable for both parties. Additionally, establishing effective transmission mechanisms for funds is essential. The management committee should determine a method for fund distribution that is transparent and acceptable to all stakeholders, ensuring smooth and efficient financial transactions within the PES scheme.

3.5 Contractual Arrangements

Formalizing the PES scheme through contractual arrangements is essential for its successful implementation. The following should be clearly outlined in the contract:

- **Duration of PES Scheme**

The contract must specify the precise duration of the PES scheme, including the start and end dates. This should also cover any interim milestones or phases that the project may go through. These timelines are crucial for setting expectations and ensuring that all parties are aware of the period within which the agreed-upon ecosystem services will be delivered. The duration could also include any provisions for extensions or renewals, subject to mutual agreement.

- **Details of the PES Scheme Site and Ecosystem Service**

There should be a thorough description of the location of the PES scheme, including geographical coordinates, land use, and ecological characteristics of the site. It should also specify the particular ecosystem services being targeted, such as carbon sequestration, watershed management, or biodiversity conservation. The clarity of these details ensures that both parties have a mutual understanding of what is being protected or enhanced and where this will take place.

- **Obligations of the Parties**

Clearly outline the specific duties and responsibilities of each party involved in the PES scheme. This includes identifying who will cover the costs associated with transactions, setting up the scheme, ongoing management, and monitoring and evaluation (M&E). For instance, one party might be responsible for the financial costs, while another handles the logistical aspects. Also, detail the roles in capacity building, community engagement, and reporting. This clarity helps avoid misunderstandings and ensures accountability.

- **Communication of Results**

Detail the metrics and methodologies that will be used to measure the success of the PES scheme. Specify who will be responsible for gathering data, conducting field assessments, and analyzing results. Additionally, outline the communication protocols for sharing progress reports with stakeholders, the criteria for evaluation, and the process for verifying outcomes. If certification is required (e.g., by a recognized environmental standard), indicate who will manage this process.

- **Payment Terms**

The contract should clearly define how payments will be structured. This includes the type of payments (e.g., cash, in-kind services), the amount or formula for determining the payment level, and the schedule for payments (e.g., upfront, upon completion of milestones, or periodically). Also, consider provisions for adjusting payments in response to changes in market conditions, performance levels, or external factors such as inflation.

- **Risk Management**

Outline the risk management strategies, including how risks will be shared among the parties. If the seller fails to deliver the contracted ecosystem service, the contract should specify what evidence or proof will be required to demonstrate this failure and who will bear the financial and legal consequences. This should also cover the procedures for addressing disputes over unmet obligations, such as mediation or arbitration.

- **Contract Modification**

Establish clear procedures for how the contract can be modified or updated during its term. This could include provisions for renegotiation in response to significant changes in external conditions (e.g., economic shifts, environmental changes), the process for submitting and approving amendments, and how these changes will be documented. Ensuring that there is a mechanism for contract updates helps maintain its relevance and effectiveness over time.

- **Reasons for Voiding the Contract**

Identify the specific conditions under which the contract can be voided or terminated. This could include circumstances such as a breach of contract, force majeure events (e.g., natural disasters), non-compliance with agreed standards, or changes in law or policy that render the contract unenforceable. This should also cover the process for formally terminating the contract and any obligations that survive termination.

- **Anticipated Ecosystem Service Outcomes**

The contract should clearly articulate the expected outcomes of the PES scheme. This might include both direct environmental benefits (e.g., increased carbon sequestration, improved water quality) and indirect benefits (e.g., enhanced biodiversity, socio-economic improvements for local communities). Quantitative and qualitative indicators should be provided to assess these outcomes, along with any baseline data against which progress will be measured.

- **Additionality**

Additionality refers to the requirement that the ecosystem services provided under the PES scheme should be above and beyond what would have occurred without the intervention. The contract should define how additionality will be determined, including setting baselines, identifying pre-

existing conditions, and demonstrating the incremental benefits of the PES scheme. This ensures that payments are made for genuine environmental improvements.

- **Ecosystem Service Leakage**

Ecosystem service leakage occurs when efforts to enhance ecosystem services in one area lead to negative impacts elsewhere. The contract should outline strategies to minimize such leakage, such as integrated land-use planning, coordination with neighboring landowners, and monitoring of potential spillover effects. This helps ensure that the overall environmental benefits of the PES scheme are maximized and not offset by unintended consequences.

- **Dispute Resolution**

The contract should establish a clear and fair process for resolving disputes that may arise between the parties during the PES scheme. This could include initial steps like negotiation or mediation, followed by more formal mechanisms such as arbitration or legal proceedings if necessary. The contract should also specify the legal jurisdiction under which disputes will be settled and any timelines for resolving issues. This ensures that any conflicts are handled efficiently and do not disrupt the implementation of the PES scheme.

CHAPTER FOUR: FINANCING PES SCHEME

This chapter focuses on the critical aspect of financing a PES scheme to ensure its viability and long-term success. It explores diverse funding sources, including public, private, and blended finance, that can support the scheme's implementation and sustainability. The chapter also addresses financial management practices, emphasizing accountability, transparency, and efficient allocation of resources. Finally, it highlights strategies to achieve financial sustainability, ensuring that the PES scheme remains effective and resilient over time while delivering consistent benefits to both service providers and beneficiaries.

4.1 Funding Sources

The primary source of funding for ecosystem services in a PES scheme typically comes from the buyers of the ecosystem services. These buyers are often those who directly benefit from the services provided by the ecosystem. In the water sector, we could have, for instance, water service providers that manage and supply water and pay for ecosystem services that ensure the quality and quantity of water, such as watershed protection or reforestation. Hydropower companies might invest in upstream forest conservation to ensure a stable water flow. Agricultural firms might pay for ecosystem services that support soil fertility, pollination, or water regulation.

4.2 Financial Management

Effective financial management is crucial for the success of PES programs. It ensures that resources are allocated efficiently, maintains transparency, and establishes accountability. Therefore, transparent and accountable mechanisms for managing PES funds are critical. The following enhances effective financial management.

- The management committee should clearly define roles and responsibilities, ensuring every member understands their duties. This includes managing, disbursing, and overseeing the funds from buyers to sellers.
- The committee should include representatives from all key stakeholders, buyers, sellers, local communities, and relevant government bodies to ensure diverse input and fair decision-making.

- Before any funds are disbursed, all parties must agree upon the modalities for payment, fund distribution, and usage. This agreement should be formalized in a written contract or memorandum of understanding (MoU).
- The account holding the PES funds should require multiple signatories, typically from both the buyer's and seller's representatives, to authorize transactions. This ensures that no single party has unilateral control over the funds.
- Clear protocols should be established for authorizing transactions, with thresholds for different expenditure levels. For example, more considerable sums might require additional approval from other committee members or a supervisory body.
- Regular independent audits are essential. Engage an independent, reputable auditor to conduct regular audits of the PES funds. The frequency of these audits should be agreed upon during the formation of the PES scheme, with annual audits being a standard practice.
- The audit reports should be made available to all stakeholders and include evaluations of the PES program's financial integrity and effectiveness.
- Establish a mechanism for addressing any issues raised by the auditors. This could involve corrective action plans, which the management committee should implement and monitor.
- All financial and audit reports should be submitted on time to the relevant government authority, such as the WRA. This ensures compliance with national regulations regarding the management and use of water resources.
- Where appropriate, consider making these reports publicly accessible to enhance transparency and build trust among stakeholders and the wider community.
- The management committee should conduct regular financial reviews (quarterly or semi-annually) in addition to annual audits. These reviews allow for ongoing monitoring of fund usage and early detection of discrepancies.
- The results of these reviews should be shared with all stakeholders to maintain transparency and encourage continuous improvement in the management of PES funds.

- Establish a process for incorporating feedback from these financial reviews into adjustments to the PES scheme, ensuring that funds management remains aligned with the program's objectives and stakeholders' expectations.

4.3 Financial Sustainability

Financial sustainability in PES within the water sector is crucial for these programs' long-term success and viability. Achieving financial sustainability involves ensuring that the PES scheme can continue to operate and deliver benefits over time without relying excessively on short-term funding or external support. It is, therefore, critical to ensure that the PES scheme is not overly reliant on a single funding source by integrating multiple revenue streams, including government budgets, donor funds, and private sector contributions. The PES scheme could employ the following strategies to achieve sustainability.

- Develop and negotiate long-term contracts between buyers (e.g., water utilities) and sellers (e.g., landowners). These contracts should outline payment schedules, expected outcomes, and terms for renewal or termination.
- Engage multiple buyers of ecosystem services to reduce reliance on a single funding source. This could include public utilities, private companies, tourism operators, and even consumers who pay through water tariffs.
- Incorporate PES costs into water pricing or utility tariffs, ensuring that water users maintain ecosystem services supporting water quality and availability.
- Review and optimize the PES scheme's operations regularly to reduce unnecessary expenses. This includes streamlining administrative processes, utilizing technology for monitoring and reporting, and avoiding bureaucratic delays.
- Establish Public Private Partnerships (PPPs) where the private sector can co-invest in ecosystem services alongside government and donor funds. These partnerships can bring in additional resources and technical expertise, enhancing the overall impact of the PES scheme.
- Advocate for government policies that provide financial incentives for participation in PES schemes, such as tax breaks or subsidies for companies that invest in ecosystem services.

- Explore blended finance approaches, where public or philanthropic funds are used to de-risk investments, encouraging private sector participation in PES.
- Consider creating an endowment or reserve fund to provide a financial buffer during economic downturns or unexpected expenses. These funds can ensure that the PES scheme continues to operate even in challenging financial conditions.
- Implement risk management strategies, such as insurance schemes or contingency planning, to address potential financial shortfalls due to natural disasters or economic downturns.
- Encourage private companies, particularly those that rely on water resources (e.g., beverage companies, agriculture, and hydropower firms), to contribute to the PES scheme. This could be through direct payments, Corporate Social Responsibility (CSR) initiatives, or through participation in blended finance models.
- Implement payment-by-results models, where payments are tied to achieving specific conservation outcomes. This can improve the efficiency and effectiveness of PES schemes, making them more attractive to funders.
- Implement payment structures that are contingent on the successful delivery of ecosystem services. For instance, payments could be made based on measurable improvements in water quality, reforestation success, or biodiversity conservation.
- Develop clear and quantifiable indicators to measure performance. All parties should agree upon these indicators at the outset and should be based on scientific evidence and best practices.
- Allow for flexibility in payment amounts based on performance levels. For example, higher payments could be made for exceeding targets, while payments could be reduced or withheld if targets are unmet.

- Provide ongoing training and technical assistance to buyers and sellers of ecosystem services. This ensures that all parties understand the financial mechanisms of PES and can manage funds effectively.

- Enhance the financial literacy of local communities involved in PES, empowering them to manage funds sustainably and invest in long-term conservation practices.
- Use the results from financial monitoring to adapt the PES scheme as needed. This could involve adjusting payment levels, revising contracts, or exploring new revenue sources to ensure ongoing economic sustainability.
- Explore innovative financing, such as using green bonds or environmental credits to finance PES schemes. These instruments can attract investment from socially responsible investors and provide additional revenue streams.
- The management committee shall develop mechanisms for plugging funds from other sources into the PES scheme. This ensures that external funding can be adopted without disrupting the primary funding sources.

CHAPTER FIVE: CAPACITY BUILDING AND KNOWLEDGE MANAGEMENT

Effective implementation of socially and gender-inclusive PES schemes in the water sector requires robust capacity building and comprehensive knowledge management strategies. This chapter outlines the approaches to equip stakeholders with the skills and knowledge necessary to design, implement, and sustain PES initiatives while fostering collaboration and continuous learning.

5.1 Capacity Building Programs

Capacity building is central to the successful adoption and implementation of PES schemes in Kenya's water sector. A systematic Capacity Needs Assessment (CNA) need to be conducted for stakeholders, including policymakers, local communities, private sector actors, and civil society organizations. The CNA should address critical areas such as:

- Understanding ecosystem services and their conservation.
- Exploring the modes of conservation, including PES.
- Valuing ecosystem services and understanding their market dynamics.
- Pricing of ecosystem services for sustainability.

Based on the findings of the CNA, tailored training and capacity-building programs should be developed. These initiatives should provide stakeholders with practical knowledge and skills on PES design and operation, emphasizing gender and social inclusion in all aspects of conservation. Workshops, on-the-job training, and field demonstrations should be employed to enhance understanding and application of PES principles.

5.2 Knowledge Management

Knowledge management plays a pivotal role in ensuring the sustainability and scalability of PES schemes. Key strategies for knowledge management include:

- **Documentation of Best Practices and Lessons Learned**

Successful PES practices, innovative approaches, and lessons from pilot projects and case studies should be systematically recorded and shared.

- **Stakeholder Engagement and Collaboration**

Insights from local communities, Non-Governmental Organizations (NGOs), academic institutions, and other stakeholders should be captured to enrich PES schemes.

- **Capacity Building through Knowledge Sharing**

Regular workshops, seminars, and training sessions should be organized to disseminate knowledge, focusing on the integration of gender and social inclusion in PES schemes.

- **Publication and Dissemination of Information**

Reports, policy briefs, newsletters, and updates should be published to ensure stakeholders are informed about PES developments, monitoring results, and evaluation findings.

- **Integration of Indigenous Knowledge**

Local and indigenous knowledge should be incorporated into PES planning and implementation, respecting and valuing traditional conservation practices.

- **Building Partnerships**

Collaboration with international organizations, research institutions, and other PES schemes will foster knowledge exchange and support innovation.

CHAPTER SIX: MANAGEMENT AND GOVERNANCE OF PES SCHEME

Effective management and governance are critical for the success and sustainability of PES schemes. This chapter outlines the oversight mechanisms, roles, and responsibilities necessary to ensure that PES schemes achieve their conservation and socio-economic objectives while promoting equity and inclusion.

6.1 Oversight of PES Scheme

Oversight of PES schemes should be anchored in strong governance structures led by relevant authorities, such as the WRA. These entities play a pivotal role in regulating the proper management and use of water resources, ensuring the effective implementation of PES initiatives.

6.1.2 Roles and Responsibilities of Oversight Authority- WRA

- **Development and Implementation of Monitoring and Evaluation Frameworks**

The authority should establish comprehensive frameworks to monitor and evaluate PES activities. These frameworks should track the ecological, social, and economic impacts of PES schemes, ensuring that objectives are met and resources are effectively utilized.

- **Performance Assessment**

Regular performance reviews should assess the delivery of ecosystem services and socio-economic outcomes. This will involve evaluating whether PES schemes are meeting conservation goals and providing equitable benefits to all stakeholders.

- **Reporting and Accountability**

WRA should compile periodic reports detailing ecosystem service delivery, stakeholder engagement, and financial transparency. These reports will be reviewed to ensure accountability and inform decision-making.

- **Promotion of Best Practices**

WRA should identify and disseminate best practices in ecosystem management and sustainable livelihoods. Lessons from successful PES schemes will guide future initiatives and policy adjustments.

- **Revenue Management**

Transparent and sustainable management of PES revenues should be prioritized. Strategies should be developed to ensure funds are reinvested in community projects, ecosystem conservation, and capacity-building initiatives.

- **Scaling Up PES Schemes**

Successful PES models should be expanded to other regions or sectors. This will involve identifying new opportunities for PES adoption and ensuring scalability while maintaining inclusivity and equity.

- **Advocacy and Stakeholder Engagement**

WRA should promote the benefits of PES to various stakeholders, including potential buyers, government bodies, and local communities. Advocacy efforts should also focus on integrating PES into national and regional environmental policies and development strategies.

- **Policy Integration**

Collaboration with policymakers will ensure that PES is embedded within broader environmental governance frameworks and contributes to sustainable development goals (SDGs).

6.2 Management and implementation of PES Scheme

Effective implementation of the PES scheme requires a well-structured and inclusive management framework. To achieve this, a PES Management Committee should be established, comprising representatives from key stakeholder groups. This committee should ensure coordinated implementation, foster accountability, and address any challenges that may arise.

6.2.1 Composition of the Management Committee

The committee should include the following members:

a) Community-Based Organization (CBO) leadership, representing PES sellers.
b) Representative of the buyer, ensuring the buyer's interests are considered.
c) Representative of the Water Resources Users Association (WRUA), to integrate local water governance structures.
d) Representatives of relevant government agencies, including water, agriculture, and environment sectors, to provide regulatory oversight and policy alignment.

6.2.2 Roles and Responsibilities of the Management Committee

The committee will play a critical role in ensuring the smooth implementation of PES schemes. Key responsibilities include:

- **Ensuring Adherence to PES Agreements**

Monitor that all parties comply with the terms and conditions outlined in PES agreements, including service delivery standards and timelines.

- **Monitoring and Reporting**

Oversee compliance with ecosystem service delivery and maintain regular records of performance. Address breaches of agreements or disputes that may arise between buyers and sellers.

- **Stakeholder Coordination**

Facilitate effective communication and collaboration among stakeholders, including CBOs, WRUAs, buyers, and government agencies. Organize regular meetings to discuss progress, challenges, and opportunities for improvement.

- **Capacity Building**

Identify capacity-building needs for stakeholders and organize training sessions and workshops. These efforts will enhance the skills and knowledge of PES participants, particularly sellers and buyers, ensuring their ability to meet PES objectives.

- **Financial Oversight**

Manage the collection, allocation, and disbursement of PES funds. Ensure financial transparency through regular audits and reporting to maintain stakeholder trust and accountability.

- **Dispute Mediation and Grievance Redressal**

Serve as the first point of contact for mediating disputes. Establish a formal grievance redress mechanism to resolve conflicts efficiently and equitably.

- **Review and Adaptation of PES Agreements**

Periodically review PES agreements to ensure relevance and responsiveness to environmental and socio-economic changes. Make necessary adjustments based on stakeholder feedback or emerging opportunities.

6.3 Dispute Resolution Mechanism

Disputes arising from the implementation of PES schemes should be addressed through a structured resolution mechanism to ensure fairness and maintain stakeholder trust. Here is a hierarchical mechanism that ensures disputes are addressed efficiently, equitably, and transparently, minimizing disruptions to the PES scheme while maintaining stakeholder confidence.

a) Initial Resolution by the PES Management Committee

Disagreements should first be referred to the PES Management Committee for mediation and resolution.

b) Alternative Dispute Resolution (ADR)

If unresolved, disputes should proceed to an ADR mechanism, which will facilitate negotiations and propose mutually agreeable solutions.

c) National Environment Tribunal (NET)

As a final resort, unresolved disputes should be referred to the National Environment Tribunal for a legally binding decision.

CHAPTER SEVEN: MONITORING AND EVALUATION OF PES SCHEMES

Effective Monitoring and Evaluation (M&E) is critical to ensuring the success and sustainability of PES schemes. It enables continuous assessment of performance, identifies challenges, and ensures that PES objectives are met. This chapter outlines the framework for monitoring and evaluating PES schemes, with a focus on key performance indicators, stakeholder involvement, and adaptive management.

7.1 Objectives of Monitoring and Evaluation

The M&E framework for PES schemes should achieve the following objectives:

- **Assessing Impact**

Evaluate the environmental, social, and economic outcomes of the PES schemes.

- **Ensuring Accountability**

Track compliance with PES agreements by all parties, including sellers, buyers, and implementing agencies.

- **Guiding Decision-Making**

Provide data and insights to improve policy and operational frameworks for PES schemes.

- **Promoting Transparency**

Regularly share findings with stakeholders to foster trust and collaboration.

- **Facilitating Learning**

Document lessons learned to inform the design and implementation of future PES initiatives.

7.2 Key Performance Indicators (KPIs)

To evaluate PES schemes effectively, measurable KPIs should be identified and tracked. These may include:

- **Environmental Indicators**

Changes in water quality, ecosystem health, biodiversity, and soil erosion rates in the targeted watershed areas.

- **Social Indicators**

Participation of marginalized groups, equitable benefit-sharing, and gender inclusivity in PES activities.

- **Economic Indicators**

Payments made to service providers, financial sustainability of the PES scheme, and cost-effectiveness of interventions.

- **Compliance Indicators**

Adherence to PES agreements by sellers and buyers, and implementation of conservation practices.

7.3 Roles and Responsibilities in M&E

M&E should involve all stakeholders to ensure comprehensive oversight and accountability:

a) **Government Agencies**
   - Lead the development and enforcement of M&E frameworks.
   - Conduct periodic audits and publish reports on PES outcomes.

b) **PES Management Committee**
   - Monitor compliance with PES agreements and report findings to stakeholders.
   - Address gaps in implementation and recommend adaptive strategies.

c) **Local Communities and CBOs**
   - Collect data on conservation activities and report progress.
   - Participate in the co-development of M&E tools and processes.

d) **Independent Auditors and Researchers**
   - Provide third-party evaluations to ensure objectivity and credibility of findings.
   - Document case studies and best practices for knowledge sharing.

7.4 Tools and Approaches for Monitoring and Evaluation

Effective M&E requires robust tools and approaches that capture both qualitative and quantitative data. Recommended methods include:

a) **Remote Sensing and GIS**

To monitor changes in land use, vegetation cover, and watershed health.

b) Field Surveys and Assessments

To evaluate the adoption of conservation practices and socio-economic impacts on participants.

c) Community-Based Monitoring

Involve local stakeholders in data collection to ensure relevance and ownership.

d) Participatory Evaluations

Use stakeholder workshops to review progress and gather feedback on PES implementation.

e) Periodic Reporting

Develop templates and timelines for regular updates to all stakeholders.

7.5 Adaptive Management

Monitoring and evaluation findings should feed into an adaptive management process to improve PES implementation. Adaptive management involves:

- **Identifying Challenges**

Use M&E data to detect barriers or inefficiencies in the PES scheme.

- **Developing Solutions**

Co-create strategies to address challenges, informed by stakeholder input and scientific evidence.

- **Implementing Adjustments**

Revise PES agreements, policies, or operational frameworks to align with emerging needs or opportunities.

- **Tracking Changes**

Continuously monitor the effects of adjustments and refine approaches as necessary.

7.6 Reporting and Dissemination

Regular dissemination of M&E findings is essential to maintain transparency and accountability. This should involve:

- Publishing annual PES impact reports, policy briefs, and newsletters.

- Organizing stakeholder workshops to present findings and gather feedback.
- Sharing updates through digital platforms, such as government or PES-related websites.

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