ADAPTING MITIGATING TECHNIQUES TO PROMOTE WETLAND CONSERVATION IN CAMEROON: AN APPRAISAL OF THE ENVIRONMENTAL MANAGEMENT LAW

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ABSTRACT

This paper examines mitigating techniques that can be adopted in other to promote wetlands conservation in Cameroon while assessing the role of the Environmental Management Code in achieving this goal. It discuss the different kinds of mitigating techniques such as avoidance, mitigating banks, in-lieu fee mitigation and permittee responsible mitigation. The paper argues that mitigation of wetland ecosystems can lead to a number of impacts. It concludes that compensation and precautionary measures should be taken into consideration while dealing with wetlands mitigation, increased follow-up should be conducted early in the implementation phase of the mitigation project and standardized design and monitoring requirements should be developed and increased technical support and training should be provided to those responsible for carrying out the mitigation project, taking into consideration corruption control measures since huge amount of money are involve and encouraged local community participation in the mitigation project.

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INTRODUCTION

Mitigation is the attempt to alleviate some or all of the detrimental effects arising from a given action. Wetland mitigation replaces an existing wetland or its functions by creating a new wetland, restoring a former wetland, or enhancing or preserving an existing wetland. Mitigation commonly is required as a condition for receiving a permit to develop a wetland[i]. On the basis of Environmental Review Criteria [ERC[ii]], mitigation is an action or series of actions to offset the adverse impacts that would other otherwise cause a regulated activity to fail to meet the criteria set forth[iii]. Mitigation is a term that frequently occurs in discussion and there is need for it to be adopted for the better management of wetland ecosystems[iv]. Wetlands may be legally destroyed, but the loss must be compensated for by the restoration, creation, or enhancement of other wetlands[v]. This strategy should result in *no net loss* of wetlands.

Compensation is obligatory when an endorsement to impact a wetland is issued[vi] and when the controller has decided the most suitable justification action is to restore or enhance an impacted area. Wetland restoration through compensation action supports the concept of no further loss of wetland area. Wetland restoration usually includes the replacement of wetlands plant communities, hydrologic regimes and other functions similar to those found in a natural wetland[vii].

KINDS OF WETLAND MITIGATION

Under this head, the different types of wetland ecosystems mitigation will be examine, they are for example avoidance, mitigation banks, in-lieu fee mitigation and permittee-responsible mitigation[viii].

Avoidance

Avoidance of development effects is the favorite mitigation alterative because through this type of mitigation, contrary impacts are avoided in total through modification of project site, design, or other related features. For understandable reasons, this mitigation alternative is not generally preferred by permit applications, since it requires a change[ix] in the proposed project. Yet in assessing mitigation alternatives, officials should give first contemplation to impact avoidance

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for all or some of the projected project impacts. The Environmental Management Code of Cameroon provides that:

> Any impact assessment that does not comply with the prescriptions of the specifications shall be null and void[x].

The above article is very categorical, it clearly stipulates that if any project is to be carry out on a wetland or any other environment, and the environmental impact assessment shows prove of more damages on the environment, that project should be null avoid, in other words, that project should be avoided.

Mitigation Banks

Wetland mitigation banks are either existing or newly created wetland areas that are available for purchase and subsequent management and preservation. In practice, funds paid by the applicant are used in buying a portion (that is credits) of an existing wetland mitigation bank, or are used to fund the creation of a new bank[xi]. Using a pre-negotiating formula, the applicant draws on the purchased credits to mitigate for wetland impact arising from the development project.

Mitigation banks raise special problems of their own[xii]. More often than not, the assured mitigation is never realized. Simply put, resource scientists do not know how to build sustainable wetlands that match the functions and productivity of natural wetlands. Thus, any broad use of mitigation banks could lead to a net loss of wetland habitats[xiii]. Moreover, resource agencies are concerned that the creation of mitigation banks will reduce the barriers to filling wetlands and estuaries, and may even encourage development on the wetland, as bank sponsors seeks to recover their costs. It is unfortunate that the legislative organ of Cameroon did not examine mitigation banks technique as a means used in the conservation of wetland ecosystems in Cameroon, we think that the Environmental Management Code should be modified and this technique taken into consideration.

In-Lieu Fee Mitigation

In-lieu fees are funds placed in one or more accounts designated for restoration, enhancement, or preservation of existing wetland resources[xiv]. It is a program involving the restoration, establishment, enhancement, and preservation of aquatic resources through funds paid to a

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governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for permits. The Cameroonian legislator had not discuss in-lieu fee mitigation in the Environmental Management law or any other law in the country dealing with the protection of the environment and we believe that this technique is very important for wetlands conservation, so the legislator should in all honesty include it in the environmental management law or create a separate law on wetland management and include in-lieu fee mitigation in it as a technique for wetland ecosystems management in the country.

Permittee-Responsible Mitigation

Permittee-responsible mitigation means an aquatic resource restoration, establishment, enhancement, or preservation activity undertaken by the permittee[xv] to provide compensatory mitigation for which the permittee retains full responsibility[xvi]. Under this head restoration, re-establishment, rehabilitation, establishment, enhancement and preservation of wetlands will be examine.

Restoration

The process of reconstructing an ecosystem close to its usual level of existence before its destruction or degradation is known as restoration. There are many types of restoration related activities[xvii]. For restoration to be effective, it often requires one or more of the following processes[xviii].Wetland restoration however, have environmental and social advantages to man and the environment. For example, it provide clean water, wildlife viewing opportunities and other outdoor recreation activities to humans and conserve as well as control erosion to the environment. These wetland benefits apply to land owners as well as the society as a whole, as a result of this, the law marker should pay total attention to this method for the conservation of wetlands in Cameroon. Reasons why the Cameroonian Environmental Management Code stipulates that:

> The protection of nature, the preservation of animal and plant species and their habitat, the maintenance of biological balances and ecosystems and the conservation of biodiversity and genetic diversity against all causes of degradation and threats of extinction are of national interest. It shall devolve on the Administration and each citizen to safeguard the natural heritage[xix].

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Re-establishment

This is the management of wetlands biological and physical values with the objective of returning the natural and significant functions of the wetland to it previous aquatic resource capacity[xx]. According to section 13 of the Environmental Management Code "the government shall draw up a National Environmental Management Plan. The Plan shall be amended every five years". It is therefore expected that any wetland earmark for re-establishment should be in conformity with the National Environmental Management Plan. However, the Municipal Lake of Yaounde, Cameroon is under re-establishment and critics believes that the implementation of the project is not in respect of the National Environmental Management Plan, for example, the fishermen, the car washers and other locals who exclusively depended on the lake their welfare had not been taken into consideration.

Rehabilitation

This is the handling of the physical, chemical, or biological appearances of a wetland site with the goal of revamping the natural and important functions of the wetland site from it degraded aquatic resource level. Rehabilitation however, results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area[xxi]. The Environmental Management Law of Cameroon provides that: "holders of mining permits or quarrying permits shall rehabilitate the exploited sites"[xxii]. Although the law did not mention wetlands, it is an open secret that most of the mining activities takes place on wetlands and so therefore, implicitly, the legislator is asking that they be re-habilitated after mining activities on them.

Enhancement

This is the upgrading of specific physical features of a previously surviving wetland with the main goal of increasing one or more functions of the wetland in question based on management objectives. This is typically done for example, through the increase of the percentage of fresh water entering the wetland[xxiii]. Enhancement of wetlands may entail heavy financial resources reasons why the Environmental Management Code provides that: however, holders of mining permits and quarrying permits may choose to pay the financial cost of rehabilitation/reestablishment carried out by the competent Administration….[xxiv].

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Creation

It is the construction of new wetland by transformation of other land forms. Or the manufacture of a wetland in an area that was not a wetland in the recent past[xxv] and that is remote from current wetland[xxvi]. In other words, creation occurs when a wetland is place on the landscape by some anthropogenic activity on a non-wetland ecosystem[xxvii]. For example, through excavation of upland soils that could automatically lead to elevations that will support the growth of wetland species through the establishment of an appropriate hydrology. The Environmental Management Law provides that:

> The state may erect any part of the national territory into an ecologically protected area. Such an area shall be the subject of an environmental management plan[xxviii].

This explains reasons why this law protects all the man-made wetlands around the national territory from the harmful activities of man.

Preservation

Preservation of wetlands is the removal or prevention of any threat from activities that can lead to the deterioration of aquatic resources of wetlands by an action in or near those aquatic resources. This term includes for example activities commonly associated with the protection and maintenance of aquatic resources via the effective implementation of appropriate legal and physical mechanisms. Preservation is not aimed at gaining wetlands resources or improving on wetland functions but the protection of wetlands in an adjacent area that are equivalent to the area damaged and that might otherwise be subject to an unregulated activity[xxix]. The law states that "risk prevention shall comply with the principles of this law as well as the relevant provisions provided for by the specific instruments in force[xxx]. To this respect, the Environmental Management Code is categorically saying that it is important to prevent any risk that may be detrimental to the environment in general and implicitly wetlands. It is however, vital to mention that the same law stipulates that "mangroves ecosystems shall be specifically protected, taking into account their role and importance in marine biodiversity conservation and the maintenance of coastal ecological balances. Although mangroves are just one example of wetlands, we are tempted to believe that that section of the law implies implicitly to all wetland ecosystems in Cameroon.

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IMPACTS, CONCLUSION AND RECOMMENDATIONS

Under this head the impacts, conclusion and recommendations to wetland mitigation will be discuss.

Impacts

Here the impacts of wetland mitigation are examine, for example improvements of existing wetlands, creation of new wetlands and the financial expenses involved in wetland mitigation will be examine .

Improvements of existing wetlands or natural habitats

Mitigation of wetlands leads to the improvement of existing wetlands and help to maintain the natural habitats of the wetland. It can lead for example to the construction or modification of water level control structures or ditches, establishment of natural vegetation, re-contouring of site, installation or removal of irrigation, drainage, and other water distribution systems[xxxi].

Creation of new wetlands

Wetland mitigation technique can lead to the creation of new wetlands. The creation and restoration of new wetlands for mitigation of lost wetland habitat is a newly developing science/technology that is still seeking to define and achieve success of these wetlands[xxxii]. The creation of new wetlands as a technique of mitigation is now highly accepted and practice in many develop countries which in one way or the other had destroyed their natural wetland ecosystems. The creation of wetlands is becoming technically and ecologically feasible for a limited range of habitat types, including freshwater marshes and tidal marshes on low energy coasts[xxxiii].

Financial cost

Mitigation of wetland ecosystems entails much money, it required lengthy process that includes providing very detailed project descriptions and highly skilled expertise which needs to be paid for[xxxiv]. This explains why developing countries still with natural wetlands should conserved them from degradation and loss because if they fail to do so it will be difficult to create new wetlands taking into consideration the fact that developing countries lack the finance standing required to do so.

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Conclusion and Recommendations

Mitigation is a procedure to lessen loss of wetland by, evading impacts to the wetland, diminishing impacts and requiring applicable compensation, and compensating for impacts that cannot be avoided or reduced[xxxv]. Decision-making sequences have also been developed for compensation, which may be seen as payment for any remaining impacts after all steps to mitigate have been taken[xxxvi]. The issue of wetland mitigation is divisive, wetlands are rarely substitutable, and this is particularly true of climatic wetlands[xxxvii], which cannot be recreated once destroyed we therefore recommend that total precautionary measures should be taking while dealing with wetlands of this kind, their conservation should be a priority to the state and the local communities around the wetlands. Artificial wetlands for example seldom have the full range of wetland benefit or functions provided by a natural wetland. It is therefore difficult to guess how much new wetland should be equal in function to the old wetland[xxxviii]. It is recommended that Problems encountered during mitigation could be corrected with increased follow-up conducted early in the implementation phase of the mitigation project. Also, a standardized design and monitoring requirements should be developed and increased technical support and training should be provided to those responsible for carrying out the mitigation project, taking into consideration corruption control measures since huge amount of money are involve not forgetting local community participation in the mitigation project.

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[xv] Or an authorized agent or contractor
[xvi] Section 404 of the Clean Water Act, Compensatory Mitigation Mechanisms, https://www.epa.gov . last accessed on the 3rd of March 2022
[xvii] Activities such as creation, reallocation and enhancement.
[xviii] Such as reconstruction of antecedent physical conditions, chemical adjustment of the soil and water, and biological manipulation, including the reintroduction of absent native flora and fauna
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[xxxv] See Huggett, D. (1997) *Developing a No Net Loss Policy for Coastal Wetlands*. Marine Environmental Management Review of 1997. Volume 5, Paper N°. 13. Pp. 5-7.
[xxxvi] Convention on Environmental Impact Assessment in a Trans-Boundary Context (Expoo, Finland, 25th February 1991), developed under the auspices of the UN Economic Commission for Europe.
[xxxvii]Such as vernal pools, with their rare flora.
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