

# Natural Resource Management with Reference to Wetland in Osmanabad District

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## **Abstract:**

This paper examines the factors impact and critical analysis of natural resource management with reference to wetland in Osmanabad district. Wetlands are extremely important natural resources. Wetlands perform functions that are both hydrological and ecosystemic. Both humans and the natural environment benefit from these. However, wetlands need to be managed in a sustainable way to ensure that, not only the present, but also the future benefits continue to human lives. Sustainable management techniques will almost necessarily require a degree of legal involvement. Although the humans can be control and manage natural resources for sustainable development. As human populations grow and water resources dwindle, this continuing dilemma will become increasingly severe. To address this issue, the challenge is to construct a set of conservation and arrangements that successfully integrate both the natural and human processes relating to wetlands. This may include, for example, consideration of : a) the management relating to water in wetlands; b) how sustainability is to be achieved in the context of wetland management; c) how to strike an appropriate balance between the interests of humans and those of the natural environment; d) how the interests of the natural environment are to be protected.

The increased deployment of natural resources related to wetlands is central to meeting the key contemporary natural resources management challenges of sustaining and improving natural products availability and quality, while reducing wetland related risks. The inadequate recognition of ecosystem's roles in natural resources management reinforces the need for transformational change, and increased uptake of nature based solutions provides a means to achieve it. Without a more rapid uptake of such solutions, water security will continue to decline, and probably rapidly so.

**Keywords:-** natural resources, management and conservation, wetland, water cycle, sustainable use etc.

## **Introduction**

Wetlands make a critical contribution to Osmanabad's economy. Wetland resources represent one of Osmanabad's vital ecological and economic natural resources. In addition to their direct use values such as crop cultivation, fishing and extraction of useful materials, wetlands are essential for life support processes such as stabilization of the hydrological cycle and micro climate regulation, protection of riverbanks, nutrient and toxin retention, and sewerage treatment among other uses. There are critical linkages between wetlands and the performance of other sectors such as the water and agricultural sectors. Wetlands degradation can therefore affect the functions and costs of these sectors and can hamper the attainment of their strategic objectives. Wetland resources are also important contributors to the attainment of the Millennium Development Goals (MDGs) of eradicating extreme poverty and hunger, promoting gender and equity, improving health, and ensuring environmental sustainability. Despite their contribution to national socio-economic development, the full economic value of wetlands is not adequately understood nor appreciated. Nationally it is estimated that 2,376 sq. km of wetland areas have been drained (NEMA, 2001); the underlying cause being encroachment for agricultural expansion and industrial development. Pressure on wetlands is exacerbated by the high annual population growth rate (3.2%). Government has capacity constraints for wetland management which limit it from being more effective in ensuring that wetlands are used wisely to maintain their roles in reducing poverty. The NDP planning process provides an opportunity for developing strategies and implementing practical programmes to address these limitations. In line with the NDP objectives this report identifies the following strategic objectives for the wetlands sector:

- Promote development and implementation of community wetlands management plans.

- Promote implementation of sustainable wetlands management programmes.
- Enhance sustainable conservation, and management and use of wetlands so as to optimize their socio-economic and ecological benefits to the local, national and international communities;
- Restore environmentally degraded wetland ecosystems by undertaking restoration activities involving all concerned stakeholders.
- Promote research to improve the productivity of the wetlands natural resource base and map out critical and vital wetlands throughout the country.
- Review and update laws, policies, regulations, standards and guidelines for wetlands management and ensure that they are enforced for efficient and effective wetland resources management.
- Strengthen the capacity of lead agencies and other institutions to implement programmes for wetland management.
- Strengthen the institutional framework for wetland management at all levels.
- Provide timely and correct information on wetlands.

#### **Purpose of the Study**

This Wetlands Resources Sub-sector Study is one of the five studies undertaken through the National Environment Management Authority as an input for revising the Poverty Eradication Action Plan (PEAP) and developing the National Development Plan (NDP). The PEAP, which expires in 2008, has been Osmanabad's Poverty Reduction Strategy and a comprehensive national development framework. It is being revised to inform the new five-year National Development Plan (NDP). NDP's theme is 'Growth, employment and prosperity'. This study aims at contributing to the Environment and Natural Resources (ENR) Sector Working Paper for the PEAP review. It is an opportunity for the ENR sector to move forward on the basis of experiences gained, lessons learned, and the challenges and opportunities presented by emerging situations. The ENR Sector Investment Plan (SIP), 2007 recognizes that Osmanabad's economic growth has been based on its natural resources, with over 50 percent of its gross domestic product (GDP) depending on its natural resource base (MWE, 2007). Wetlands resources constitute an important component of natural resources in the country. This study reviews the contribution of wetlands resources towards growth, employment and prosperity, and determines the priority areas for the wetland resources sub-sector and the strategies to achieve them in the five years of the NDP. This study also provides valid and reliable background information for the ENR sector, which will enable the PEAP revision process to recognize the contribution of wetland resources as a sub-sector and identify priority strategic interventions to integrate into the NDP. Finally, the study may be used as reference material in other processes that support the role of wetland resources in the national development process.

Methods of the Study This study was undertaken by the consultants through the methods outlined in Table 1.

**Table 1: Study methods, activities and outcomes**

<b>Methods</b>	<b>Activities</b>	<b>Outcomes</b>
Literature Survey	Examine the current literature (policy and the relevant laws, strategic/ sector plan, guidelines related to GDP, NDP, PEAP) from the lead agencies in ENR sector.	Clarification on what has been done, lessons learned and the gaps that need to be addressed in the study.
Semi-structured interviews on wetlands resources-based opportunities, their level of development, concerns and issues.	Participate in meetings with wetlands resource based lead agencies (leaders and technical personnel) and development partners.	Clarification on policy, laws and implementation issues, land use opportunities, weaknesses, threats and access, ownership, roles played by wetlands resources in their organizational mandates and their linkages to 'growth, employment and prosperity' established.
Data compilation and analysis.	Collate, analyse and document the results. Establish trends.	Synthesized information and trends.
Presentation of key aspects of the Wetlands Resources Sub-sector Paper, followed by discussions.	Draft and present the Draft Wetlands Resource Sub-sector Paper to the ENR Sector Drafting Committee.	Draft and present the Draft Wetlands Resource Sub-sector Paper to the ENR Sector Drafting Committee.
Completion of the report and submission to Sector Working	Prepare the final report.	Report on the study with a summary of the findings and

Paper drafting team coordinator at NEMA		recommendations.
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### Conclusions

Water quality of the wetland was determined through the 18 different physico-chemical parameters. The present study was carried out on wetland of Vadodara district. The study of physical, chemical parameter of water and soil were carried seasonally from 2011 to 2012. The physical and chemical parameters included in the studies are temperature, turbidity, total dissolved solids, pH, total hardness, calcium, magnesium, chloride, sulphate, nitrate, fluoride, alkalinity, sodium, potassium, eclectic conductivity, phosphate, biological oxygen demand and chemical oxygen demand for water. The present study reveals that the water quality is not good for drinking purpose and it is under threat. There were various at herogenic activities were take place like release of domestic wastage directly release, plastics are the major pollutant surround the wetland. The physico-chemical parameters are compared with the BSI and WHO guidelines for drinking water to know the quality of water. Parameters like Temperature, Turbidity, Magnesium, Chloride and Fluoride were under the permissible limit of BSI and WHO. Whereas total dissolve solids, pH, total hardness, calcium, sulphate, nitrate, alkalinity, sodium, potassium, electric conductivity, phosphate, biological oxygen demand and chemical oxygen demand were above the permissible limit. Study shows water quality and soil analysis and flora and fauna. Wetland interacts with the birds, plants, amphibians, insect, reptiles. Study shows wetland are with the different ecosystem services. Earlier scientist has developed reference data for comparison for crop field. Due to absence of reference data for wetland we could not compare the soil data with the reference. There is need to evaluate the reference data for wetland soil after studying most of wetlands. Wetlands are important entity known for their ecosystem services. Water resource is one of the service provided by the wetlands. Study shows water quality data can be helpful to evaluate wetlands health. Study will also be helpful in determining indicators for the wetland. Wetland is water resource it helps in maintaining ground water level. Hence wetland conservation is need of time we need strong policies and research which clarifies wetland and non-wetland areas. Present study will act as baseline data for developing policy for wetland and will also help in better understanding. In the present study 420 species and 330 genera of flowering plants belonging to 91 families which provide basics for survival for others animal including birds (114 species), reptiles (9 species), amphibians (2 species) and insects (14 species).

### References

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