

## Revitalising Rural Odisha A Case Study on Soil and Water Conservation in Nuapada

**Mita Meher**

Assistant Professor, School of Agriculture, GIET University Ph.D. Scholar, IGKV,  
Raipur

ARTICLE ID: 39

### Abstract

This study examines integrated soil and water conservation efforts in Nuapada, Odisha, under the Odisha Forestry Sector Development Project (OFSDP-II). Through techniques like terracing, bunding, and water harvesting, the project addressed critical challenges of soil degradation and water scarcity. The initiative's outcomes—improved soil fertility, enhanced water security, and sustainable livelihoods—are discussed alongside lessons for scaling similar efforts across vulnerable regions.

### Introduction

Odisha, a state in eastern India, is endowed with rich natural resources but faces significant challenges of soil erosion and water scarcity. This issue is particularly severe in hilly and tribal regions like Nuapada. This case study explores a community-driven initiative that successfully revitalized the local ecosystem and improved the livelihoods of tribal communities.

### The Problem: Soil and Water Degradation

Nuapada district, located in Odisha's western region, relies heavily on agriculture. Unsustainable farming practices, deforestation, and erratic rainfall patterns led to severe soil erosion and water depletion. The region's hilly terrain exacerbated rainwater runoff, resulting in the loss of fertile topsoil and causing:

- Reduced agricultural productivity.
- Seasonal water scarcity affecting drinking water and irrigation.
- Increased migration of tribal communities to urban areas.

### The Initiative

In 2018, the Odisha government launched the Watershed Development Program under OFSDP-II to restore soil health and improve water availability. Key components of the program included:

### Soil Conservation

Techniques such as:

- **Terracing and Bunding:** To reduce surface runoff and retain topsoil.
- **Afforestation:** Planting native species to stabilize the soil.

### Water Harvesting

- The projects constructed 5 new check dams as part of water conservation initiatives aimed at managing run-off and enhancing groundwater recharge.
- The initiative also facilitated the construction of 33 new farm ponds, complemented by the use of 44 existing village tanks and farm ponds. These measures supported activities like groundwater recharge, horticulture, and pisciculture
- Recharge of groundwater tables, improving year-round water availability.

### Livelihood Enhancement

- Integration of sustainable agricultural practices and agroforestry.
- Promotion of alternative income sources like bamboo cultivation and medicinal plants.

### Community Involvement

- Formation of Village Development Committees (VDCs) to oversee natural resource management.
- Women-led Self-Help Groups (SHGs) managing resources and spearheading livelihood projects.

### Outcomes

#### Soil Restoration

- Soil fertility improved significantly, enabling the cultivation of diverse crops such as paddy, millets, and vegetables (Government of Odisha, 2018-2022; New Indian Express, 2020).
- Organic farming practices reduced dependency on chemical inputs (New Indian Express, 2020).

#### Water Security

- Groundwater levels rose in participating villages, with some areas experiencing increases of up to 7 meters (Government of Odisha, 2018-2022; New Indian Express, 2020; CAMPA reports).
- Year-round water availability minimized migration and reduced dependency on external sources (New Indian Express, 2022).

### Livelihood Resilience

- Approximately 400 farmers shifted from single-crop paddy cultivation to diversified crops, including horticulture and organic farming (New Indian Express, 2020).
- Around 93 landless beneficiaries were supported with poultry and goat farming, boosting incomes and resilience (Government of Odisha, 2018-2022).

### Ecosystem Revitalization

- Enhanced vegetation and water retention fostered ecological recovery, with native plant species and better local biodiversity returning (Government of Odisha, 2018-2022; CAMPA reports).

### Lessons Learned

- ✚ **Community Ownership Is Key:** Active participation by local communities ensured the sustainability of conservation measures.
- ✚ **Integration of Livelihoods and Conservation:** Linking natural resource management with income-generating activities fostered greater community buy-in.
- ✚ **Policy and Local Partnership:** The initiative's success stemmed from strong government support combined with grassroots involvement, creating a replicable model.

### Challenges and Mitigation

#### Initial Resistance

- Resistance from some community members was mitigated through awareness campaigns and demonstration projects.

#### Funding Constraints

- Leveraging government and NGO partnerships ensured financial sustainability.

### Conclusion

The Nuapada case demonstrates the transformative potential of integrated soil and water conservation. By addressing ecological and livelihood challenges simultaneously, it offers a replicable model for sustainable rural development. In the face of climate change, such initiatives are crucial for building resilient communities.

### References

Government of Odisha. (2018-2022). *Odisha Forestry Sector Development Project (OFSDP-II) Reports*.



Das, B. (2021). “Restoring Livelihoods through Watershed Management: A Study from Odisha.” *Journal of Sustainable Development Practices*, 15(3), 45-57.

Mohanty, R., & Behera, L. (2020). “Community-Led Natural Resource Management in Tribal Odisha.” *Odisha Economic Forum Publications*.

National Institute of Rural Development and Panchayati Raj (NIRDPR). (2021). *Watershed Development Success Stories: Odisha Chapter*.

New Indian Express. (2020). “Climate Change Projects Script Success in Odisha's Nuapada.” Retrieved from New Indian Express.

CAMPA Reports (2022). *Water Conservation and Climate Adaptation Efforts in Odisha*.

