

SedNet Model: an overview

Outline of presentation

Introduction

Overview of SedNet

Watershed Management Framework

SedNet

Pulot Watershed

Ecosystem Services

Threats to ES

Phil-Waves

Conclusion

History

Driving force: widespread land-use change

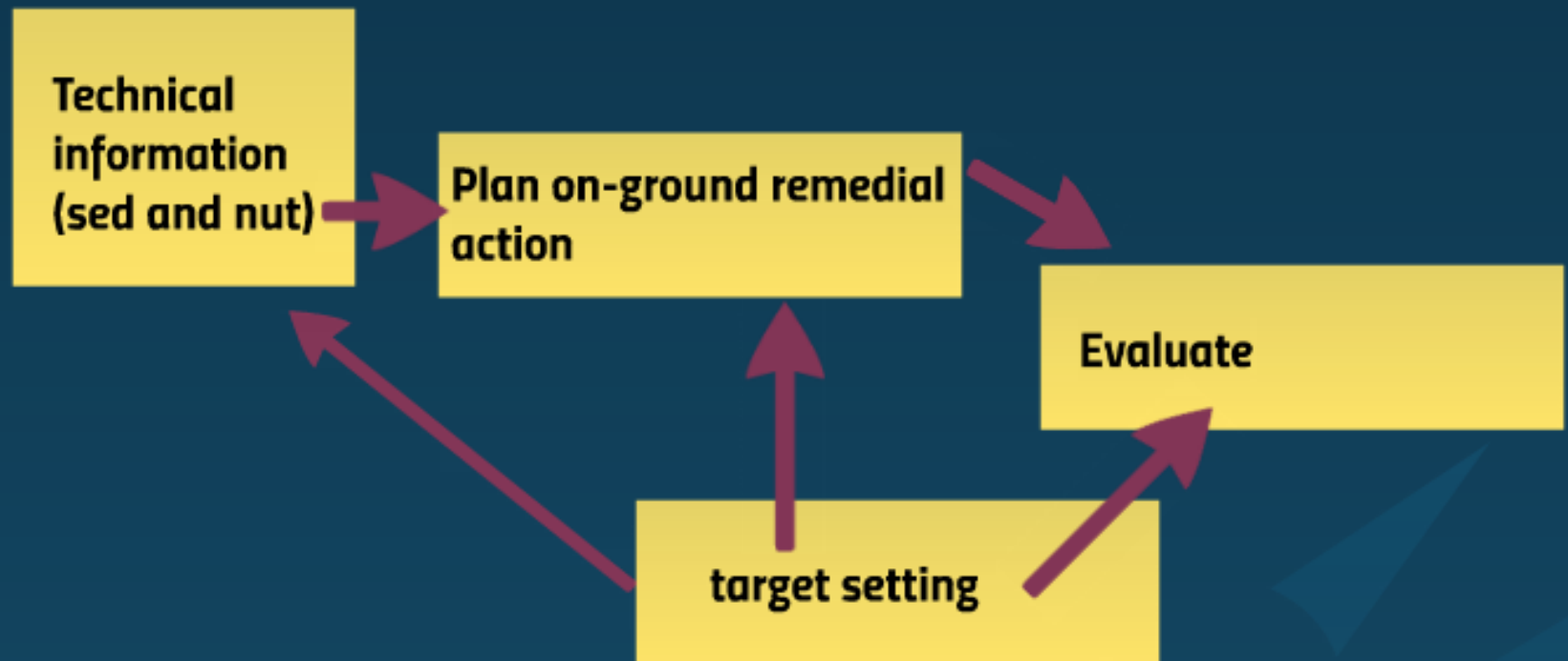
Pressure: (+) supply of sediment to rivers

State: (-) primary production by planktonic and benthic algae

Impacts: (-) food and oxygen for fish and benthic invertebrates

Response: Improve water quality to maintain the sustainable use of water resources and improving riverine health.

Watershed Management Framework



SedNet

- **assist the targeting of catchment management actions**
- **identifying dominant erosion processes and areas within the catchment**
- **model constructs sediment and nutrient budgets for river networks to identify patterns in the material fluxes**
- **These budgets account for the major sources, stores and fluxes of material throughout the catchment**
- **Commonwealth Scientific and Industrial Research Organisation (CSIRO)**

How does it work?

- uses spatial modelling to build the budgets considering the ff: factors:
 - river discharge
 - soils
 - vegetation cover
 - geology
 - terrain
 - and climate
- Scenarion Analysis



Scenario Analysis

- simulate proposed management strategies to investigate its effectiveness prior to implementation
 - interactively change the attributes which affect sediment supply to streams
- maximise use of the limited resources by minimising the best result for minimising sediment export from the catchment.

Pulot Watershed

Ecosystem services



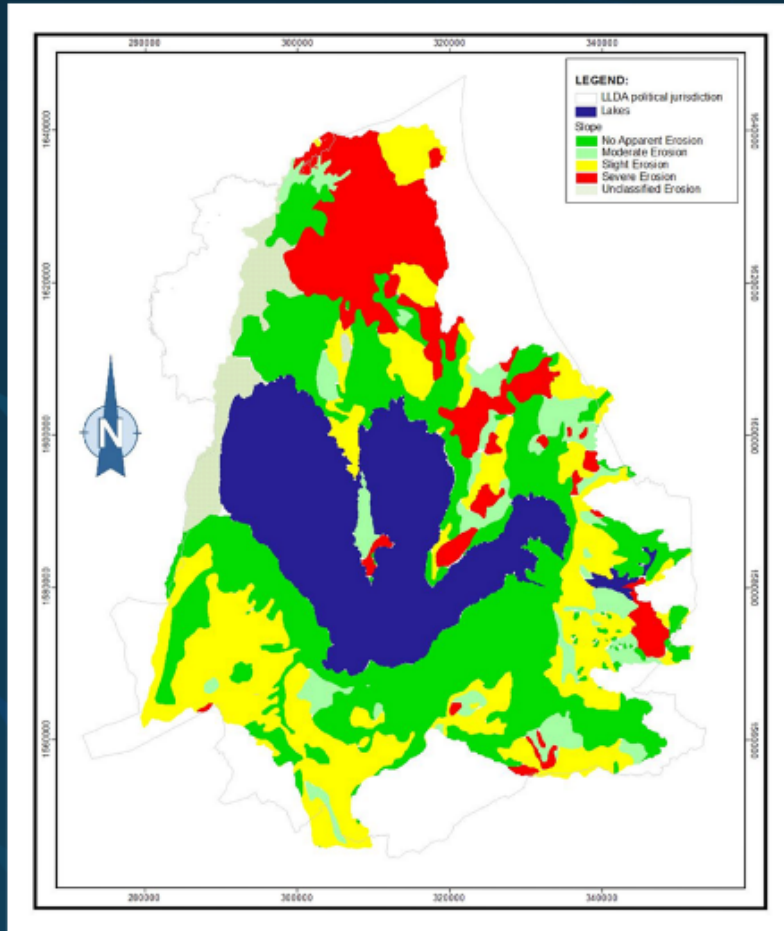
Threats to ES

- Eutrophication
- Sedimentation
- Solid, liquid and thermal pollution
- Flooding
- Scarcity of irrigation and potable water



Phil-WAVES

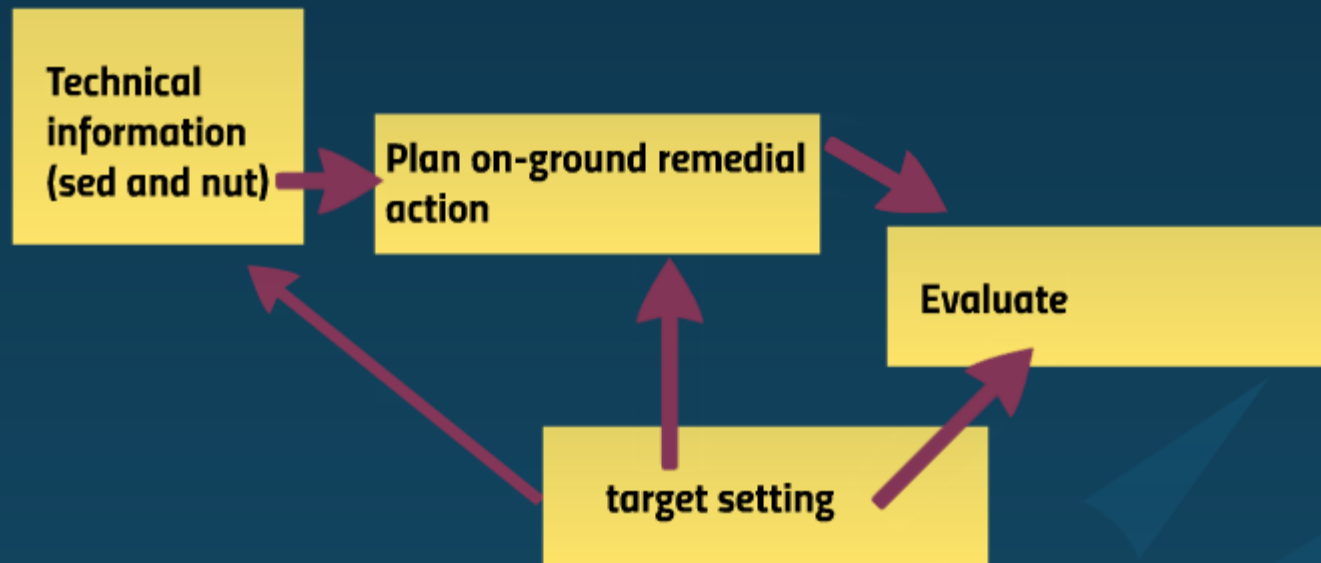
- The objective of the Philippine Wealth Accounting and Valuation of Ecosystems (Phil-WAVES) initiative is to promote sustainable development through the implementation of wealth accounting that focuses on the value of natural capital and integrating NCA in development planning and policy analysis.
- PCSDS has identified flood retention as one the key ecosystem services they want to focus on in Pulot Watershed



***e.g. Erosion and
sedimentation in
Laguna Lake***



Watershed Management Framework



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SedNet

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Conclusion

- **SedNet** can help elucidate the true value of **Laguna Lake Basin** in terms of Flood Retention
- Targeting hotspots
- more appropriate measures
- less resources
- Scenario Analysis
- Time series analysis (monitoring)
- Recommendation: Nutrient Loading



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