



GUIDANCE NOTE FOR ONSITE AND OFFSITE MANAGEMENT OF EXCAVATED MATERIALS FROM TANK DESILTATION



Where dredging or de-silting of small tanks has to be carried out, it is important to consider the disposal aspect early in the project. Disposal to an identified site is the most common practice currently, however a more economically viable and environmentally friendly way is to re-use the material onsite as much as possible.

Excavated silt from the tank bed can be used onsite for two types of purposes

- **Environmental uses** - habitat creation and enhancement, agricultural land enrichment, aquaculture land preparation and rehabilitation of local burrow sites.
- **Engineering uses** – rehabilitation of minor flood defense structures and road construction.

This guidance note provides a quick look at potential options for managing material excavated/dredged from the tank beds in the CSIAP subprojects.

I. HABITAT CREATION AND ENHANCEMENT



Figure 2. Dredge material used to create new habitat in the high flood area of a tank (Source: IUCN)

3. REHABILITATION OF LOCAL BURROW SITES



Figure 5. Earth burrowing in rural areas and associated hazards

- Often for small tank rehabilitation projects, earth burrowing is done in within the locality and are often left abandoned after usage.
- These abandoned borrow pits can lead to fatal accidents for both humans and animals.
- They may also lead to health risks associated with mosquitos with water stagnation especially during the rainy season.
- Dredge material can very easily be used to fill these burrow sites as part of the site rehabilitation. Refer to the guidance note on burrow site rehabilitation for further information.

4. AGRICULTURAL USES



Figure 6. Use as topsoil for agriculture



Figure 7. Erosion control in agricultural fields
(photo: www.stancounty.com)



Figure 8. Berms in paddy fields

- Dredged material (usually the finer fraction) can be applied either alone or mixed with other materials such as biosolids, manure, compost and other organic material to create valuable topsoil material.
- Dredge material reflects the environment from which it is dredged, and in some instances is subject to contamination from local or distant sources. The presence of contamination may limit its secondary usage, hence the risk needs to be considered. Soil contamination is not seen as a major risk in the small tank cascade systems.
- Sometimes treatment to stabilize or remove contaminants may be required before it can be used. This is likely to increase costs and handling time and in such a case you may want consider another use.
- Dreddge material can be used for erosion control structure as in Figure 7 where they are set up perpendicular to the water flow.
- They can also be used to erect berms in paddy fields as shown in Figure 8.
- Inputs from the Department of Agriculture and the local farmers should be considered in adopting these.

5. AGRI-ROAD REHABILITATION



Figure 4. Agri-road construction (photo: CSIAP)

- De-silting material can be used for the filling of agri-roads and the road embankments.
- However, for this, an analysis of the soil quality and suitability has to be carried out as all such material is not always suitable for this purpose.
- Engineering inputs will be needed for this.

IMPORTANT POINTS

- Early consideration of the use of the dredged material when first planning the dredging project is key to its successful use.
- The possibility of retaining it within the system for environmental benefit is a first consideration.
- If required, sample testing of the dredge material should be carried out at the onset of implementation
- It is important to gain support from the public, regulators and wider stakeholders to view dredged material as a valuable resource and to recognize it as a contribution to sustainable development.
- Decisions on the use of the dredge material should be done in consultation with the implementing institution, community, local authorities and other relevant stakeholders.