

# Economic Factors Affecting the Viability of the Beneficial Use of Dredged Material in the UK

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## CEDA UK Committee Liaison Group on Beneficial use of Dredged Material

Report into the economic factors affecting the viability of the beneficial use  
of dredged material in the UK.

# Overview

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- Project Rationale and Purpose
- Background to the Study
- Approach to the Study
- Findings of the Questionnaire
- Conclusions



# Project Rationale and Purpose

- In 2017 the committee of CEDA UK, through its Beneficial Use Liaison Group, initiated a project to try and understand the economic and commercial aspects that influence whether beneficial use of dredged material, as an alternative to disposal at sea, is successful.
- For both the dredging and disposal of sediment in the UK, a number of consents and permissions need to be obtained under the constraints set by a range of environmental legislation, policy considerations and land ownership.
- Even with the regulatory issues resolved, it is perceived that the commercial and economic aspects of beneficial use would represent on-going potential barriers.

# Background to the Study

- Over the past twenty years, maintenance dredging has accounted for the majority of the content of dredged material disposed of at sea; on average 13.9Mt of material per annum. Capital dredging averages at 5.9Mt.
- Today, this has reduced to around 10Mt of sediment is disposed at licenced sites within the UK Exclusive Economic Zone.
- Only a relatively small proportion is used in specific projects that generate benefits in the form of economic development, coastal defence or habitat creation.

# Background to the Study

## Uses of dredged material

- Opportunities for the use of dredged material can be divided into two broad categories (PIANC, 2009):
  - Engineering uses (i.e. construction and improvement works); and,
  - Environmental uses (i.e. creation, restoration, enhancement and improvement works).

# Background to the Study

## Uses of dredged material – Engineering uses



# Background to the Study

## Uses of dredged material – Environmental uses



# Approach to the Study

- For the purposes of the project, a beneficial use scheme was defined as:
  - “Where materials are derived from either maintenance or capital navigation dredging and used in other projects instead of being disposed of at sea.”
- Consultation led - gaining views, insights and perspectives from a wide range of stakeholders. These included port operators, harbour authorities, dredging contractors, consultancies, government agencies and advisors, NGOs, and local authorities.
- A questionnaire was created, which provided the template for collation of views and to provide the agenda for subsequent interviews.
- The discussion centred on the following main topics, which formed the structure of the questionnaire;
  - Barriers and constraints affecting beneficial use
  - Potential Solutions



# Findings of the Questionnaire

## Barriers and Constraints

- Stakeholders identified a number of significant barriers and constraints around the beneficial use of dredged material as follows:
- Dredged material doesn't meet technical specifications / Insufficient site investigation (SI) data.
- Significantly increased costs due to differences in location / type of plant required / methodology compared to disposal. There were a number of reasons given for the significant cost differential:
  - The beneficial use site is often at a greater distance from the dredge area than the disposal site;
  - Beneficial use sites are generally coastal (in shallower water) and require smaller dredge plant or a different type of placement methodology than sea disposal;
  - Silt and sand may need additional containment measures at the beneficial use site;
  - The rate of placement at the beneficial use site may be slower than at a disposal site leading to an increase in programme; and,
  - The monitoring requirement for beneficial use sites is considered over precautionary and disproportionate.

# Findings of the Questionnaire

## Barriers and Constraints

- Difficulties in aligning the programmes of dredging and beneficial use activities.
- Lack of regulatory drivers for beneficial use and an unsupportive regulatory framework.
- Stakeholders made the following points about the regulatory process:
  - The regulatory approach discourages beneficial use and consenting in general is more difficult than 20 years ago;
  - There is no political will to support beneficial use;
  - The bill for licence applications from the MMO is not foreseeable and is “out of control” – this is a significant issue for public authorities;
  - The cost of the regulatory process itself is now a barrier;
  - The regulatory process is too slow and too expensive;
  - The regulatory approach to risk is too high – the regulators must be prepared to use experience and existing data;
  - The costs of environmental assessments required for beneficial use are disproportionate for small businesses; and
  - The Waste Framework Directive is a barrier for use of dredged material on land.
- Lack of visibility of beneficial use projects amongst wider stakeholders.

# Findings of the Questionnaire

## Potential Solutions

- A range of potential solutions were offered and discussed during the course of the stakeholder interviews. These are summarised below:
  - A sediment disposal charge or levy;
  - Creation of a “sediment exchange” database;
  - Generation of a pre-consented local disposal site;
  - Improved regulatory efficiency; and,
  - Others
  
- There was a consistent view expressed across stakeholder groups that behaviour around beneficial use would change if other drivers could be introduced. These drivers can be summarised as;
  - Increased need/requirement
  - Reduced cost

# Findings of the Questionnaire

## Potential Solutions

- Sediment Disposal Charge
  - It was generally accepted that the charge would be passed on to the consumer in some form.
  - The type of organisation responsible for generating sediment for disposal at sea varies, as does their funding mechanism.
  - A view was expressed that introduction of a charge could be inequitable, since ports in some parts of the UK have an inherently larger sediment budget to deal with.
  - It was perceived by some stakeholders that the additional costs of providing a beneficial use solution were significant, meaning that the scale of charge likely to be needed to generate the financial case to justify viability for an alternative scheme would also need to be significant to force a change in behaviour.
  - The introduction of a charge was felt by some to represent a potential disincentive for investment in the ports sector.
  - In the event that a charge could create additional value (for example through a habitat banking scheme) then interest could be generated by the material producers through access to that value.
  - The concept of a charge creating a funding pot that could be used to assist the development of appropriate schemes was of interest

# Findings of the Questionnaire

## Potential Solutions

- Sediment Exchange Database
  - Contractors were not generally supportive of the concept of a database, since they derive competitive advantage from their knowledge of the local market – all other stakeholders supported enhanced visibility of beneficial use schemes.
  - For a database to be successful, it would need to contain a sufficient level of detail in relation to both the beneficial use scheme and the material availability. This should include detailed site investigation data, project timing etc.
  - Material producers (ports / developers) would need to be encouraged to provide site investigation information as early as possible. Early availability of comprehensive data was felt to be an important factor in encouraging the development of potential beneficial use projects.
  - Although the concept of a database was widely supported, there were concerns as to which organisation would fund, develop, maintain and manage it.
  - It was perceived that even if a database was provided, it may not overcome core project development gaps such as cost variance, timing alignment, risk appetite etc.

# Findings of the Questionnaire

## Potential Solutions

- Generation of a pre-consented local disposal site
  - The availability of a local pre-consented scheme that would act as a habitat creation / beneficial use facility that was available for use by multiple waste generators was generally a popular idea.
  - A successful scheme would overcome the significant concerns expressed by many around regulatory burden, and address other major inhibitors such as cost / risk / timing.
  - It was likely that such a scheme would require the co-ordinated involvement and cooperation of multiple stakeholders to develop, and would only be suitable for selected sites where source material was sufficiently proximate to the receptor site to keep the cost differential against disposal at sea low.
  - This type of solution would lend itself to a regional approach, supported by bodies such as the Solent Forum BUDS scheme on the south coast of England (ABPmer2018).
  - As an alternative, it was suggested that use of a seabed storage scheme should be considered in some key locations – accepting that double handling of sediment and losses through natural attrition would be inevitable.

# Findings of the Questionnaire

## Potential Solutions

- Improved Regulatory efficiency
- The UK regulators and the wide range of associated stakeholders require education to be receptive to the concept of beneficial use.
- The regulatory process should be seen as a way of enabling beneficial use, and not preventing it.
- The wider benefits of “waste” disposal avoidance should be taken into account in the decision making process.
- Conflicting regulations need to be better aligned.
- A more flexible / co-ordinated approach should be adopted by different regulators and their advisors.
- The potential for, and the process of obtaining external funding for habitat creation (e.g. Environment Agency “Grant In Aid”), should be more effectively publicised in order to generate understanding from potential receptor sponsors.
- Alternative funding sources for public authorities should be explored.
- Recognition of the fact that if beneficial use is considered a ‘good thing to do’ then the regulatory process should be managed in a way that provides an incentive, and not a barrier.
- Potential for discounted application costs and the introduction of a flexible or fast track approach were suggested.
- A desire for beneficial use to be seen (by all) as a positive outcome would assist the process – and make those involved feel good about themselves and their projects.

# Conclusions

- This project demonstrated that there are two highly significant barriers to the beneficial use of dredged materials in the UK:
  - Disproportional cost when compared to disposal at sea; and,
  - The lack of a strong regulatory driver.



# Conclusions

- These and a number of other (lesser) barriers and potential solutions are summarised as follows:
  - Each potential beneficial re-use scheme will have its own unique business case; closing the fiscal circle is a fundamental requirement.
  - Existing cost barriers preventing beneficial use were felt to be significant. A significant realignment of the cost position would be required to overcome what currently represents a considerable obstacle.
  - There remains the potential for a change in regulation and a review of regulatory process to have a positive impact on beneficial use activity, by driving change through legislation.
  - Better sharing of information and data in relation to potential beneficial use schemes is desirable.
  - In certain locations, the provision of a licensed multi-use habitat creation facility could remove the regulatory barriers and increase the successful beneficial use of dredged material.
  - Requiring a wider scope of analysis as part of sediment characterisation for disposal could provide greater confidence in the potential for the material to be used beneficially.