This paper constitutes a review of the special CEDA Dredging Days “Dredging Seen — Perspectives from the Outside Looking In”, November 2001. The Organising Committee invited individuals and organisations that do not dredge but have some link with the dredging community to present their views on the industry. A number of contributors ranging from Clients to Licence officials to Port Authorities to Bank and Insurance agents to Greenpeace obliged. Their opinions offer an interesting view on how the dredging industry is perceived by others.

This overview is published here for the first time with the cooperation of CEDA.

Introduction

In November 2001 at the RAI in Amsterdam, the International Technical Paper Committee for the CEDA Dredging Days, headed by W D Rokosch of the Ministry of Transport, Public Works and Water Management, North Sea Directorate, The Netherlands, took a chance and chose to do “something completely different”, to quote Monty Python. The title of the conference, “Dredging Seen — Perspectives from the Outside Looking In” was a deliberate play on words implying the double meaning of the dredging “scene” and how dredging is “seen” by others. The Organising Committee invited individuals and organisations that do not dredge but have some link with the dredging community, to present their views on the industry.

Several of those invited were willing to do that, so we in the dredging industry spent a day listening to the perceptions of others about us. It was probably the first dredging conference ever at which there was not a single dredging contractor or dredging consultant speaking. It was a good discipline, listening to others instead of preaching to the converted — each other. If they understood nothing about dredging we could not blame them because it was probably our fault in that we had not told them properly. If they did understand it, are we listening to what they had to say about us? Well, did they get it right?

The First Session: The Client’s Perspective

The first session, chaired by Gerard van Raalte of Hydronamic BV, The Netherlands, considered the client’s perspective, with papers from R Ståle Larsen, Dr Lindsay Murray and Mr Pascal Gregoire.
R S Larsen: A Comparison of Contracts of 3 Pipe Laying Projects

Mr. Larsen of Statoil talked about different types of contract based on his experience on the Zeepipe, Europipe I, and Franpipe projects, and considered how well the dredging world is capable of meeting the client’s demands (Figure 1). For the Zeepipe project the company identified that the pipe laying was the most critical construction activity and so they wanted to reduce the number of contract interfaces. The main contractor was therefore to coordinate the landfall construction, dredging works, pipe laying, and post trenching. The form of contract for the dredging and post trenching works was a target lump sum.

For the Europipe I project the dredging and backfilling works were identified as critical. The company needed the dredging industry’s experience to apply for the construction permit and in this case Statoil decided on a day rate contract. In the third case, the Franpipe project the dredging industry was invited to discuss the best contract strategy and more or less choose between a fixed lump sum and a target lump sum with agreed sharing of the risk. The latter was chosen.

Larsen summed up his experience, concluding that:
- Dredging contractors are hard working and serious about meeting the client’s objectives.
- It was possible for the client to make considerable savings and for the dredging contractor to improve profits through good risk management but for this to work he recognized that the client has to take a proper share of the risk. The client has to recognize, for example, that an expensive piece of plant cannot simply be taken off the job for a period of time unless there is other work immediately on hand (Figure 2);
- Contractors have a habit of not complying with the tender. He was particularly upset that the tender had asked for the contractor to have their own resources whereas in reality they bought them in from other companies and this made him suspicious;
- Competitive tendering was not always genuinely competitive;
- Often a bid would be too conservative and this had implications for the client’s planning of the contract;
- The contractors failed to take the opportunity to invest in post-trenching plant so that they could bid for a bigger part of a pipe-laying contract. This would have benefited both client and contractor;
- On the whole contractors do not seem to like lump sum contracts.

Dr Lindsay Murray: Assessment of Dredged Material

Lindsay Murray is an advisor in the regulatory process for dredged material disposal in the UK. She described the legal framework and how the Dredged Material Assessment Framework (DMAF) of the London Convention is the main basis for her own assessment work (Figure 3). She titled her talk “The Invisible Man”, the point being that the people who really know about dredging—the dredgers themselves—come onto the licensing scene far too late in the process.

Based on her UK experience she found that the main early contact in the consent process was from the applicant himself, usually a port authority or developer. Rarely does the dredging industry itself make the initial contact. Indeed often at the time of application the dredging contractor has not yet been appointed. At the initial stage the requirement for dredging is known and a scheme for disposal has to be developed. Dr Murray knows what her concerns are likely to be and can suggest the sort of information that will be required, but where is the dredging industry?

The dredging industry, both contractors and consultants, are the people who know about the range of possible solutions. She would like to know, in making her assessment, what dredging options are
available and practical for the situation. For example, what techniques are available to minimise the impacts of dredging activity on nearby shellfish beds? Is there a possible beneficial use for the material? Will the way it is dredged affect the suitability of the material for beneficial use? In making her plea for the dredging industry to come out of the cupboard and get involved earlier in defining the dredging works she recognised that this might require changes in the tendering procedure. Dr Murray was not afraid to issue that challenge.

Summing up, she saw the developer as the one defining the requirement to dredge, the regulator as the one with the responsibility to look for environmentally acceptable solutions and the dredging industry as the one to say how it can be achieved.

In a final comment she made an appeal for some standardisation of the method of measurement pointing out the difficulty of interpreting wet tonnes, dry tonnes, cubic metres, hopper tonnes and so forth.

**Pascal Gregoire: Finding a Consensus for Dredging**

Pascal Gregoire works for the Department of Marine Access and Infrastructure at the Port Authority of Dunkerque, France. On a similar theme to that of Dr Murray he posed the question “how can we get a consensus between all the parties involved in dredging?” He also presented the DMAF (see Figure 3) as the basis for assessment, at the same time pointing out the complexities of the France’s own national legislation.
The contracting authority has to make sure that participation in the process is extended to:
- Local government services;
- Local territorial authorities;
- Social-professional organisations;
- Equipment and water management authorities;
- Associations and federations;
- Residents, inhabitants and the public.

Gregoire emphasized the need for public participation during environmental assessment stages, as well as the role of the dredging industry early on. He described a three step decision-making procedure (Figure 4) and how decision making can be assisted by the use of a multi-criteria analysis such as ELECTRA.

In drawing attention to the need for all parties to be involved in the process at an early stage, he points out that an important contribution of the dredging industry is in the field of developing technologies that reduce dredging impacts on the environment. This may mean modification to existing dredging equipment and development of new equipment. In saying this he also recognised that this implied extra costs which people were reluctant to bear.

The Second Session: Quality Control and Environment

The second session was entitled Quality Control and Environment and was chaired by Mr JCMM Claessens of the Ministry of Environment and Infrastructure of the Flemish Community, Belgium. Papers were presented by L Müller and H Steibekke, M Besieux, and Pier Vellinga.

L Müller and H Steibekke: Public and Political Interest in Ship Safety

The first paper of the second session was prepared by Mr L Müller, Director of Ship Classification at Germanischer Lloyd in Hamburg, and presented by Harald Steibekke. Offering a classification society’s view with regard to shipbuilding quality, Mr Steibekke noted that public and political interest in ship safety has increased rapidly as result of several casualties in recent years. In fact, despite the increasing complexity of the world’s dredging fleet, accidents have decreased, but this does not mean that there is room for complacency.

Ways to reduce and improve quality and safety in shipping must continue to be pursued. Certainly, however, the author did not see the solution as being yet more regulations. The industry is plagued by a continuously increasing number of regulations and excessive number of inspections. What is needed according to Müller and Steibekke is the efficient implementation of existing rules.
Mr Steibecke voiced his concern at the pressure being put on the shipyards to cut costs owing to worldwide competition, illustrating the consequences of this with many examples of poor materials, badly made components from suppliers and poor workmanship. He noted that the pressures also meant increasing reliance on computer models, despite the fact that models have the habit of making the same mistakes over and over again. Will the tail-fin fall off another Airbus he wondered, before the source of the problem is identified?

The increasing practice of outsourcing could easily lead to increased mistakes because the provider only sees one aspect of the construction task. The concluding plea was that the maritime industry (i.e., including builders and owners of dredgers) should take the opportunity to involve the classification societies, whose corporate philosophies are based on high standards, to maintain the quality and serviceability of the hull and all components in all vessels, including dredgers (Figure 5).

**M Besieux: The Real Problem is Contaminants**

In the second paper of this session, M Besieux of Greenpeace Belgium asked the question “Is Dredging the Real Problem?” It was clear from his paper that he did not think so, but rather proposed that the dredging community should be more involved in campaigning for elimination of contaminants at source. He used TBT as a case study.

TBTs arise from antifouling paint and the sediments in harbours are often contaminated with them. This is not usually the fault of the harbour authority or the people who have to dredge the sediments but the fact is that disposal of this material at sea transfers the contaminants to the marine environment. He thought that often sediments are placed in the marine environment with concentrations in excess of the 7 ppb that is generally considered to be acceptable.

Whilst M Besieux acknowledged that it was not the fault of the dredging community, he thought that they had a responsibility for safe management of the material. He made it clear that he thought that this included a moral responsibility to tackle the problems of control of pollution at source, even if there was no contractual responsibility. He called on the dredging industry to support the setting of a target to totally ban the use of TBT by 2003. Although it was pointed out in the discussion that CEDA itself is not a lobbying organisation, but rather a forum for those involved in dredging, Greenpeace sees the dredging community as one of the actors in the maritime world who could contribute positively to the passage of the IMO convention on Harmful Antifoulants.
Pier Vellinga: Dredging's Interaction with the Environment

Pier Vellinga, professor at the University of Amsterdam’s Institute for Environmental Studies, presented a fascinating and challenging analysis of dredging in a changing environment. In so doing he addressed, at a fundamental level, our interaction with the environment from a social and cultural perspective. He wrote:

“How long can a species [mankind] grow exponentially in numbers, in particular when such growth comes with increasing loss of other species? This question together with the history of being very vulnerable to the forces of nature makes our species presently rather insecure in dealing with nature. It should not be surprising therefore that political decision making regarding the management, use and protection of nature is often seen as erratic and irrational to the actors involved”.

Against this backdrop he examined three main views of nature:
- the conservation view (conserving and restoring according to some historical reference situation [when everything was good, or much better than it is today]);
- the development view (protection of existing nature and development of new natural sites); and
- the functional view (the value of nature is primarily related to the welfare it provides for society [i.e. it only has value if we find it important]).

How we view nature affects our decision making process. Prof. Vellinga called upon us to go for the “win, win” option and not to see development as being in opposition to conservation but to try to find creative ways of doing both at the same time, what he called “co-evolution”, “how to interact with nature, not how to beat it”. This requires a deeper understanding of the ecological processes.

He feels that companies that are socially responsive will in the long run create trust and win more work. He identified the major environmental concerns for CEDA as:
- Climate change;
- Loss of natural habitats (especially coastal);
- Water (water supply, water transport etc.);
- Pollution and polluted soils and dredged material.

In his epilogue Vellinga said:

“Dredging is easy, isn’t it? In my opinion, the real challenge for your profession is how to meet the needs of people in the field of shelter, transport, water and natural habitats, while enhancing the quality of natural systems and biological diversity”.

This implies: adhering to the concept of co-evolution and Triple P performance — Profit, Planet and People. (Vellinga’s paper is presented in full in the Proceedings, and in Terra et Aqua, nr. 88, June 2002, and is well worth a careful read whether or not you agree.)

The Third Session: Finance and Public Perception

The afternoon session was entitled Finance and Public Perception and was chaired by Dieter Girsch of LMG-Lubecker Maschinenbau Gesellschaft, Germany. Papers were presented by G. van der Starre, J Hazejager, and H B Roos.

G. van der Starre: The Role of Money

In his talk titled “Mud or Money, That is the Question”, former Vice President of Structured Trade Finance of ABN AMRO Bank, Netherlands, G. van der Starre presented a banker’s view on the financial side of the business of dredging companies working in a competitive international market.
Most dredging/reclamation contracts are done on a cash basis. In the past nearly all harbour dredging and reclamation works were done either on behalf of the governments of countries or on behalf of government entities, and guaranteed by the government itself or a state bank. The assessment of whether the borrower would be able to repay the loan was therefore not difficult and the structure of the financing was straightforward.

Things have changed. Many harbours are privatised. Where they are not, governments are often no longer prepared to guarantee the obligations of lower government entities. Some harbours view the BOT (Build-Operate-Transfer) construction as the ultimate solution for their cash-flow problems, “but a dredging firm is not real estate investment company”. And an Export Credit Agency (ECA) may be off cover and the development bank probably has no intention of financing a project if the debt burden of a country is already too high. Guidelines and a good overview of the parties involved in the financing of a project are clearly necessary (Figure 6).

The guidelines described by Van der Starre are based on a number of examples, in particular the financing of the Bahia Blanca project which involved agreements between the Argentine government and that of the USSR. Of course something happened that no one was able to predict — the USSR collapsed. Could this happen again? Looking at Argentina today one cannot ignore the question.

Van der Starre’s conclusion are valuable:
– A contractor should consider whether a tender with a financing paragraph is worth taking on if it is rather sure that financing will not take place due to the financial position of the potential client;
– Sales people should inform their financial people thoroughly and early about a potential deal in order to get a custom-made financial package, thus enhancing the success ratio;
– Financing is not “a piece of cake”, so choose an experienced banking partner;
– Port authorities should hire a bank as a consultant for projects over US$ 30-40 million.

Clearly, he deems early involvement with a reliable bank as an essential in the successful organisation of a dredging project. Once again, as with environmental assessments and public participation, paying attention at the beginning of a project points the way to smoother sailing.

**J Hazejager: The Rise and Fall and Rise of Dredging**

As Economic Editor of Algemeen Dagblad Netherlands, Hazejager entitled his paper “Is Hansje Brinker...”

Figure 7. According to Roos, when ports such as Barcelona (pictured here) consider expansion they must take into account the growth of external effects on the urban road network. The question of optimal ship size, port size and dredging services are interrelated.
still alive?” and answered his own question with a definite “Yes, not as a little boy with his finger in the dike, but as the spearhead industry related to constructing those dikes, harbours and artificial islands”.

However, although it very much alive, apart from a few notable exceptions of major “sexy” projects such as the Eastern Schelde storm surge barrier in the 1980s and the more recent Hong Kong Airport of the 1990s, the public shows little interest in dredging. In fact Mr Hazejager thought that the public was much more interested in the share value of a dredging company or some scandal involving a director, than a positive story about another successful completion of a project.

It seems that editors are busy people who don’t get time to investigate dredging news. He blames the dredging industry itself for the “unsexy” style and quality of the press releases. These are the main source of information for the press and only if it catches an editor’s eye is dredging likely to get any prominence. He also thought that we should not waste our efforts preaching to other people in the industry but rather make more effort to reach those who know little about dredging. Better communication with the press might be one way to achieve this.

H B Roos: A Long-term View of Ports and Dredging
Roos is at Erasmus University, Rotterdam and took a look at the question of port development and the demand for dredging in the long-term view.

Neoclassical economic theory deals with the question of optimal ship size and port size as an integrated problem. Roos extended the model to deal with dredging.

If you think that ships are going to continue to get bigger and that ports will get ever deeper and therefore the need more dredging will continue, then now is the time to think again. Studying a number of geographical social and environmental factors, Roos looked, for example, at increasing congestion and the increasing pressure that it puts on the environment. With the growing recognition of the need to conserve the environment this in turn is already affecting future development plans (Figure 7).

Because of its fixed investment character, port infrastructure cannot be moved to other places. This means that the market for port facilities is a buyers market. Usually the shipping companies have more than one choice, so ports have to attract shipping companies with lower prices. Using Barcelona as an example, Roos argues that port expansion will cause severe growth of external effects on the urban road network. Ports start to develop where initial infrastructure is available, mostly rivers. When the port hinterland is within reach of almost any place on the coast by rail or road, ports start a competitive game and will try to gain market share. Ultimately port activities will tend to be offered everywhere alongside the coast. Incorporating congestion effects into this model leads to even more dispersion or “sprawl” of port services.

Shipping companies are now looking for uncongested solutions: short sea and barge transport. Without heavy investments the great rivers of Europe will automatically become the arteries by which the hinterlands can be reached. However, there are many movements to be made on shorter distances to and from the port area. Truck transport is the best option but will lead to negative effects on seaport development.

Roos notes that seaport authorities such as Antwerp and Rotterdam are now trying to invest in additional railway capacity to minimise external effects and so to get a larger share of the shipper/producers surplus. All of this would appear to indicate a trend for fewer large and deep port dredging projects, but perhaps for more smaller and shallower projects with a possible need for more river navigation dredging. Time will certainly tell.

Conclusion

The unique approach of the International Technical Paper Committee was well worth the risk. This became very clear during the final discussion and the subsequent comments of delegates. These were sometimes controversial and sometimes convincing that yes, the dredging industry does have some things to learn and to think about from people who are outside of the industry but who come in contact with the industry professionally and on a regular basis. One of those points is that the dredgers should be involved at an early stage when environmental assessments need to be made. Another is the value of shared client-contractor risks for mega-projects.

Though these presentations may not have caused an experience of dramatic revelation, they certainly offered enough to consider — from the role of dredgers in environmental assessment of a project, to how to finance a project to communication with the public, as well as to the involvement of classification societies in the early design stages of shipbuilding. Early involvement be it of the public, dredgers, bankers or classification societies, seem to sound a note.

New information, especially if it is critical, may be rejected. However, it often slowly seeps in and opinions are gradually shaped by the views that we have been exposed to. Hopefully this experimental Dredging Days 2001 will have achieved something of that for most people that attended, including the speakers themselves.