

Maritime Solutions for a Changing World

The worldwide need for maritime construction keeps changing and so do the technologies offered by the dredging industry. Increased demands for clean energy, increased migration of peoples within countries and internationally, and growing urban hubs as well as threats from rising sea level are a few of the challenges that demand innovative dredging solutions. Although the downturn in the global economy which began in 2008 continued in 2012, the drivers which affect the dredging industry continue to stimulate demand. The growth of waterborne trade, urbanization and infrastructure expansions, offshore and alternative energy and climate change concerns remain in the forefront of the global economy. These have resulted in investments in innovations and solution-oriented approaches by the dredging industry. Together they have led to a 7 percent financial growth of the market as a result of exchange rate changes between the renminbi (CN¥) and the euro.

What drives dredging?

Worldwide economic prosperity, as well as social and environmental well-being, is directly related to dredging, in particular to the construction and maintenance of the maritime infrastructure. In July 2013 the world's largest container ship – the first Triple-E ship – commenced its maiden voyage from Busan, South Korea to Copenhagen, followed by number 2 in August and number 3 in mid-September. A fourth vessel in the Triple-E series will be departing in October. In total 20 Triple E ships will come into service in the next two years. Dredging is necessary to ensure port expansion and maintenance, so that these ships will be able to enter a sufficient number of ports.

The offshore industry is as well dependent on dredging, pre-sweeping, trenching and backfilling for pipelines and stabilizing platforms. These techniques allow the offshore industry to explore deep waters for oil and gas in remote parts of the world. Dredging also services offshore windmill platforms. The threat of flooding is addressed by the dredging industry as they build coastal defenses, storm-surge barriers and reinforce shorelines to prevent erosion.

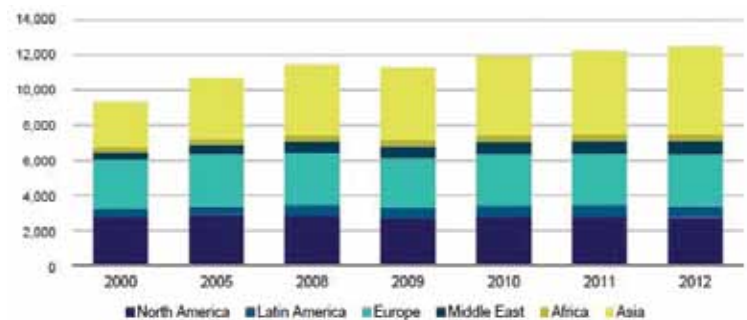
High-tech, highly specialized and capital-intensive – those are a few adjectives that describe dredging. On average the educational level of employees at the major private dredging companies is exceptionally high, with 40-50 percent having a bachelor's degree or higher.

In recent years the major international dredging companies have broadened their operations, developing from sub-contractors to main contractors to Engineering, Procurement and Construction (EPC) contractors. This allows them to offer more comprehensive solutions to clients.

Energy sector in focus

Whilst the search for alternative fuel sources continues, fossil fuels still dominate the global energy arena. More and more of these resources are being exploited offshore, often in remote areas at great depths. Dredging is therefore needed to prepare the seabed and dig trenches for pipelines, and then protect these pipelines

Chart 1: Global energy consumption 2000-2012 in million tons oil equivalent



Source: BP 2013

"... the drivers which affect the dredging industry continue to stimulate demand"

by backfilling with sand, gravel and rock. This includes a strong increase in the demand for liquefied natural gas (LNG), which necessitates new port infrastructures, thus generating a maritime infrastructure demand of its own. On the sustainable side, more and more wind farms are being placed at sea.

High fuel prices continue to encourage the expansion of the energy supply, also from non-conventional sources, for instance, the "shale revolution" for gas and oil. From 2011 to 2030 production and demand for shale gas and oil are expected to increase.

World primary energy consumption is projected to grow by 1.6 percent p.a. from 2011 to 2030, adding 36 percent to global consumption by 2030. The growth rate however declines from 2.5 percent p.a. for 2000-10, to 2.1 percent p.a. for 2010-20, and 1.3 percent p.a. from 2020 to 2030 (BP Energy Outlook 2030, January 2013).

The growth of dredging turnover

The drivers of dredging have developed favorably for more than a decade at a moderate, but steady pace. This is true of the dredging industry as well. This moderate, favorable growth has depended on several factors:

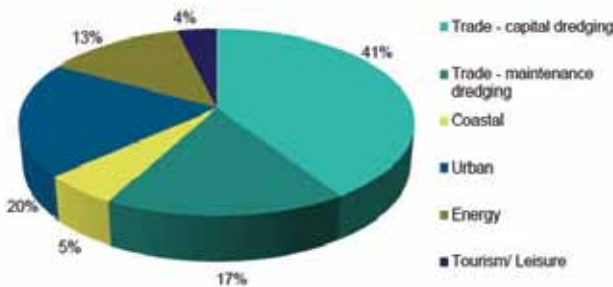
- Technological innovation has led to improved cost efficiency and a wider range of projects: The size and capacity of modern dredging vessels has grown resulting in economies of scale. The newest fleets can dig to greater depths and transport sand from remote borrow

areas at greater distances and faster speeds. The dredging industry continues to invest in the development of more fuel-efficient ships, equipped with state-of-the-art technology and high-tech systems. These advances make complex projects more financially feasible.

- Engineering and environmental R&D produced by a highly skilled workforce has allowed the industry to make a greater design contribution to large-scale projects. Clients are benefiting from the early involvement of the major dredging companies whose expertise has created new markets and contributed to sustainable solutions.

- In addition, in 2012 the turnover in China rose because of the change in the currency rates of the renminbi (CN¥) toward the euro even though the size of the dredging market has remained similar to previous years.

Chart 2: Turnover of the global dredging market 2012



Source: IADC

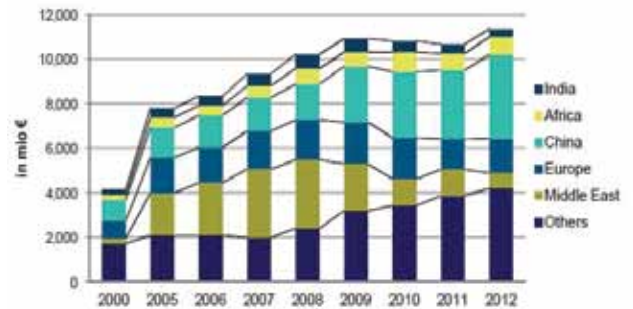
Turnover of the global dredging market 2012

The estimated total turnover of global dredging contractors – private as well as state- or port-owned companies – is estimated at €11,370 million for 2012. The Chart 2 shows the composition of this turnover for 2012 per driver. From 2000 to the present, the global dredging turnover has more than doubled. Not all regional markets, however, have developed at the same pace, as is illustrated in Chart 3.

The volume of dredging turnover closed to international tenders is still substantial, with China as number

“The size and capacity of modern dredging vessels has grown resulting in economies of scale”

Chart 3: Geographic spread of turnover



Source: IADC

1 and the USA as number 2. In China, a few projects are open for international tenders. The USA market is effectively closed to foreign competition by the Jones Act, which makes it impossible for non-USA owned and controlled contractors to undertake dredging activities. In India, state-owned **Dredging Company of India (DCI)** has a preferred position in public tendering, although upon occasion foreign companies have been awarded large dredging contracts. Globally, the market share of these closed markets was 46 percent in 2012. This is an increase of 3 percent compared with 2011. As mentioned above, this increase resulted from a change in exchange rates between the renminbi and the euro.

When considering the entire dredging market, the market share of IADC members (private contractors) was 49 percent in 2012. This is a decrease of 2 percent compared with 2011. When considering only open markets with free access, IADC members represented a total of 90 percent market share in 2012, a clear increase since 2000 (2000 = 75 percent). ■

Source:

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إن الحاجة لبناء السفن في كافة أنحاء العالم في تغيّر مستمر وكذلك الأمر بالنسبة إلى التكنولوجيات التي تقدّمها صناعة الكِراءَة. وتعتبر الكِراءَة من الصناعات الأساسية والضرورية من أجل ضمان توسيع الموانئ وصيانتها حتى تتمكن السفن من دخول عدد كاف من الموانئ. ونتيجة لاستمرار البحث عن مصادر وقود بديلة يستمر الوقود الأحفوري بالهيمنة على الساحة العالمية للطاقة. وبما أن هذه الموارد موجودة في أعماق البحار في مناطق نائية من العالم، تعتبر تقنيات الكِراءَة من الأساليب الهامة لسبر هذه المياه بحثاً عن النفط والغاز. أما التحدّيات التي تتطلّب حلولاً مبتكرة من الكِراءَة فكثيرة نذكر منها الطلب المتزايد على الطاقة النظيفة وزيادة هجرة الناس داخل البلدان وعالمياً وتنامي المحاور الحضرية فضلاً عن التهديدات الناجمة عن ارتفاع مستوى سطح البحر. وبالرغم من استمرار الإنكماش في الاقتصاد العالمي الذي بدأ في العام ٢٠٠٨ واستمر حتى العام ٢٠١٢ فإن المحركات التي تؤثر في صناعة الكِراءَة تستمر في حثّ الطلب. ويبقى نمو التجارة المنقولة عبر المياه وتوسّعات التحضّر والبنية التحتية والطاقة البحرية والبديلة والمخاوف المرتبطة بتغيّر المناخ متصدّرة الاقتصاد العالمي. وقد أدّت هذه العوامل إلى استثمارات هائلة في الابتكارات والمقاربات لإيجاد حلول من صناعة الكِراءَة مما أدى إلى نمو مالي بنسبة ٧ في المئة من السوق نتيجة للتغيّرات في أسعار الصرف بين الرمنيني واليورو.