

HYDRO INTERNATIONAL INTERVIEWS SHIN TANI, CHAIR OF GEBCO GUIDING COMMITTEE

Ocean Floor to be Mapped by 2030



The first Forum for Future of the Ocean Floor Mapping was held in Monaco from 15 to 17 June 2016. Some 200 delegates gathered, under the flag of General Bathymetric Chart of the Oceans (GEBCO), to discuss the future of the mapping of the ocean floor, aiming to come up with a roadmap towards 100% coverage of a mapped ocean floor.

GEBCO was established 113 years ago,

also in Monaco. *Hydro International* talked with the chair of GEBCO Guiding Committee, former chief hydrographer of Japan, Shin Tani. Shin Tani is adamant about the need of sharing data to reach the goal of a completely mapped ocean floor. He is less sure about a time-frame in which the international ocean community will achieve that full coverage.

By Durk Haarsma, publishing director, Hydro International

Could you please explain to me why it is such an urgent matter to have this Forum right now?

‘There are many, many reasons. Let me name a few. First of all, GEBCO has focused on the use by scientists. Maybe a small group outside of the scientific community looked at GEBCO products as well; some keen about protecting the ocean, others interested in biodiversity or fisheries and recently ocean energy and tsunami modelling, but it is time now to broaden our scope. GEBCO historically worked in areas deeper than 200 metres. This was also even included in our guidelines, but that's almost obsolete. We are looking at shallower water now as well. We no longer have a hard boundary. Inclusion of shallower-than-200m bathymetry was started around 1990, when gridding of digitised contour lines started, in order to restrict the funny reaction of gridding algorithm. At around the same time the demand for new and bigger datasets arose, a demand that has grown ever since, in part also because of the focus on Marine Protected Areas (MPAs), wind turbines and the other areas of interest. There is a clear demand for higher resolution data on shallower water. We realise and recognise that we need to answer to that demand and therefore also have to consult on the exact demands. Another factor that made clear that the boundary of 200 m depth is not a sustainable one, are the devastating tsunamis that have occurred over the last decades. Scientists working on the prediction of tsunami's propagation and inundation are also looking at us for answers on how the seafloor is shaped. In general, one could say that there is a societal need, but also scientific curiosity and technological developments and GEBCO wants to respond to that. A Forum such as this is the perfect way to discuss with stakeholders.’

Will this result in a bigger role and more visibility for GEBCO?

‘Oh, yes. By its nature, activities for GEBCO are of course voluntary and have been carried out in scientific environments. The scientific researchers donate their time, in the office or maybe out of the office to contribute to GEBCO. In addition, all data that we collect are basically data voluntarily donated from scientific vessels. That also means that the data we obtain were limited to scientifically interesting areas, except for a few exceptions, for instance in Japan, where data was donated on the entire Exclusive Economic Zone around the island to GEBCO. A very detailed bathymetric survey was conducted for the Extended Continental Shelf programme. North American and European stakeholders have arranged the so called Galway Statement, which will end up in a lot of new data from the North Atlantic. Similar project can be arranged between South Africa and Argentina and Chile and New Zealand, where bathymetric data are still really sparse. I would like to improve the situation. So there are already major developments that could make more data available for GEBCO to incorporate in its products and therefore its role will become more important.’

The year 2030 is a year that is buzzing around at the Forum as the turning point. Where will we stand 15 years from now?

'Maybe I'm just dreaming, but I think that at a certain point a dramatic change will take place. One day, when people realise the importance of detailed bathymetry and start to hand over data, people may compete to donate data and the amount of data becoming available will dramatically increase. Many factors play a role in this: for example, internet and the smartphone, which will help us in a positive way. When the turning point is reached, the situation will change drastically. I expect this to happen to us.'

What about crowdsourced bathymetry as a major source for new data?

'Crowdsourced bathymetry will become the major source of data for GEBCO, from any kind of ship sailing the world's oceans. I would like to remind you that the very first GEBCO relied largely on cable laying companies' sounding data. They were truly the crowdsourced bathymetry.'

And do you dare to give an estimate of how much of the ocean floor will be mapped by 2030, in percentage terms?

'Having a 100 percent coverage of bathymetry of the ocean is not that easy and simple. It may not be impossible, but it is certainly very difficult. In 10 years? I don't think so. Can I replace 10 by 15 years or 20 years? Still hesitating...but 50 years, that maybe a yes. But it depends on the size of the grid, in question, of course. For example, bathymetry under ice cover needs dramatic development of surveying technology. Otherwise 100 percent coverage will not be very easy.'

There are more than 12,000 hydrographers and oceanographers all over the globe reading Hydro International. What would you like to tell them?

'Share data! Keeping data to yourself is, in my view, a crime. It should be shared. Once everybody shares, 15%, the percentage of the ocean floor that has now been mapped, will easily become 40%. I remember that I talked with a Russian guy who told me that a city called Obnisk, an academic city, but also a city where nuclear facilities were located, was not mapped correctly for intelligence reasons. Once Google Maps became available, the correct details of this city became known to the world. What I am saying is that what governments try to keep a secret, will no longer be secrets in the future. And this goes for ocean depths as well.'

There is no use in keeping data classified, because there is no way you can keep it secret. Do you agree?

Indeed, and I would like to extend this especially to the Hydrographic Offices. If you do not serve as a source of bathymetric information for more than just navigational charts, somebody else will do it for you. If the Hydrographic Offices stick to nothing else than publishing nautical charts, that would be a disaster for the Hydrographic Offices and for the ocean community. There are so many people who require shallow-water bathymetry, again for purposes of monitoring MPAs or predicting tsunamis. The Hydrographic Offices have to serve them as well.

Do you have one last message to the industry in our field?

I would like to invite them all to become part of GEBCO. They are stakeholders and we would like to include them, not just in this Forum but also in the future. All stakeholders in bathymetric data should join our discussions. In addition, I would like to extend my message of sharing data. Data should not be kept to for just a few while it could be useful for the needs and safety of the public and in the end the fate of the ocean, the ecosystem, the earth.

Shin Tani has been chairman of the GEBCO Guiding Committee since October 2013. Before that he had been active within GEBCO for 24 years. Shin Tani was Chief Hydrographer of Japan and Vice Admiral with the Japan Coast Guard. He holds an MSc in Geophysics from the Post Graduate School of Kyoto University. Shin Tani is a member of the IHO-IAG ABLOS (Advisory Board on the Law of the Sea) as well as a member of the UJNR Sea Bottom Surveys Panel. He has been Cabinet Counsellor for the Secretariat of the Japanese Government in charge of ocean policy, renewable energy, ocean survey and monitoring, data management, marine cadastral and UNCLOS Extended Continental Shelf.

Hydro International is collaborating to keep you fully updated on the outcomes of the Forum for Future Ocean Floor Mapping. Check our magazine regularly to stay in the know on all the efforts being undertaken by GEBCO, together with the international ocean community, to map the ocean floor up to the full 100%.