Mr. Vandemeulebroecke, which are – in the global perspective – the major problems of humanitarian logistics and infrastructure?

Bruno Vandemeulebroecke: It is very expensive to run large logistics operations and it is partly more expensive than it should be because of a lack of human resources. It is hard to find trained and qualified staff to perform the logistics duties in the most efficient way. It is also hard because there is no single logistician's profile in the world. You have different profiles which are all summed up under the same name, but actually they have totally different approaches. You can have a logistician who is very good at setting up an operation from zero. You can have logisticians who, for instance, are very good at supporting the construction of an infrastructure. You have logisticians who are very good at supply chains in general. Then you have people who are very good at the distribution of different items. These are all different and complementary skill sets and it is very hard to find somebody who has everything. Of course, more and more it is not so much about doing it yourself but managing people. So, on top of all you need to have people with a lot of management skills. There is a lack of training possibilities in humanitarian logistics—let me put it that way. A lot of research, which is very interesting and valid, is covering the topic. However, the real marriage between the operational understanding and the academic foundation is often still missing. If you ask me, there are few training possibilities which are already covering both.

So there is a problem of competence. Which other pressing problems do we face in humanitarian logistics and infrastructure?

Bruno Vandemeulebroecke: There is a problem of protection in the sense of international humanitarian law. The risk that people have to take to get into some areas is sometimes bordering on the unacceptable. I have not mentioned the usual problem yet: the lack of money. We all know that. This is one of the biggest problems we have at the moment. Strategic foresight is also crucial, especially when we think of infrastructure. This has a lot to do with preparedness. You can mitigate a large part of the consequences of extreme natural events. You can mitigate the impact of the disaster on the population in disaster-prone regions by setting up infrastructure in advance which is resistant to the disaster that could take place and which could contribute to the alleviation of the suffering which is caused by the disaster. You cannot stop floods from taking place, you cannot stop earthquakes from taking place or volcanoes from erupting. But we can put things in place in advance. We can preposition tools and items and even infrastructure and pre-establish communication and cooperation structures. Very often this prepositioning and preparing increases the speed and the efficiency of the response. But this strategic foresight and the consequently needed risk funding is often missing.

What is the most important task for the German Federal Government to improve the general conditions of humanitarian logistics and infrastructure in the upcoming years?

Bruno Vandemeulebroecke: Concerning strategic foresight, there is need for a common understanding on the need for political will to invest in disaster-prone regions without being sure that there is going to be a return of investment. The disaster can take place in six months but it can also take place in ten years. Often we have too much of a reactive approach and financing and not a lot of pro-active financing. The German Government and actually many governments in the world—many of the major donors in the world, and Germany is one of them—are endorsing this more and more, but there is still a long way to go. A quote from a large UN organisation goes: "One Euro invested prior to the crisis is seven Euro saved after the crisis." Nobody can calculate it this way. It is

a very questionable quote, but it points in the right direction. You can see in several cases that it does help to have prior-crisis infrastructure. But it's a risk to take. Who wants to invest sometimes millions of Euros hoping they are not going to be needed? It is, in fact, exactly the same we are all doing when we pay our vehicle insurance or fire insurance or house insurance. We hope we will never need it.

Is there a special area of logistics or infrastructure in which governments or also the international community of states should invest?

Bruno Vandemeulebroecke: Improving communication tools is always going to help because it connects people. It supports civil society organizations and it is a part of the civil society in general. It has been shown in Haiti and in other crises as well that communication tools—whether it is text messages, Twitter or Whatsapp—facilitate a lot of the response operations. People can reach out for help, find relatives back and get peace of mind knowing the relatives are OK. So, that is definitely a good investment. A good investment would be in rigid structures to prepare areas for an operation, so you just have to push a button and everything works out. Like an operational base that can serve as hub in the operations, so you just have to put up the storage capacity, or shelter or what is required in that case. These are sometimes considerable investments because when the equipment is there, it also needs to be maintained, and these investments just need to stand there often empty and unused for a long time or at least for a longer time. These are things which—in advance to a humanitarian response—are very good to invest in. In the mitigation of crises you always have a lot of infrastructure work you can do as a preventive action. Such infrastructural work is off course done in coordination with the local or national authorities and allows these to be better prepared to respond to possible disasters themselves.

Which best possible state of humanitarian logistics and infrastructure do you regard as realistic in ten or twenty years from now?

Bruno Vandemeulebroecke: I think in the coming ten to twenty years we are going to scale down on the size of the big humanitarian logistics machine we have: the numbers of trucks and helicopters and tents and replace it by more cooperation with the private sector. So we will make better use of what is already in place. However, this is restricted on the humanitarian principles of neutrality and independence. The global market and interlinkages between companies off course qlso play a role in which companies we could potentially work with. Can a humanitarian organisation work in a crises with a company who is owned or subcontracts to in the worst case an arms manufacturer? Furthermore, we will cooperate better with National Disaster Management Offices, national governments and national disaster management organizations. We are going to use new technologies, of course—as we have seen over the last decades. Just-in-time deliveries are going to increase world-wide. We see now that drones are delivering critical medication as needed. This is an interesting development. Cash-based transfers will keep growing as a delivery tool for some time longer and this will play a role in the future approached and financing of logistics. There is no question about that. Gathering and using data is going to play more and more of a role in logistics. I also imagine that we are going to have a logistics *Uber* (the taxi service) in the sense of "I need this and that and everybody chips in a little bit." It is like a crowd-funded and crowd-driven response by the private sector and individuals by putting not only financial resources available to the relief operations, but also the available assets like manpower, vehicles, warehouses, …. Because otherwise we are not going to be able to pay for it. Not all the money is going to be able to come from the German Federal Government, American Government, British Government, or European Union.

The first responders are always local civil society organizations and authorities. I think the challenge will be how we are going to get the people who are already there, on the ground, close to the people in need, and are motivated and willing to help their neighbours on board and keep them on board on this train that is speeding through changes and has more and more requirements and new techniques. From a logistics perspective as well, we will have to tap into these massive resources.

We have moved from the 1970s logistician who was lying under his car, fixing his car and changing the oil all by himself to the nowadays logistician, who is a manager that has to take all the coordination standards into consideration. I hope that in the future we are going to have a logistician who is going to be, on top of that, also a mobilizer of individuals in the civil society.

In your opinion: Which major mistake regarding humanitarian logistics do NGOs (German as well as international as well as local ones) make still too often?

Bruno Vandemeulebroecke: I think very often the mistake is that the pivotal potential of logistics is underestimated. Logistics is often put in a corner and is not included in the programmatic approach of what is possible and how you can do it more efficiently. Another problem is underinvestment in everything that is related to logistics. There is not enough training, resources, and attention for humanitarian logistics. It is an underestimated core actor in many organizations. Logistics is very broad. You can focus on transport management alone but transport management is not going to help if you do not have distribution management or warehouse management. Procurement management is not going to help if you do not have a supply chain which is delivering goods. The complex structure of logistics is a challenge for which you need well trained logisticians.

Regarding humanitarian logistics and infrastructure, which problems do science, the private sector, and NGOs need to address?

Bruno Vandemeulebroecke: The constant challenge of science is its time lag. Proper science takes time and this world is evolving so fast that by the time a study is finished we have very likely moved on to something else already. This problem is inherent to science and to the very fast evolving world which is humanitarian logistics. I felt that there has been an increase of studies on humanitarian logistics for some time. Now the number of studies is significantly reducing again. Nowadays there is not much attention for the topics and new aspects of humanitarian logistics. But I think that one of the biggest challenges for the three actors – science, the private industry and the humanitarian scene – definitely is how we can have a better ecological footprint and how we are going to do reverse logistics. Reverse logistics means to make sure that you are going to clean up after humanitarian operations. When you distribute a lot of stuff or just run a “normal” operation, what are you going to do with all the waste? This is a question we need to answer. The old adagio“Don’t give a man a fish, but teach him how to fish” is supplemented by “teaching a man to fish enough to live while not oversishing so there is going to be enough fish tomorrow” – this is sustainable fishing. And now we are heading towards another level of sustainability, how to make sure that while fishing we are not polluting the water in which the fish are living.

What do science, NGOs and the private industry need to do to reach this goal?

Bruno Vandemeulebroecke: It is a joint responsibility. Science can be the innovative part. Economy and the private sector are dealing with the same issues, for example when it comes to recycling. So the interaction between science, NGOs and the private industry needs to grow in the future. There is

much knowledge in the private sector that we are not using in logistics at the moment. Science is partly financed by the private economy to work on innovations and inventions *for* the private sector. Of course, it is underfunded for what is happening in the humanitarian sector. But I am optimistic that there will be private entrepreneurs who are willing to support scientific research in favour of humanitarian logistics. I think in humanitarian organizations we have to be more critical towards how we are going to work together with the private economy—critical towards ourselves and critical towards the private economy. That means on the one hand that we have to be careful because businesses are entangled more and more, funds and hedge funds are all linked. Therefore, it is sometimes hard to know who you are speaking with and what you are dealing with. On the other hand we as the humanitarian sector admit that there are aspects of the provision of services or goods that are just better, or cheaper, or more efficiently handled by the private economy. We do not have to do it all in our network. It should be more critically assessed where sub-contracting, so to speak, is possible.

Where are the boundaries of the cooperation between commercial logistics companies and humanitarian logistics (e.g. regarding the transferability of the principles of commercial logistics to humanitarian logistics)?

Bruno Vandemeulebroecke: Very practically speaking, I can imagine that the principles of commercial logistics and humanitarian aid could collide if you brought a multi-national logistics player into a country to provide services. It could be a threat to the local market and the small entrepreneurs on the market, and wipe them out of the market, which is something that we already accidentally do because we like to work with big companies. Instead of hiring five small companies we hire one big company as it is a bigger volume, maybe at better prices and has less administrative paperwork.
It could also be perceived as—and this is one of the strings of thought of some political and intellectual movements in Europe and outside of Europe—a form of economic exploitation: using the opportunity created by the misery of other people. It's often referred to as "neo-colonialism" but I don't want to use that word. That would be a limitation. A lot has to do, of course, with perception and communication. However, there are serious problems such as white-washing, kind of cleaning your image through a well-intended project, but limit the good intention to one project. This makes it harder to work together. But, we have to be honest, it is very often more efficient to cooperate with the private sector.

Keyword "new (digital) technologies": Which new technology has the potential to have a lasting effect on humanitarian logistics and infrastructure?

Bruno Vandemeulebroecke: What is definitely going to have an impact is digital and mobile data gathering also within logistics. Traceability is going to improve. The technology is already there, only the prices are still a little too high for NGO's do do a large scale rollout. Through this traceability we can know where a product comes from, where it is at a certain time in the transport phases, we will have a better prognosis on how long it is going to take to get to the final destination and we will see where the items have arrived in the end. Afterwards, with this data, one can assess whether it was the correct item and the correct person who received it. So we have much more analysis possibilities. But of course, there is a risk that we spend too much time on analysis and too little time on actually providing support. Basically, logistics is still about bringing goods from A to B, where B is where the goods are most needed in the most efficient, correct and fastest way. And that has been the same for many hundreds of years.

Which opportunity do new technologies in general provide for humanitarian logistics and infrastructure?

Bruno Vandemeulebroecke: Technology helps us in being transparent whether we are efficient or not. I think this is a very important aspect – be it transparency towards donors, transparency within an organization or transparency toward s the people we aim to assist. A lot of money goes into logistics. 60 to 80 percent of all the money invested in humanitarian relief passes through the hands of logistics sooner or later, whether it is in procurement, in distribution or in handling or support. So technology-based transparency is especially going to be very useful and necessary in the response to protracted crises, where you need a massive amount of resources and funds to keep on going. Transparency is crucial to learn and to get the most out of every Dollar and Euro.

What is the biggest danger linked to the use of digital technology in humanitarian logistics and infrastructure poses?

Bruno Vandemeulebroecke: Reliability is always the biggest danger. Humanitarian logistics mostly has to operate within an environment where the basic preconditions of functioning technologies are not there. Infrastructure is broken, there is no electricity, no water and often no legal framework which can be kept up. If you strongly rely on “non-crisis technology” it can get very hard to work in this crisis-affected environment. You can prepare anything you want, but you are going to see how it works once you are facing the crisis. No two crises in the world are the same.

Which myth of humanitarian logistics and infrastructure needs to be done away with?

Bruno Vandemeulebroecke: If somebody thinks logistics is a male-dominated field: It is not. There are a lot of very professional female logisticians out there. Furthermore, it is no longer true that a logistician is a MacGyver with a Swiss army knife fixing things. A logistician is a manager who plans complex activities while adhering to numerous rules and regulations and who organizes a team and needs to make sure that the team is going to do the job the way it should be done. About anyone can become a logistician, but it is a myth that one can become a logistician without training.