

**SUBJECT: Singapore and the Netherlands: Innovators
driven by Scarcity**

SPEAKER: Henk Ovink

MODERATOR: Chua Soon Guan

DATE: 16 March 2016

DURATION: Hour(s) Minute(s) Second(s)

Note:

Readers of this document should bear in mind that the transcript is a verbatim recording of the spoken word and reflects the informal, conversational style that may be inherent in the process. The Centre for Liveable Cities (CLC) is not responsible for the factual accuracy of the text nor the views expressed therein; these are for the reader to judge.

[] are used for insertions, after the interview. The information is not necessarily contained in the original tape.

All rights in the recording and transcript, including the right to copy, publish, broadcast and perform, are reserved to the CLC. Permission is required should you wish to use the transcript for any purpose.

Emcee 00:00:02	<p>Your excellency, distinguished guests and fellow colleagues, welcome to today's CLC lecture series. My name is Jasmine and I'm from the Centre for Liveable Cities. The centre was jointly developed by the Ministry of National Development and the Ministry of the Environment and Water Resources in 2008 to distil, create and share knowledge on liveable and sustainable cities. The CLC Lecture Series is one of the platforms through which urban thought leaders share best practices and exchange ideas and experiences. In today's session, we are honoured to have with us, Mr Henk Ovink, this special envoy for water affairs in the kingdom of the Netherlands. He will share how both Singapore and the Netherlands have driven innovation through scarcity and how small urban cities can adapt drivers of innovation to deal with complex public issues. The presentation will be followed by a moderated panel discussion and a Q and A session with the audience, which will be moderated by Mr Chua Soon Guan, deputy chief executive, policy and development at the PUB, the national water agency. With this, let us begin the session by inviting Mr. Ovink on stage. Mr. Ovink please.</p>
Henk Ovink (HO) 00:01:42	<p>I just changed my presentation. This is what happens. So I'm going to talk a little bit about the comparison between the Netherlands and Singapore but only in the end. First, perhaps more important things, well, the power of place is at the heart of both Singapore and the Netherlands. So the images I share here with you of Singapore and the Netherlands of course strike differences, at the same time, similarities. But, first things first, you know this right, you know who she is. Sometimes we call her a little grumpy. She looks grumpy. I would look grumpy if this were my main flood protection system with a country like Germany.</p> <p>This is scary. Anyone know where this is? Nah. Good. I don't know. This is Miami. And the guy who is in the sewage, because he is actually in the sewage is finding the leak. But this is not a leak. This is the ocean bubbling up and this is happening almost every day now in Miami. The water rises</p>

	<p>through the sewage system into the street.</p> <p>Water is serious and water scarcity, pollution and too much water is at the heart of many conflicts around the world. One of those conflicts being in Syria. Research showed that water, bad water management, and the scarcity and the drought increased the conflict. If you turn it around, it means that water management in the wrong hands can become a weapon of mass destruction. And then we are in a different world.</p> <p>Next question. Where are we? Too complicated I guess. This is the Colorado River. Anyone of you know the Grand Canyon by image? It's big, uh, Grand Canyon? You know Grand Canyon? Big? This river created the Grand Canyon. This river. Nothing's left of it. This has nothing to do with climate change although climate change increases the bad situation. 65 years ago was the last time the Grand Canyon touched the Gulf of Mexico. Now it's only drops that cross the border between the U.S. and Mexico. So again, bad management, bad pricing. Bad governance. The canals in Amsterdam. You know we show different pictures of Amsterdam. But only 10 years ago a swan built a nest on the garbage in our canals. It was the image that started the campaign to clean them and now our Queen swims in the canal so they must be safe and sound and good. But it took a while. It takes these images to stress the importance, to stress these challenges.</p> <p>50% of the population in Africa does not have access to clean drinking water. 50%. And this is the quality of the water in Kenya. Not a good thing. [sic: Kirabash] from a Dutch perspective not so far away from Singapore. It is still a pretty long travel. This is an older picture from a Dutch photographer who is chasing water around the world. A good friend. I'm not sure but I think the woman is not living in her house anymore because of sea level rise and climate change.</p>
00:06:13	We need to perceive these issues of water and climate change and

urbanisation through the lens of collaboration.

Ever talk to an astronaut? Or listen to one? We have a famous Dutch one who travels the Netherlands and says the planet is blue. It is a lie. The planet is not blue. It is only paint. It is a little tiny little surface. If you take all the water of the world, all the water of the world, this is everything you have. There is no more water. Nothing more. That's all the water. But if you want to use water, for the industry, agriculture, energy, mankind to drink, water is life. This is the only drop, this is a small amount, this is the only drop you have. 170 miles, 250 kilometres in diameter is all the water we can use. Water is a scarce good. People will feel the impact of climate change most strongly and profoundly through water. 90% of disasters are already water related. It is impacting in the next decade two billion people because of too much water and almost another two billion because of lack of water. Impacting 40% of the world's population and 15% of our regional GDPs. This summer, last summer, we searched out 50% of the largest aquifers. So this is where we store our water naturally. These ground levels have water storage capacities and they are big as you see on the map. 50% of them are already passed their tipping point and that sounds abstract. You know, past the tipping point - let's have dinner. Past their tipping points let's have drinks. Past their tipping points means that natural recovery is impossible. That is past their tipping point. So we exploit the water so a natural recovery is impossible. The only way, the most positive scenario is stabilization, which is almost impossible in such a case. Now the impact of water on our cities, on our environment, on our people, is big so World Bank calculated the risks of water in 2050 and those risks add up to billions. It's not so sharp. I will just name them. Miami is top of the list. \$278,000,000,000 at risk in 2050. Guangzhou is second, then New York, then New Orleans. The Netherlands is on that list too, number nine with \$96,000,000,000 at risk in 2050. There is a lot of dollars in that top 10, trillions at risk, assets. But what strikes me of this picture is Africa. Africa does not light up. So if you look through the lens

	<p>of money, of finance, of assets at risk, then the poor will lose out because in 2050, the worth that is at risk will not be enough. So we have to rethink how we look at it. World Economic Forum put water crisis number one on the list. For the next decade as the most impactful crisis. But look at number two. Mankind's inability to mitigate and adapt. And number three, extreme weather events, number four, food crisis. So this top four, the most important crisis of the world are all related to water. This is the world when you look at water. Mark my words, red is not a good colour.</p>
00:10:18	<p>It is also an urban world. A world where people live in vulnerable places. In deltas, next to Rivers, on coastal parts. And those places also have on an international level the opportunity to turn into a conflict because water doesn't really care about manmade boundaries. A river just crosses. We are dependent, not just because of the boundaries we make but because of the water that crosses.</p> <p>Ethiopia builds a dam in the Nile. What does Egypt do? It is impacting their livelihood, their food, their agricultural business. Do they change or go to war? 65 rivers cross the border between Bangladesh and India. Each individual one of them, reason for conflict. Laos, Cambodia and China are building dams by the dozens impacting Vietnam for instance. What is its cost? Next to economic default, and environmental disasters or can it become opportunities for collaboration?</p> <p>The G-7, a year ago, concluded that climate change is a matter of National Security. You all know this. We all knew this. But the fact that they concluded on it in an official way is important because it means that we can act. Part of the document the G7 produced under the leadership of Germany was the Heat Map created by The Opportunity for Water Crisis. This is the one. If you add everything up, and this is only part of it and you look to the future, it's not a bright future. That's why the World Economic Forum risk report is so instrumental. On the left side you see the urgency. Crisis is built up, environmental, manmade, social, cultural,</p>

	<p>geopolitical. We will have more of them and it's going to be worse. And increase in impact and an increase in likelihood. So it's like the nightmare. When I wake up at night sweating I think about the left side of this slide. But when I wake up at night smiling I think about the right side of the slide. Because the World Economic Forum risk report also shows there is a clear interdependence between those risks. An interdependency between those risks in their origin? Oh this is nice. This is where we mitigate. This is where our mitigation strategies come in. To make them more comprehensive we can actually strike a balance. But also an interdependency on their impact and mostly on a regional urban scale and this is where planners and designers come in. This is where we have the issue of better governance. So on the regional scale if we work together and work on a comprehensive approach, we can deal with this complexity.</p>
00:13:23	<p>Mankind might be the only species that not only messes up, but is also capable of dealing with its own mess because of that interdependency. But for that, we have to lift ourselves up. We have to change the perspective. Turn it around. Four things are important if you want to change that perspective.</p> <p>One, you need a long-term comprehensive approach. You need to deal with the long term in a comprehensive way. Understand it, do research and get a real understanding of interdependencies, vulnerabilities and opportunities. That long-term approach needs to be connected to projects, interventions on the short term because long-term approaches become books on a shelf, empty, most of the time useless. If they are not connected to investments, to real projects, to different facts on the ground. So long-term approaches need to be connected to short-term interventions. There is a necessary connection back. A short term project is nothing but an incident if it is not connected to a strategy, it's not connected to a long-term approach. And incidents don't add up to resilience, incidents don't make a difference. Long-term needs to be connected to short-term over</p>

	<p>and over again, with feedback loops and evaluation and monitoring.</p> <p>Second, you need the funding for it. And funding only comes if you are transparent and accountable. So we need better benefit-cost analysis. Benefit-cost analysis that can better capture long-term resiliency questions, that can deal with comprehensiveness and right now we don't have those benefit cost analysis. They can only deal with short-term infrastructure, simple approaches, the more complex they become and social they are, the more environmental assets they are dealing with, the more PNs there are in those benefit-costs analysis models. And monitoring and evaluation, well even the Dutch are not so good at monitoring and evaluation and across the world we fail in learning and turning that feedback loop in.</p>
00:15:46	<p>Now if we reach out to the private sector, and we don't have a transparent business case to provide, why would they invest? I mean, we put taxpayers' dollars all over the world in projects that are not transparent. Private sector is a little tougher. But democracy should be able to act the same way as a stakeholder or shareholder. So private and public sector should have that same transparency and the same accountability.</p> <p>So then we have long-term and short term, accountability and transparency for financing. Then the process to get to these innovative projects and interventions, it has to be inclusive. It has to be collaborative. Including all, not only institutions but also activists and NGOs. Not only public but also private. Not only collectives but also individuals. If we get an approach that is really collaborative, and really inclusive, we will make a difference. And if you do that you build capacity.</p> <p>Number four. Building capacity among institutions, amongst individuals, amongst NGOs, researchers and businesses and investors builds opportunity to enhance the way we deal with these uncertainties.</p> <p>When Hurricane Sandy hit New York, it looked like this and it ended like that. Hurricane Sandy hit the United States where the President runs the</p>

	<p>office that really knows what climate change is. He says you can ignore the facts but you can't deny them but he has to deal with the Congress. It actually says differently. This is the man in Congress that is responsible for the environmental committee and he says, well, man can't change climate only God can. I was hoping, this is not a talk about religion, but when the Pope came in and actually said Man did change climate and man should change back again, I was hoping that Mr.Inhofe might be catholic so he might listen to the Pope but he was a Protestant. That failed.</p>
00:18:10	<p>Sorry. Actually should not have been a Protestant but ...and I'm not Catholic so I wouldn't know any of this.</p> <p>Another part of climate change is that it is slow. In the U.S., we joke that it is slower than Congress. But I challenge you, what was sea level rise in the last 100 years? How many? What was sea level rise in the last 100 years? Come on. Don't disappoint me. What was sea level rise and last 100 years? Wild guess. 27 m? It's wrong but you can say it just to start the discussion. 2 inches. Who wants more or less? 2 m? No. That would have been fast. Sea level rise was not even an inch. 24 to 26 cm depending on where you were. So that is slow for politics, 26 cm over 100 years that is slow. Politics can't catch up with that. They don't even have to deal with it. When Sandy hit, it also proved the World Economic Forum was right. It showed these interdependencies on the ground. It showed that in red, poor people live in blue, poor places. Blue is where Sandy walked in. This is New York. This is Manhattan. Sandy flooded the whole region. Now I was here in New Jersey, Jersey City, industrial site, the surge was higher than this room. 5 m, going into an industrial site where they store Agent Orange in a chemical facility that also has social housing and low income housing and poor people. And they had to close the playground at night, because the soil lit up. The soil was so contaminated the kids could not play there anymore. So all of a sudden an environmental disaster like a storm became a catastrophe for mankind because of the pollution. The swampy area there was devastated, not only</p>

by too much water but by the pollution it brought. Power Supply 75% in the floodplain, 80% fuel storage in the same flood plain. So Sandy showed the uncertainties in the region and questioned the physical as well as social resiliency. It also showed the vulnerabilities for electrical infrastructure. Taking out one power plant in Manhattan turning Manhattan into a NOPO and a SOPO, a north of power and a south of power, blackening out half of it. And that in the region with bad governance, different governance across the state, wrong positions or worse positions of mayors, no mayors at all on Long Island. So accountability not in the position to deal with the aftermath of Sandy. Implementation agency that was hijacked by politics, a complex place when it comes to governance. In that condition the Federal government said we are going to allocate 60 billion dollars for the rebuilding and they put together a task force under the leadership of Sean Donovan, a Presidential taskforce to lead the effort.

With all these big numbers, hundreds of thousands of houses lost, 65 billion are damaged in the region and a task force leading it. And when you walk around the region this is what you find on the wall. And then you realize, with the big numbers, and all that big effort, you tend to forget the small human needs because when a disaster hits, it is a personal disaster. This man lost his wife, his house and his business. For him there is no way forward. There is only a way back, going back to what he has lost. For him a task force and 60 billion, do not make a difference. If we want to have an impact in the world, to change, them professionals should not only work together, governments, researchers, businesses, the professionals should work together with the people. They can bring in their questions of need to the table, to start to collaborate, to really build resiliency opportunities that make a difference on a personal level. If we can't close the gap between professionals and people, we will fail. We will fail in our strategies to build resiliency, so some say never waste a good crisis. One, a crisis is never good. And yes, we should not waste it but use it to bridge the gap.

00:23:20	<p>Luckily, Sean Donovan was chair of the task force. An intelligent man. A commissioner of New York, architect by training, married a Jersey girl. He knows the region. He's born and raised in New York and Donovan went to the Netherlands. Now, why did he go to the Netherlands? He went to me, where I was Director-General for Water and Spatial Planning, and he went to Netherlands to learn about water.</p> <p>Now this is the Netherlands in the 1600s. Anyone of you knows the Netherlands now? Been there? Saw it on an image? Map? If we had done a business case, a cost-benefit analysis in the 1600s, we would have moved to Germany or France, depending on our background. But we didn't. We built a great country like you built a great country. We built polders, over three and a half thousand of them. Not because an engineering job, but because they are a collective effort. A collaboration, a collaboration on a regional scale. We discovered that collaborating is the only way to build safety. Not to build a wall around my house, but on a community level, collaborate to build safety for that community. Already in 1100s we had our first governance structure. Before we were a country. Before we were a Kingdom. And that governance structure is now assessed by the OECD with an A+ and becomes a standard and an example for the world. We had more disasters in the 1400s but we turned the water into land, creating safety with a system of over 2000 kilometres of dykes, a system that also has infrastructure, infrastructure reaching way back deep down into Europe, creating the opportunity for the water sector to as of this day, play a very important role on our economy. 75% of trade over water in Europe is in Dutch hands. We build our cities around us, around it and created an institutional frame. An institutional frame that was dedicated to water. In the 1100s, a water authority. The establishment of Rijkswaterstaat. It's the federal organisation that deals with water safety. Again, before we were a Kingdom.</p> <p>A ministry of water as of 1800s. Still existing as a Ministry of Infrastructure and Environment. All the way down to 2015 last year, where</p>
----------	--

	<p>they actually now have a special water envoy. It's great to have this background.</p> <p>We created the Zuiderzee works. The [indistinct] Dike, based on the storm in the 1960s. But the plans were already in the making. In '53, we had a devastating storm, killing over 1800 people. It was the start of the Delta works. The Delta works safeguard The Netherlands until now. The problem with those interventions in response to disaster is they tend to be less intelligent. But the process of the Delta Works was reflected. So the last dam was formed by an environmental perspective more than a safety perspective. It became an open structure so the water could be let in to create a healthier environment. Mad-made structures can bring safety but can also be very destructive.</p>
00:27:10	<p>In '95, due to rain and almost flooding, it made us realise that the Netherlands is not only vulnerable from the sea, it is also vulnerable from the rivers. So we developed a programme called Room for the River, creating more room for those rivers, with 39 projects with 2.3 billion working all over The Netherlands. A room for the river based on principles deepening the summer bed, storage in the lakes, relocation of the dikes, strengthening them, having high water channels, lowering of flood plains, depoldering, and removing obstacles, which meant houses and farms. Now this is tough also in the Netherlands to move houses and farms. One example is the Overdiepse Polder. It's a polder next to the river and it needed to be used as calamity storage for water, but there were also farms. Now you know, talking to a farmer saying that he or she or they have to leave as a family is one of the toughest things to do. Talking to a group of farmers is even worse. So the first years were not so good. Not really collaborative. The farmers made a better plan. They said to the government, we want to stay. But the government said, no, we need your polder for water storage. They said, remember 2000 years ago, we all lived in water areas, but we raised our houses, on turfs, higher parcels of land. And that's exactly what those farmers did. They presented the plan, built</p>

	<p>new farms on raised land, and they're still there and they're still part of the water containment area. Almost the same happened to Nijmegen, a city. Nijmegen is another city in the northlands. This was dedicated for urbanisation. But we needed to create a second river, a second river for more capacity. This was the opportunity for urbanisation, urban development and adding value by increasing the capacity of that river. Those projects were built through a different lens. Creating more room for the river was based on 2 principles, safety and quality. And those are actually the principles of life. The principles that are the basis for our lands, the Netherlands. Safety, one. Quality, one. You need them both. Quality for the environment, for life, for mankind. And we built with nature on the coast. We built urban and in our cities, creating water safety measures that are comprehensive but are also integrating more functions. Like a parking garage or public space but by integrating those functions really add value on a different level.</p> <p>Higher and bigger dikes. And a new harbour extension, intertwining of the city and the river in Rotterdam, urbanisation in our lakes, bringing the water back into our cities, connecting it to our recreational network. But does it mean that we are safe? No. Can you fix a water problem? Never. Water is life but is also there for life. So you never stop working on water. This is not something about a quick or slow fix. This is cultural. You have to keep working on water.</p> <p>This is summer. Flooding in Amsterdam. Not because a dam or a dike broke, because a water leakage next to a hospital. But it created kind of a mess. This is actually a wind surfer. I said it's a sport from the '80s. Actually not so true. [indistinct] a whole dike came down and flooded the whole area. So in the Netherlands you always have to be ready, have to be prepared. Because water is always there.</p>
00:31:41	26% of the Netherlands is below sea level but 60% is flood-prone. This is the 60%. In that flood-prone area, most of the people live and most of our

economy is earned. When Hurricane Katrina happened in 2005, we realised perhaps we were not safe on the long run. And we asked the committee to advise us and they came out with an advice. To come up with a long-term approach, a hundred year plan, a Delta Programme. Safety against flooding, fresh water supply, until the end of the century. A multi-layer approach where it was not only about safety, by dams, dikes and levees, but also about comprehensive and integrated planning, building resiliency in our systems and cities, and at the same time, be ready, be aware, be alert and invest in response measures when something goes wrong.

This man, our colleague, [indistinct] was responsible for the development of that plan and the implementation. But it is more. It is about water quality and the governance of water quality and is our maritime sector being a global player? Living in this Dutch Delta is a cultural thing. When Sean Donovan visited me in the Netherlands, he said it's cultural. Can it be cultural in New York? Cultural in New York where the response to disaster is only [sic: repair] where the response to disaster started at 10 billion and now adds up to almost 100 billion a year, where the response to disaster adds up to this. Don't laugh. This is the federal policy based on the national flood insurance programme. You have to raise your house in response to disaster before you get your funding. President Obama wanted something else. He asked for a climate action plan and a hurricane rebuilding strategy. I worked on his task force for 2 years to come up with this strategy but also to come up with something innovative. Because he said I not only want to rebuild this region, I want it to become an example for the US and the rest of the world. Bring me those intervention projects that can help change the thinking and working on resiliency when it comes to those future uncertainties. And I remember this – his long-term approach and innovative projects. The connection between public and private, partnerships and financing, collaboration across the board, being inclusive and building up the capacity to deal with these uncertainties.

00:34:23	<p>Next to that, it is important when you want to collaborate to create a place that is safe, a place that is not about negotiation, it's really about collaboration. You also need to create room in a political and policy process, for a little thinking out of the box, or outside of legal frameworks, of outside of policy barriers. You need to think of the past, as much as of the future, to inform current day decision making and you should use design and innovators and researchers to come up with measures you haven't thought of, that are connecting different issues from the environment, economic, social and cultural part.</p> <p>No super heroes, and the talent of the region, the ones that are affected, the people, should be connected with the talent of the world, the professionals that know everything but actually not. This match of real talent with real talent, small and big, actually adds that value. And collaborate, like we did in 1100. Collaborate in an inclusive way. And inclusiveness means the door should be always open. One is never too late, because otherwise you fail. You lose out and you forget.</p> <p>Rebuild by Design also became a Dutch – US collaboration. And in a competition where we started with a research, to get a better understanding of the region's vulnerabilities, and ended up with coalitions. Ten coalitions with over 500 organizations, thousands of people, in 9 months, developing solutions that were able to change the region. A region at risk, with real community needs. A region at risk, that through a collaboration of federal agencies, local and state governments, public and private partners, design teams, innovators, NGOs, activists, [sic: loners] in that region, had transformative capacities. Ten teams came up with designs across the board, from architecture all the way to a regional scale, connecting the politics of these big guys to real local needs on the ground. Driven by design. Driven by the idea that we can change the world with innovation. MIT developed a plan for the Meadowlands. [sic: OMA] for Hoboken. [indistinct] team planned [indistinct] for the river. Penn designed a project for Hunts Point. The big team together with [sic: Arcadas] for protecting</p>
----------	---

	<p>Manhattan, SCAPE for protecting Staten Island. Every project had a different take. More environmental, more urban, more infrastructure, more small-scale communities, more big-scale economies. We selected 6 winners and allocated 920 million dollars for implementation and as we speak, they are ready to be implemented. Leadership, collaboration and innovation drove ownership underground in those communities by design. But it also informed the government so this detour I talked about went back. Federal government asked for a national competition. And I created the national disaster resiliency competition that just had its 14 winners in January. But also helped create an international challenge. In the horn of Africa, the Sahel, and parts of Southeast Asia. We built, got some awards, but more importantly was replicated in an inspiration for other places. For one, in San Francisco. So rebuild did not make a plan, but changed the culture. Now what does it have to do with Singapore?</p>
00:38:26	<p>Singapore and water have a same and different relationship when you look at the Netherlands. 48 major waterways. We only have 4 rivers. 48 major waterways with their storage capacity. And a policy that's aimed at collecting every drop. You have 4 national taps. Local, NEWater, imported, and desalinated and a water loop that brings back every drop you can catch. You bring back water in your urban core, adding quality. For instance in Bishan Park. But water is more complex than only Singapore as an island can deal with. You're in an international environment and as an island, you have to deal with it. The Indian Ocean, trade agreements, and the Straits they come with, but also the natural resources, natural gas flows and [indistinct] impacting the way Singapore and the region deals with water.</p> <p>Now, what's interesting is that, if you think about the marine part of Singapore, it's only very small. It's only a little stretch. So I make the comparison with The Netherlands. Singapore, hub of the world, is always nice pictures, we do the same. Rotterdam, hub of the world, but we are part of the same network, which is interesting if we analyse straight from</p>

	<p>Rotterdam, look at the bulbs, Houston, Rotterdam, Singapore. They all add up. Important in a network, of connecting our economies, our culture, our environment. Singapore is also small in scale, amazingly. So this is the Netherlands. This is Singapore. Looks weird but if you zoom in, they're almost the same. It's like an island in front of the coast. The temperature is a little different. You have a denser population than we have but actually the [sic : Rundstaadt] is as dense as Singapore. Your GDP is a little higher, a little lower but per capita, it's a little higher. We have landscape that is fragmented by policy but integrated by practice, you have the same. Policy does not integrate but it helps to increase capacity.</p> <p>Do you have room for agriculture? Or are you going to build farms on stilts in the water? We actually made plans for farms on the water. So we can help each other out. We are building this in Rotterdam. Why don't we export it to Singapore? Well, you export your intelligence on solar power, building on the water.</p> <p>Another comparison – land reclamation. You added land to your island. We added lands to our island, lots of it. So on this scale, perhaps not so important. But I was thinking about this, as a business case, this is your plan, your spatial plan. This is your country, with the water. If you fill it up, you just increase the island. This is exactly what you're doing. And I'm not advocating for filling everything up, but rethinking the position of Singapore at its borders and the way you use it as a [indistinct] and then you know, look at this, it's almost a reunion. 2 islands. We made a plan once, for islands. It's actually for our safety. So if we were to export Singapore to The Netherlands, it would actually build more safety.</p>
00:42:09	<p>Now, it's radical but also not. There's some real seriousness in making this comparison. We worked on our North Sea because it's full. Full of initiatives but also full of real projects. And we came up with the spatial plan and marine spatial strategy. On Monday, I had a great workshop talking about your marine spatial strategy and it's a way to connect two</p>

	<p>worlds and make it better. Planning works on land and I make the comparison between Singapore and Jakarta. Because of your planning, the vegetation cover went up. Because of no planning, it went down. I always make the comparison between Netherlands and Belgium, where you almost have the same.</p> <p>Now thinking of these big issues, of agriculture, foods, energy, urbanization, quality of life, why don't we bring Rebuild by Design to Singapore? And innovative process of collaboration, dealing with biggest issues mankind deals with right now. We made a promise to the world in Paris that we will change the world. Well, change can start here in Singapore because we have no time to waste. Because the future is not so much about us but really about them.</p> <p>Thank you.</p>
Emcee 00:43:42	<p>Thank you Mr. Ovink. During the q and a session, we ask that you please state your name and organization before asking questions or making comments. You may raise your hand and our staff will walk to you with the microphone. I will now like to invite Mr. Chua Soon Guan to join Mr. Ovink on stage for the moderator's discussion and Q and A.</p>
Chua Soon Guan (CSG) 00:44:24	<p>I believe all of you have enjoyed the 40 minutes tour of the world from outer space, to New York, to Netherlands and finally landed back to Singapore. But certainly, it gave us a very broad perspective of the issues on water and the challenges, the complexities and the interdependencies. On that note, we open up to the floor for you to ask your questions and comments. The usual thing is that please state your name, where you are from and keep your questions and comments concise so that we have more time for dialogue as well as more time for other people to raise their questions and comments. On that note, anyone wants to raise the first question? Yes please.</p>
Q	<p>My name is Lim Soon Heng. I'm from a company called [indistinct]</p>

00:45:27	<p>Solutions. I think the strategy for Singapore is not in terms of rising sea levels. It's not in terms of defending polders or break waters. Our strategy should be in terms of finding space on floating structures because if you look at the geography of Singapore you can't really find, you can't build a Moses dam, or a [indistinct] barrier. Even our Marina Barrage doesn't protect us. So I have always been advocating that we should live with our sea space. We should find means to create floating structures and increase space for development. This could be in the form of shifting out some of our industrial facilities or in terms of shifting out land-intensive park lands or golf courses. Things like that. By so doing, we have the possibility of increasing our land areas by maybe 25, 30%. Land in inverted commas, meaning floating lands. Because as we create floating lands, we also release the space on the mainland.</p>
CSG	So your question?
Q	I have no question. I'm just making a commentary for others to comment on.
HO 00:47:40	<p>Well, you already do this. 25% is actually impossible because you don't have so much sea. But you can increase capacity also by floating. But I don't believe in silver bullets. Floating is not the solution but can be part of the solution. There's never one way forward. We used to say there's no one road to Rome which is of course true but there are different ways towards the future. But we should take into account the idea of floating farms, and floating energy. You can have floating parks, or floating houses or floating golf courses but they don't all add up to a more resilient structure. They don't make the mainland of Singapore more capable of dealing with rain events, more capable of dealing with increased heat, they don't reduce the use of water, they don't reduce the use of energy. So they're part of a bigger frame, a bigger game, perhaps. But they can be very inspirational.</p>

CSG	Anymore comment? Yes, Miss.
Q 00:49:04	Hello my name is [sic: Anna Ponting] and I'm with CLC and I was working for the New York City government. In the aftermath of Sandy and so the sense of urgency that that created, and also the sense of urgency that I imagined the Netherlands faced in all of its natural disasters, I think, sets a separate context to what Singapore is facing with a less of a natural disaster-based context, I guess, where if you don't have that sense of urgency, how do you think that you should build the consensus for politically and the community to get these kinds of projects to be a priority?
HO 00:49:49	<p>I understand your question perfectly. When I was in San Francisco, in my time when I worked and lived in the USA, there is like a CLC in San Francisco. It is called SPUR. And we had dinner with the Board of Directors and the CEO said to me, Hey Henk, that was easy in New York. You had the Sandy but we don't have a disaster. And I asked back, do you need a disaster to be smart? Which is actually your question. The thing in the Netherlands was in '95, there was not a real disaster. But it made us re-think our vulnerability. And in 2005, the disaster was in the United States. It made us re-think our long-term strategy. So you can be smart without a disaster. So it is not so much about the disaster. It is about awareness, and will. And awareness and will come together when you have a better understanding. And I think, that better understanding is a lot of the time, lacking, [sic: siloed] up, Balkanised or fragmented.</p> <p>So I think organizations like CLC and others, but also a collaboration between the Netherlands and Singapore, can increase its capacity of understanding, raising awareness, showcasing opportunities, and opportunities are always connected to will. So if we can come forward with the right opportunities, action and investments, increases, again, awareness, and the opportunity for decision makers to showcase their will to change. I believe we don't need more disasters. Disasters are terrible.</p>

	<p>But we need more will and the power to make the decision based on the right information but also the right cases. Perhaps it's harder, but also not. If you look at New York now, is it better off now than before Sandy? No. although they are doing great in rebuilding. People still died. People still lost their houses, people still lost their businesses. And Sandy was not a big disaster. Big in money but not in people. When Haiyan hit the Philippines, that was a big disaster. When the typhoons hit India, Bangladesh, Myanmar, those are big disasters. So you're more vulnerable when the small island states of the world just disappear because of sea level rise. New York can deal with it. I only want to use it as an inspiration. But it's not an example. Disasters are tough and we rather prevent their impact with better solutions than we have to deal with the trouble they leave us after they're gone.</p>
<p>Q 00:52:57</p>	<p>Raymond Kuok, from Kuok Group LLP. Can we come to the questions about drinking water? Netherlands as well as Singapore, can we have some projections to how we are going to manage the growth of the population as well as drinking water. Singapore we got the fifth tap. We are looking at ground water besides the other four. Can you share with us how Netherlands solved the water issues in terms of drinking water? And what is the projections of the population and how you manage that?</p>
<p>HO 00:52:31</p>	<p>Europe is in a different position than Asia in terms of demographic. We are shrinking. We gave up on the old world. So join us in Europe. Drinking water enough. But in the times we were still growing fast, we also invested a lot in our drinking water. Now in the Netherlands, it's curious, I always find it very interesting. The water quality of the Netherlands is one of the best in the world and then somebody asked me the question just the other week. Two weeks ago the report came out, the water quality in the Netherlands is amazing. Somebody said why? I said why, it's great. Yes but why is there a high standard of quality in agriculture, for energy, for flushing my toilet, taking a shower, why do we invest so much in those things that might need less investment? So our</p>

	<p>system is so high end that it is actually not efficient which is interesting. But you are very effective. We consider the best quality of water, it's a public good. We pay taxes for it, we manage it, we have the best water quality technology companies and researchers. I'm very proud of them, they work very hard. But we also have a collaboration between industry, be it agricultural or chemical or the [indistinct] and the government to reduce the use, reuse the water and clean it in the right to way. We do have problems with left-over materials, chemical left-over materials, also medication. We use more medication all over the world, and it's hard to get it out of the water, but at the same time we innovate over and over again. So the lesson here is there are different opportunities for capturing water. There are 4 taps, I presented the 4 of them, talking to some Dutch companies, they just invented a 5th and a 6th one. So you have to ask one of them because they are here in the room. They will be able to add to that capacity water brings you. I don't think Singapore is in a position of having real scarcity as they have in Syria. But there is a pressure on capturing enough water. There is also an opportunity for reuse and reduce that increases in that sense. Not so much the quality, which is great but the quantity of the water that's there.</p>
<p>Q 00:56:30</p>	<p>My name is [sic: Helena Hilsmon] from Deltares Singapore. You gave a lot of examples of how Singapore, both Singapore and the Netherlands have developed solutions and tools to deal with the Netherlands more safety against flooding and Singapore perhaps more on water provision. So water security. And I think that has given both of the countries a great position to share that knowledge and those tools with the rest of the world, that might be in dire need of these solutions. Do you have thoughts of how the Netherlands and Singapore can work together? And distributing these tools or solutions and sharing this knowledge with other countries in the region or worldwide.</p>
<p>HO</p>	<p>Yes. Thank you.</p>

00:57:21	
Q	Could you elaborate please?
HO	<p>The capacity here, and that's the interesting part, a lot of the time we talk about really vulnerable places in the world that often always are not have the capacity to rethink and invest research and implement. That's the partnership that countries like Singapore and the Netherlands should form. We formed a coalition between countries that have the same delta but we also have partnerships between the Netherlands and Singapore to not only work together to help solve each other's problems, but also collaborate across the world on different issues. Now there was an opportunity, there is an opportunity that I raised in September on my last visit here, which also was my first. Sorry. That is this Singapore international water week, the World City Summit and the Sustainability Week. Three weeks in one that has the attention of the world. So I said why don't we work together towards that week? And present some of those collaborative solutions, not so much to showcase how good we are, but to reach out a hand to the world and say, we want to be your partner in solving water crises all over the world because we can bring to bear, the knowledge, experience we collectively have and bring that capacity for change, not only in the communities in Singapore and the Netherlands, but to the communities around the world. So I think having that discussion in July, here in Singapore, of not so much showcasing what we did in the past, but presenting opportunities for how to collaborate in the future is ideal. So you're from Deltares, and we desire, and again invite you and your organization to partner with us and Singapore organizations, governments and businesses, to present some best practices, opportunities for future collaboration, not alone in Singapore and the Netherlands but in those places that are in dire need for our solutions.</p>
CSG	<p>Anymore comments and questions? Maybe while you're thinking let me ask Henk a question. I was quite impressed by some of the graphics that</p>

	<p>you show, especially when you compare Singapore and the Netherlands. In a way it shows that both Singapore and the Netherlands somehow, we managed to find a place in the world, in the various things that we do. But based on your understanding of the two countries, and also having involved in so many international projects, what do we need to do to ensure that the seeming success of Singapore and the Netherlands continue. Because we tend to celebrate the success of the past. Certainly that doesn't guarantee that we will be so in the future. So is there any lessons or insights that you can share with us? How do we ensure that we will continue to be, in a way, the key notes that you presented in your slides.</p>
<p>HO 01:01:10</p>	<p>Let's talk about the first part because I can't look into the future. There is no guarantee that collaboration will be a main way of looking at the future. But I'm an optimist. I'm a son of my mother. She passed away 5 years ago but I'm proud that I have her genes. Because she had to believe that man in the world, mankind in the world is there to do good. Although it is not always proven right, I think collaboration is based on that mutual understanding. There is another driver. More formal. We have SDGs and the [indistinct] agreement, which should deliver water security for all. But is that really changing our culture? Most of the times not. So last, it's on us. It's on us professionals, politicians, it's on us students, businesses, researchers. It's on us to make the promise to each other, that we will never let go. And in that sense, water is so inspirational. It never lets go of us. We can't deal without it so every day we have to find new solutions to deal with the issues, opportunities water brings. And as long as we remember, that dealing with them for more prosperity, more safety, happiness and quality, for our children and grandchildren, as long as we remember that it can only happen. If we collaborate, then we will always find each other. But it's a promise we have to make to ourselves, not so much to our neighbours. So that means that there's no guarantee. But I do believe it will happen.</p>

CSG	Yes, Ambassador.
Q 01:03:29	I'd like to go back to Sandy in the United States. I was just wondering after all the implementation work been done, the simple question is how much more resilient will New York, New Jersey be? Will they be fit for a new Sandy or a Sandy plus? And how do you calculate that? I mean what was your target there? And my related question is – I am very much intrigued by what you call a collaborative approach, inclusiveness. But there you have all these people with bright ideas at the community level that you have to take on board. At the same time you have all these kinds of fixed requirements, standards in your head that you know must be fulfilled in order to achieve this resilience. So that this will not happen again, or at least it will happen again, it will not make that much damage. So how did you, what can you tell the people as far as the outcome is concerned, in terms of resilience?
HO 01:04:48	So, New York is in a way on high ground but not everything in New York. So in a normal storm, they're ok. With the Sandy Plus, they're in trouble. But they have plans that started before Sandy, were top top because of Sandy, that are in the making now and are part of the 25 to 30 billion programme the City of New York pushed forward but also part of the Programme New Jersey because they're in the region and the region is vulnerable, and the state of New York are pushing forwards. So one is, as we know in the Netherlands where we said are we fit for the future? No, we have to work for it every year and invest in it every year. So we spend more than a billion euros every year on investments for water safety. New York is spending more like that in that same level. Are they ready now? No. It will take time. Second, how do you combine collaboration with those high standards? In the same way as you deal with the investments. Step by step. You don't solve these over time. But the collaborative process was also really about getting a better understanding amongst all. A better understanding among professionals, of what real local needs were, to inform designs and innovations, but also a better understanding of the

people at risk in the region, of climate change and the impact of climate change really meant. To inform what they had to do, to improve their safety. But also improve their policies. So in that sense, these learning processes, are not only building dams, dikes and levees, or building oyster reefs or natural structures to protect surges coming in, they also build awareness and the capacity among communities to deal with those uncertainties. They also inform policy. One example, when Sandy hit Manhattan, the Lower East Side, there's hospital row. Three hospitals in a row. The Bellevue Hospital which was the most south one of them had flood defence structures that were washed away by the surge. But the surge was tough. The emergency generator was on the roof. Smart thinking. We don't do that in the Netherlands. Minus 4 or 5, we put emergency generators in the basement, we're not always smart, you could say. Actually stupid. But they put it on the roof. But there is policy in New York that is not connected to these generators on the roof that says, only if you are a gas station, you can store fuel above the ground. So the fuel for the emergency generator was in the basement so the hospital flooded and the doctors carried buckets of gasoline up the stairs to ensure that the generator kept working to provide electricity, to serve the patients that were still in dire need of that help right after Sandy. I visited that hospital together with Secretary Napolitano and Secretary Donovan right after Sandy, and the director of the hospital ensured us that no one died, that was good, the doctors worked hard, carried those buckets, everybody got evacuated at the right time, even those patients that had to wait long because they were operated. But that informs the policy framework for New York, saying, well, this is a weird rule, so evaluation after Sandy, what I said, the risk report, how these interdependencies work. A surge or storm or disaster is like a magnifying glass. Over whatever you have done to a region, a place, and this magnifying glass you have to take really serious, so this was an opportunity to change the policy. Also an opportunity to change standards. When an elevator, when there's a fire in a building, the elevator goes down, you can't use it. Now when there's a

	<p>flood, it does the same, because it causes a short cut in the circuit, so the elevator goes right into the water. These are easy things. You can actually use technology to prevent the elevator from going into the water, especially helpful when the elevator is full of people. So there are easy solutions to hard questions, and that learning capacity is critical.</p>
<p>Q 01:10:22</p>	<p>My name is Wee from Falcon Crest. I have two questions. I look at this floating structures and I have two questions. How long a life span can you design this structure for? Can it be 50 years, 100 years or more? Is it meant to be temporary? And when you build a floating structure, in terms of getting permission, do you go to the land authority to get a permit or do you go to the maritime authority to get a permit and also there's the valuation of the space. In land, we have land valuers. In this kind of space, who's doing the valuation? How do you resolve? If you build something on land, you have a valuer on the land but on the sea, who's doing the valuation? How much is it going to cost you to build something on the sea?</p>
<p>HO 01:11:13</p>	<p>Interesting. Life span, it depends. It's the same with the house. We can't build houses for, to last forever. At a certain time we fix them, fix them again and then we'll tear them down and build something new. The life span of floating structures are perhaps sometimes longer than the structures we put on the land, sometimes shorter. Also, really depending on the functions they have. This is a showcase pavilion in the city centre of Rotterdam, not aimed at, for living conditions. Next to that we are actually building a floating neighbourhood. So the whole neighbourhood will float. To your question, who do we ask permission? Depends on who owns the water. So in the Netherlands, it could be local, regional or national authority. It all depends. But you can't build floating structures everywhere. The Netherlands is a very regulated land. That sounds familiar, I guess. And it means that it's always clear who has the authority. And if it's not clear, there's always clear amongst the authorities who's the boss. So with our planning laws, there is a layered approach. We've</p>

	<p>changed it a little but there's hierarchy. There's national plans, there's regional ones and there's local ones. Normally you would not be able to build in the water, so you re-do your zoning plan. But that's a normal procedure. We re-do zoning plans everywhere. Now there are even places in The Netherlands where 100 years ago, we turned water into land. Now we actually going to turn land into water. And then put floating houses in. so the Dutch are sometimes a little weird. The planning of that is actually very normal so incorporating this into your plan is critical. And then how you value, that also depends. So the permission to build is a value. Until this time, we never sell the water while we do sell the land. But in Amsterdam, which is totally different than Rotterdam. In Amsterdam, until a year ago, they never sold land. All the land was owned by the government and given in a lease. In Rotterdam, they sold the land. So the government had no or hardly any position when it comes to development. It's very complex. And Amsterdam, they now changed it because they were short on money. It's not the best motive to change their policy. On water, we use the Amsterdam model. It's the lease model. So there's different valuation of that model. And you have the same way of valuating the opportunity to build on land as there is on water.</p>
<p>Q 01:14:50</p>	<p>Can I help this gentleman with his question? I used to work in a shipyard. Keppel shipyard and you know Singapore has built many many structures that are floating in the north seas, in Mexico [indistinct], in the wherever. Structures like these could either be built of steel, or they could be built of concrete. And whether it's steel or concrete, designing for a 50 year life is not a problem. In fact, you can also design for a 100 year life. But usually, your technical life, is a lot longer than your economic life. Because the structure becomes quite valueless after 50 years, whereas your structure is still technically sound. So it's not a case of structural problems, more a question of its economic value over time. The other thing is that, on valuation, when you talk about valuation of a property or asset on land, you're talking about its location because the value depends on its location.</p>

	<p>With structures that are floating, the location is, you can take the structure anywhere. You can float, you can build a building in Singapore, like we once built a floating hotel and that floating hotel went to Brisbane, it went to Saigon or Ho Chi Minh city, now it's in North Korea. So valuation becomes very subjective because it's location dependent. Right? Thank you. I hope that helps.</p>
CSG	<p>Thank you. Anymore? Ok, there's a question behind.</p>
Q 01:16:52	<p>Hello. My name is [indistinct] and I work for [indistinct], an engineering consultancy. When you talked about reaching out to the private sector, connecting professionals with people, I understood that you have professionals, two groups, you have the government professionals and the private sector professionals. This is how I understood your explanation. In that regard, I have a question and also maybe a proposal. You mentioned closing the gap and a crisis can be used to close the gap between professionals and the public. But I feel that in enough countries already you can also speak about the gap between the private and public sector of professionals. Wouldn't it be a first step particularly for Singapore, without an actual acute crisis right now to make sure that this is dealt with and after that you can uniformly inform the laymen, the people, get them involved. And also how would that look like? Thank you.</p>
HO 01:18:15	<p>No. I disagree. There's no gap between public and private sector professionals. It's a chosen gap but you all understand each other perfectly. You just choose not to understand each other. There is a real gap between the professional and the public. I will explain why. I worked for both sides. And in collaboration, it's hard. But hard is different than a gap. Hard is tough and it doesn't always work. Hard means that sometimes you fight and you disagree, or you don't connect. But you understand each other in interpreting the world perhaps differently. But there isn't even a language between the public and the private or the public and the public sector that bridges that gap.</p>

	<p>Second, a process of collaboration has to involve all from the beginning. You can't start with professionals first. But we do all the time. Then professionals start to gain better understanding. And professionals actually gain so much understanding that they start to work on bringing that understanding to solutions. And then the next conversation will be with the people who don't understand anything of the conversation. And all of a sudden, we are confronted with half-baked or not fully fleshed out solutions that you need buy-in from. That's not collaboration. That's an insult. If you really take collaboration serious, you have to be able to be vulnerable at the beginning and say at this table where government, researchers, private sector sit, that perhaps don't work together, but also understand each other. You also invite the others that normally would not be on that table to start to inform the same process you would normally have when you want to bridge the so-called gap between the private and the public sector.</p>
Q	<p>That's great thank you for your explanation. I agree with you that you need to incorporate the public from the beginning. But then again, isn't that what we practice right now? For instance, the summit coming up in July, are there people invited for this?</p>
HO 01:21:01	<p>I'm invited yea.</p>
Q	<p>I'm not saying this your fault or anything. But you have a thought about water issues, water safety, Singapore has its fair share in this regard but also a lot of knowledge and a lot of potential and also a population which is highly engaged. Wouldn't they want to come? So from your experience, what would work best? Maybe the, not you particularly but in general, for the summit, wouldn't it be also beneficial to have local people from municipalities, from neighbourhoods, invited to join in and take part?</p>
HO	<p>There are actually conferences where this is happening. Where the doors</p>

	<p>are open. Where you have local fora. Where people can walk in. I was just in New Orleans, where I got questions from the audience. I can definitely assure you they were not the professional crowd. Interesting organization New York is the American Institute of Architects. Always weird people in the room. It's like where do you come from? I know you are not an architect. Great. Building up that capacity. So yes. There are all kinds of formats and opportunities. This is one. The other part is, communities are well organised. So instead of saying that professionals, we, this room, should organise for communities to join our processes, we join their processes a little more to really hear a different side to the story. We like to be in charge as professionals because we think we are ahead of the game.</p>
Q	They are the ones who are really ahead of the game.
HO	<p>That's right. Government or professional involvement is a different perspective than when you say public involvement. And public engagement still means that I have an idea, I am going to present it to the public in whatever state the idea is, and if they buy it or not, it's still my idea. If you go the other way around, it starts a different conversation.</p>
CSG	<p>Ok, we have time for maybe just one or two more questions. Perhaps I take the questions first then I let Henk to respond to the questions. Mr John Teng.</p>
Q	<p>Very interesting conversation. I hope I read you correctly, the takeaways. First of all, water is an immutable. It's not something that you can address and manage completely. It's forever changing right? So you have to be always watching it and re-doing again and again and again. Now, your history goes back a few hundred years, water control, water management, it's a few hundred years. 11 something if your chart says it correctly, almost 900 years. It's wonderful for me to see a society that looks at this thing called water, year in, year out, for so many centuries and still thinking they're still behind what water can and cannot do. That's an interesting message. I like your idea of Rebuild by Design by the way. I</p>

	<p>think it's a smarter way to do things than to try to recover aftermath which is always disastrous. The best you do is always the worst effort anyway, the result. And so I want to ask you, you been here first of all, in July last year, you've done a workshop on Monday, and from how you speak, I know you are very knowledgeable so I want to ask you a very naïve questions. From what you know of Singapore, what are the 3 possible holes that we have that we don't even know? Because we are very young. We've only been looking at it very seriously for less than 50 years. So I think we are very naïve and young. There's a lot of things that we think is in order, we take it for granted or we believe it's in order but we are not even aware of what is underneath us. So I want you to tell us 3 or maybe even 2, possible holes that we need to look at seriously. Thank you.</p>
CSG	Ok I saw a question in the back just now.
Q 01:26:025	<p>Thank you. My name is CT Yeo. My company is called CA Architects. As you know, Singapore is an island and our lowest level is about point 5 to 1 metre above mean sea level. I understand that PUB has a policy to raise our ground to minimum 104. 4 metres above mean sea level. My question is, based on your experience for the past few hundred years, is this the best solution for Singapore? The first thing come to our mind is to raise our ground.</p>
HO 01:27:00	<p>So 4 metres. In the United States, we uh, well, not me, but after Sandy, they said, a foot. 4 metres sound pretty progressive. I don't want to compare you to the United States. Not at all actually. I couldn't judge this because I never did IPCC impacts on Singapore. So I wouldn't know what..because you have relative sea level rise. In Jakarta, it's the same sea level rise as here but land decline is as much the other way, as sea level rise for the last hundred years then every year. So relatively speaking, it's very hard to give an opinion on your idea, on this proposition because I just don't have the knowledge on climate change impact on the specific case of Singapore.</p>

Then on the other question. I totally agree. It's about living with water, which is different from fighting it. I don't believe in fighting water because you will lose. Water is stronger or more intelligent. It just bends. Water does not fight. It just goes around you and then it hits you from the back. So you better live with it which is embracing it. Which is another part in that which is that don't think you can fix climate change. It's such an engineering thought – fixing climate change. When I started to work in the United States I got an interview and the interviewer, the reporter said, so Mr Ovink, are you going to build this storm surge barrier next to the Arizona Bridge? And I said, I don't know but I don't think so. There's no silver bullet. If that would have been the solution, then it's always part of a series of interventions and that series of interventions due time and through time, will change and evolve and new interventions or changes to the older ones are necessary. So living with water never stops. As is living with uncertainties and uncertainties never stop. That's life. This is so great. That is what we can do as mankind, we can change. We adapt. We do things differently than our fathers and mothers and our grandfathers and grandmothers did. And our kids, we know this, sure are doing things differently than how we lived our lives. Sometimes it's frustrating or inspirational. So instincts.

Then your second question. The hardest one of the afternoon. The 2 to 3 holes Singapore was not thinking about. I don't know of course. I'm totally new to this game here. Singapore is new. But what I do see, is a country with a huge capacity amongst its citizens and professionals, with also perceived low resourceful, I think it's actually not so low resourceful. You have a lot of resources. You can rethink and use your land. It's used in an urban way and there are cities around the world that have less of the value you have that you can bring to the table. So I think if I look at Singapore, it's always as a city-state, and as a city, as a metropole, as part of the world, you have a great amount of resources and quality you can bring. So sometimes it's also changing the perspective on what you have.

	<p>On the seaside, on the land side, in the soil. So 3-dimensional. As well as adding the 4th dimension which is time. Tomorrow it will be different. But it also gives you the opportunity to not solving everything today.</p> <p>Lastly, I wouldn't be a Dutch guy if I wouldn't promote cycling. Well, but that was a no brainer. So I'll stop with that.</p>
CSG	<p>I know you all still have some questions but I think due to the time, I have to end it here. Perhaps, I'm not sure about you, but there are 3 insights that I take away from today's conversation as well as Henk's talk. One, is about crisis. I think we should recognise that there are a lot of crisis, whether locally or around the world, is water related. And this crisis can be man- made or man caused, for example, due to bad management of water or it could be due to the nature, exacerbated by climate change/so crisis, we should not ignore crisis. Second, to respond to the crisis, collaboration is very important. It's no longer government top down effort. You need to collaborate with the communities, collaborate with the professionals, to get the best solutions, to get the more resilient solutions. And finally, I think there's this very important point which I really like. It's that we devise the programmes and the solutions. It's not about big budget or big programmes. At the end of the day, it's for care for the individuals. Whether the individuals, whether the home owners or the businesses, how they benefit from the resilience programmes, from the improvement programmes. So I think you all will agree with me, I think it was a very enjoyable and enriching session this afternoon and let's put our hands together to thank Henk.</p>
Emcee	<p>Thank you panellists, for sharing your insights and experiences with us. Please stay on stage. We would now like to invite Mr Khoo, Executive Director of CLC on stage to present tokens of appreciation to the panellists and for photo taking as well. Mr Khoo please. Thank you.</p>
	<p>[Recording ends at 01:34:41]</p>

Singapore and the Netherlands: Innovators driven by Scarcity	33	Henk Ovink 216/2016
---	----	------------------------