



Jordan Imahori - Canada

Good afternoon everyone, my name is Jordan and the issue that I am working to address is the high rate of heat-related deaths and injuries in the construction industry in Qatar, as well as several other Gulf states. You may have heard news headlines talking about the number of migrant workers that have died building facilities, such as those going to be used in the 2022 World Cup. And, driving much of this is the region's high temperatures, which can reach about 50° Celsius in the summer months. These high temperatures put lots of stress on workers' bodies, particularly their heart, and can lead to complications, such as heart failure. So, heat stress is a serious and largely unaddressed issue. So, the situation is complicated by the fact that the construction industry, or the construction labour force, is composed primarily of migrant workers, whom the government is not particularly willing to protect, and construction firms are largely willing to regard as expendable. So, the question is, how do we protect workers in the absence of a willing government and disinterested industry? Our answer to this question is to present firms with an innovative approach that makes reform that we want to see, in this case reducing heat-related deaths, the least costly option.

So, to do this we have partnered with a Dutch company to produce and design a vest that uses evaporative cooling, to reduce the impact of heat on a worker's body. The vest incorporates features of a traditional safety vest, meeting a number of international standards, which allows it to be used in the place of traditional high visibility vest that you frequently see on construction sites today. The vest contains an absorbent gel inside of a breathable membrane, and when this is soaked in water it allows for the gradual evaporation of water over the course of about six hours, and this water as it evaporates brings, or takes with it, excess heat from the worker's body, allowing a worker to stay cool and lowering the worker's core body temperature and reducing the impact of heat on that worker.

We completed preliminary testing of these vests in Doha, or near Doha rather, this summer, on a trial of 50 workers, over the course of eight weeks. We conducted this test with the cooperation of a large construction firm there and with funding from the University of Toronto. This preliminary testing was positive; it noted a decrease in core body temperature, as well as blood pressure. So, now that we are confident with these results, we are moving forward with making these vests more widely available to construction companies. We are currently in talks with two companies, to provide part of their workforce with vests and have concluded a deal with one other company. So, when trying to reach migrant workers we are immediately struck with one large problem: there are 1.4 million migrant workers in Qatar alone, and distributing vests to all of them would require a massive investment that donors would be unlikely to be willing to finance. So, in order to reach them, we make the case to construction firms themselves; that investing in this technology is in their best interests. There are costs to heat related deaths and illnesses, whether these are reflected as direct monetary costs, or indirect costs, such as a damaged reputation, or decreased worker productivity, or other costs like that. But, under the current system, these costs are not sufficient to justify paying the costs to take the steps to protect workers from heat. So, cooling vests lower these costs involved in protecting workers from heat stress and consequently they make it possible, or they make it so that it is a company's best interest, to protect their workers from heat.

What we do is we provide these vests to companies at close to the marginal cost and then what we charge over top of the marginal cost, so what we take in profit, we invest to provide demonstrations of the vests to other companies and other initiatives, that helps us to get the message out that this is an important technology that construction firms should be investing in. So, this kind of approach allows us to reach the broadest audience, while also retaining enough cash to pursue other projects to expand our reach. Also, I should mention that the marginal cost is about 24 US dollars per vest, plus the freight costs from the manufacturing facility in China. Eventually our goal is to see evaporative cooling vests be as widely used in countries where they would be beneficial, as hard hats and safety vests are today. So, thank you for listening, and I would be happy to answer any questions you may have.