GROWING GRASSHOPPERS

Meet Togolese designer Mansour Ourasanah. His edible insect plan tackles the meat vs carbon-emissions debate.

MANSOUR OURASANAH BELIEVES THAT GOOD DESIGN CAN solve the world's most pressing problems. From his Chicago studio, he says that such solutions must be "eye-catching and challenging with the ability to inspire everyone". Surely no solution is as eye-catching or challenging as Lepsis. This acrylic box raises grasshoppers fit for your frying pan – and sits on your kitchen table.

The 29-year-old has come a long way from his native Togo. His Lepsis design was a runner-up for the acclaimed Index: Design to Improve Life sustainability award in Denmark, and has challenged the way we think about the global food crisis. The product's origins are similarly humble. "The reason I grew up eating grasshoppers is that often they were the only thing to eat," explains Mansour. After each rainy season, his friends would catch and raise edible insects to be sold in surrounding towns. "Food is limited in many developing states so an open economic market exists for their sale and consumption." Flying ants and crickets continue to form part of the Togolese diet, as they do for two billion other people worldwide.

As one might expect, Mansour's move to the US at the age of 16 gave him a culture shock. "I got to experience a lot of food hardship in Togo. So the fast food and grocery stores [in the US] looked like heaven!" The realisation that one company could create identical burger bars in 119 countries stirred an idea close to Mansour's heart. "I realised there was an opportunity to address the food issues I was familiar with through good planning and design." His parents worked hard to send him to the University of Notre-Dame. A Master's degree in Sweden exposed him to the cutting edge of industrial design. His life's knowledge and engineering education resulted in one amazing invention.

CLOCKWISE FROM TOP: Grasshoppers feed and grow amid a green plastic leaf-like latticework; edible insects are a credible supplement to the world's protein needs; Togolese designer Mansour Ourasanah.

"I knew how to raise and harvest insects from my time Togo," says Mansour. "I could also design and build a working prototype", albeit an exceptionally stylish one. The current Lepsis design consists of two hemispheres. In the bottom, grasshoppers feed and grow amid a green plastic leaf-like latticework, a process Mansour calls "harvesting".

Then it's "baiting" time, where a smaller bulb-lit hemisphere is screwed onto the top. Attracted to the light, the bugs simply hop upstairs. Next comes "Killing". The top hemisphere, now full of grasshoppers, is unscrewed and placed in the fridge. Here the insects become dormant – and ready for the pan.

Surely the last point may have squeamish readers reaching for their Big Macs? "A lot of people said the same thing," laughs Mansour. "They advised me against showing insects inside the terrarium. They said: 'it's nasty, it's disgusting, why do you want to see them?'" But the designer didn't want his customers to shy away from knowing the origins of their food. "In a country like the US, food becomes something that appears in your grocery drawers," says Mansour. "Understandably, you are far removed from the hard work and act of killing that has occurred to bring it to you." According to Mansour, our cognisant removal from the food chain has profound implications.

Livestock production currently takes up nearly a third of the world's entire landmass. As developing countries become wealthier, one of the first things their citizens spend their money on is more meat. But most of world's productive farmland is already in use. Just as alarmingly, according to a UN Food and Agriculture Organization (FAO) report, worldwide livestock farming generates 18 percent of the world's greenhouse emissions. That's more than all the world's planes, trains, cars and boats put together. Flatulent beef cows produce up to 200 litres of methane per cow per day. This gas has 23 times the global warming impact of carbon dioxide. There are 100 million cattle in US alone.

As the world's population ascends to nine billion by 2050, Mansour estimates that meat production will have to double. But what if it didn't?

According to the FAO, edible insects are a credible supplement to the world's protein needs. Chupaline grasshoppers, which are eaten in the street markets of Mexico, comprise 77 percent protein, compared with around 25 percent for fillet steak. Palm grubs, which are enjoyed in Indonesia, are 70 percent fat so can be fried without requiring oil. Mealworms are already powdered up and placed into some protein shakes. "Protein supply is a globalised problem," says Mansour. "We import lentils from Canada, lamb from Australia, peanuts from Nigeria, so we require a global solution".

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Mansour banishes any creepy-crawly negativity with two clear points. Firstly, as livestock production becomes tighter, we haven't got any choice. "To say 'well I eat this as my grandparents used to', or 'my family doesn't eat that' is plainly unsustainable."

Secondly, "problems associated with food could be solved with the right message". In the 1950s few thought that freeze-dried coffee and canned beef would catch on. Now such production methods are ubiquitous. Even a decade ago people were shocked by raw fish and quinoa salads. Now these foods are habitual – and well-loved – protein sources. If the world's top chefs replaced snails and oysters with caterpillars and larvae, the trend could catch on. Given that Alain Ducasse, the world's most decorated chef, recently banned meat from his signature restaurant at Paris' Plaza Athénée, other proteins may find their mojo.

Wealthy diners aside, how far will Lepsis go to feeding the world's poor? "Not very," concedes Mansour. "I didn't think everybody would just jump on the boat and start eating grasshoppers right away!" But his point is more about educating the rich. If the world's largest consumers knew what large-scale meat production meant for the world's land, water and labour resources, it might change their attitudes about what they eat. "It's like driving the world's first electric car. It might be an ugly prototype... but it's more about the morals of what you'd like to do to save the planet".

Mansour's next port of call also combines practical plans with theoretical solutions. Lepsis will star at the Istanbul Design Biennial (1 Nov-14 Dec, tasarimbienali.iksv.org), a free-to-the-public citywide show, which this year has a sustainable cities theme. Other creative exhibits will include city survival kits from Jessica Charlesworth, plus Can and Aslı Altay's Future Anecdotes Istanbul show.

As Mansour and his designer colleagues are feted in Istanbul, how can anyone with a similar solution help change the world? "When you have an idea you simply have try to put it out there," says Mansour, whether it's how we organise global nutrition, pinflag landmines with apps, or heal global enmities with instant messaging. "My generation can usually use Photoshop, produce a short video or at least make a storyboard with pieces of A4 paper. You may get lucky and someone becomes inspired by your idea. That's what happened to me."

See Mansour's Lepsis video here: vimeo.com/55695909

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