

# Tackling overcrowding

HOMES ON FLOATING PLATFORMS MADE LARGELY OF PLASTIC BOTTLES ARE IN THE OFFING TO EASE HOUSING PROBLEMS IN THE MALDIVES

**T**he Maldives, one of the most densely populated nations, has embarked on a series of floating developments that could take the pressure off a severe housing shortage and counter sea-level rises owing to climate change. The firm behind the project is also proposing to build cheaper floating platforms, made largely from plastic bottles, to house schools and essential services in the aftermath of floods elsewhere in the developing world.

The first initiative, The 5 Lagoons Project, is a joint venture between the Maldivian government and a Netherlands company, Dutch Docklands. Located near the capital, Malé, it is aimed at tourists, but there are plans to develop affordable floating homes for citizens in future. Koen Olthuis, an architect who co-founded Dutch Docklands, says the first construction phase — comprising 185 luxury villas — began four months ago, with completion expected in July 2016. Later phases include floating private islands, a golf course with artificial turf and a hotel and con-

vention centre that could attract climate-change conferences.

The structures float on concrete and styrofoam foundations, anchored to the seabed with cables or telescopic mooring piles — tube-like structures that can extend up and down with changing sea levels.

Olthuis says total investment for the project, which is backed by private investors he would not identify, could be more than \$1 billion. But he expects it will be five years before construction begins of affordable floating homes for residents, for which contracts and financing are not yet arranged.

Tourism projects are needed first to generate income and demonstrate the benefits, he says.

When Dutch Docklands explained its technology to Maldivian ministries two years ago, the conclusion was that up to 20,000 houses would be needed in the next 10 to 15 years to cope with that expansion. And some of those homes could be built on floating platforms at an affordable cost of less than \$40,000 each. That is not much more expensive than affordable housing of comparable size in the Maldives today, says Olthuis. Dutch Docklands is working on similar floating technology that could be used to provide safe, useable space near slums threatened by flooding in Dhaka, Jakarta and Manila. These platforms are made of thousands of plastic bottles held together with scaffolding, and could be used to provide services during floods, such as schools and power generators. One such platform is due to be sent to Jakarta from the Netherlands in mid-December, equipped with Internet facilities for education purposes.

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