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Environmental Progress in Middle East May Hinge on Financial Gains

CAIRO - Atop his permanently unfinished rooftop in Cairo's Manshiyet Nasser District, Hanna Fathy twists the spigot of his homemade solar heater. A trickle of hot water cascades to the dust-swept floor as the blazing sun sinks on the horizon.

Hanna Fathy demonstrates a water heater he made with recycled plastic bottles.

Fathy builds water heaters out of trash in the impoverished area known to Egyptians as Garbage City. The aerial view from his rooftop reveals streets lined with nearly 75 percent of Cairo's waste.

Across the Arabian Peninsula, in the rapidly developing city of Doha, Qatar, Peter Bolton dodges a myriad of cranes in his Nissan Patrol while pointing out energy efficient infrastructure on The Pearl-Qatar, a new Riviera-style man-made island in the Persian Gulf.

Bolton serves as Head of Environmental Protection for the 985-acre complex constructed on reclaimed land off the coast of the world's wealthiest country per capita. Behind the tinted windows of each posh villa lies an innovative energy conservation system.

Manshiyet Nasser in Cairo and The Pearl in Doha epitomize the vast disparities of wealth and education prevalent in the Middle East. Despite some efforts toward sustainability from people like Fathy and Bolton, going green here is typically pursued if and only if such developments produce a different shade of green: financial incentives.

According to Egypt's Minister of Finance, Youssef Boutros Ghali, tensions resulting from violent bread riots and widespread poverty are just two factors preventing his country from establishing concerted efforts toward protecting the environment.

"Developing greener technology in all countries is costly," Ghali said. "We don't have the money or the resources to spend on improving the environment. We have more pressing problems."

Samir Mowafi, General Manager of Egypt's Regional Center for Environment Protection, believes that these social concerns could potentially be alleviated through the expansion of environmental programs.

"From a financial point of view, the cost to improve the environment is a direct cost, but the benefits are indirect," Mowafi said. "People don't consider the environment in their future because the benefits are intangible in the long-term."

In Manshiyet Nasser, the financial benefits of recycling are unequivocally tangible. The 40,000 trash collectors who live and work in the foul-smelling streets of Garbage City rely on Cairo's waste for their economic survival.

Cairo is like many Middle Eastern cities in that it lacks an effective system for pre-disposal recycling. As a result, the predominantly Coptic Christian community known as the Zabaleen, meaning "garbage people" in Arabic, separate an estimated 4,000 tons of trash each day into organic and inorganic matter.

Most of the inhabitants of Garbage City are Coptic Christians.

The organic waste collected is used to feed the city's goats, dogs and pigs while the inorganic material is sorted by hand for valuables and later recycled for cash. Of all the trash that ends up in Manshiyet Nasser, Fathy estimates that 80 percent is reused or recycled -- a figure that puts most modern cities in the West to shame.

"The people working in garbage are not working because it is environmental work," Fathy said. "They just want to earn money and have no other way to do it."

But now, thanks to the Spirit of Youth Association for Environmental Services, 120 boys as young as eight are learning the economic benefits of recycling and developing alternative energy at Recycling School in Manshiyet Nasser.

Adham Fawzy is a teacher and former student at the school who understands the importance of balancing students' time between work and study.

"We try to link income with education without destroying the boys' schedules because they have to help collect the garbage," Fawzy said.

Rather than attending class on a daily basis, boys enrolled at Recycling School attend 20 lessons each month on topics like health, the environment and reading. If they complete all required assignments, each boy earns 500 Egyptian Pounds (about USD 94) per month for collecting plastic bottles that are later resold to companies like Procter & Gamble.

"In order to help abolish mathematical illiteracy, we make the boys calculate the amount of bottles they collect and multiply them by the amount of money they receive," Fawzy said. "After calculating it in his mind, the student uses a spreadsheet to help him learn to use the computer."

Fathy teaches some of the boys how to construct solar heaters that can be used to store water for washing up in times of frequent drought. The hot water helps to erase some of the shame many Zabaleen associate with the dirty nature of their careers.

"We try to save the water because we never know when it will be working. Last week there was no water for three days," he said. "It is very important for the people here to have hot water to wash their clothes and hands because the garbage is dirty and filled with diseases."

Fathy hopes the younger generation will value environmental preservation for more than just a monthly paycheck.

"The students at Recycling School start to know things about the environment, about life, about being green, and they start to talk to their families and communities about it," Fathy said. "We need to show the Egyptian government that we can do things with this community."

Rafik Riad, Communications Manager for the Egyptian Ministry of Environmental Affairs, praised the Zabaleen for their expertise in waste separation and reuse.

"People who work and live in poor areas often deal with the environment better than wealthy people," Riad said. "Their consumption levels are a lot lower and they are more in touch with nature. They reuse everything because they cannot afford to have a high level of consumption."

Despite his respect for the Zabaleen, Riad believes that a more efficient pre-disposal waste separation system should be established in Egypt. The fact that even the Ministry of Environmental Affairs lacks office bins for on-site recycling may make future developments in this area an uphill battle.

"To start waste segregation for recycling at the source, we need time to change mindsets, raise awareness and educate people at the grassroots level," said Regional UNEP Director Habib El Habr.

Children of Garbage City.

Even in Qatar, the environmentally progressive Pearl real estate complex does not plan to initiate a pre-disposal recycling system for domestic waste until the state adopts a philosophy compatible with this process.

"There is recycling in this country, but it is very piecemeal at the moment," Bolton said of Qatar. "It seems that actually persuading someone to put their rubbish in a bin out here is quite an achievement let alone having them put it in a special container."

As the world's wealthiest country according to the CIA World Factbook, Qatar's GDP per capita rose to USD 80,900 in 2007. Qatar is no doubt economically advanced enough to develop environmentally sustainable technology and infrastructure. The real obstacle, however, seems to be keeping up with the sheer speed of cultural and societal shifts.

"Within a generation, Qatar has moved from a society that was rural, to industrial to environmentally aware," Bolton said. "Now there is the Supreme Council for the Environment and Natural Reserves [SCENR]. Obviously there's a long way to go, but they've achieved a great deal in the 12 or so years they've been at it."

In this short timeframe, members of Qatar's SCENR say the country's carbon dioxide emissions have more than tripled. Data from the United Nations show that Qatar has established itself as the world's largest carbon dioxide emitter per capita.

Watching Qataris and expatriates shivering in their air-conditioned Land Cruisers and Hummers as they speed past one new skyscraper after the next may shed some light on the problem.

Making matters worse is Qatar's poor record for gas flaring that has improved only in recent years. This process, in which natural gas released during oil extraction is ignited, has contributed greatly to atmospheric pollution.

Qatar only began to reduce flaring when harnessing natural became increasingly profitable. In 2007, the tiny peninsula became the world's largest exporter of liquefied natural gas.

Despite improvements in the Gulf, the Global Gas Flaring Reduction partnership estimates that countries in the Middle East and North Africa still flare about 50 billion cubic meters of gas annually.

A few worrisome cultural characteristics and business practices aside, UNEP's El Habr sees Qatar's historically late development as a promising opportunity for it to establish environmental sustainability.

"The advantage of Qatar and other oil producing countries in the region is that they are looking at the expansion of their development and economy from the start. They have the luxury to avoid mistakes made in the past by other countries," he said.

Bolton says he and his Environmental Protection team ensured from the very start that environmental considerations would not be overlooked in developing The Pearl-Qatar.

Unlike Dubai's Palm Islands, which were constructed from sand dredged directly from the sea and sprayed into mounds, the islands at the Pearl-Qatar were built with minimal dredging inside a cofferdam to impose less stress on the area's natural environment.

75% of Cairo's waste lines the streets of Garbage City.

Several years after constructing the man-made islands, Bolton says that marine life is thriving, but at what cost?

"We've lost some environments and some ecosystems, but we've gained others. If you're a palm tree or a reef fish, you're going to be very pleased with what we've done," Bolton said.

Environmentalists will probably be as pleased by the infrastructural considerations taken into account to reduce energy consumption--and cut costs.

"Water is a valuable asset in the Gulf, so when you go to the toilet and flush, that water does not go out to sea," Bolton said. "It goes to the sewage treatment plant and is used in our district cooling system, for irrigation and to fill ornamental lakes."

All buildings constructed within the real estate complex must also meet certain requirements regarding the tint, size and position of windows. These conditions are meant to reduce the sun's thermal impact and cut down on air conditioning demand.

Although one could argue that these measures are environmentally friendly, the primary motive for their adoption seems to be economic. Many people in this region are just beginning to understand the financial implications of environmental conservation.

"We hope to have an on-line consumption meter so that people can compare their electricity and water usage and set their own environmental and financial improvement targets," Bolton said. "We will provide all kinds of information about how people can be environmentally friendly while living on the island."

Mowafi has seen a similar push for green reforms among drivers in Cairo. Rising fuel prices despite government subsidization have prompted some of the city's nearly 80,000 taxi drivers to fill up their tanks with cleaner compressed natural gas (CNG).

"Taxi drivers are finding natural gas to be an interesting option because it costs 30 percent of what they pay for petrol," he said. "This is good for drivers from a financial point of view because the difference in price can make up for the cost of converting their cars."

According to Mowafi, converting a vehicle's fuel source from petrol to CNG costs around \$1,000--a price Cairo taxi driver Mahmood Sayed isn't willing to pay no matter the potential economic or environmental benefits.

"Some of my driver friends have found that using natural gas is a good way to save money, but for me, petrol is much more convenient," he said.

The Egyptian Ministry of Environmental Affairs has worked out a loan deal with the National Bank of Egypt to make the initial conversion investment much more affordable to drivers. According to the Ministry, more than 100 drivers applied for the program in early June of this year alone.

Growing support for the conversion from petrol to CNG could help diminish Cairo's notorious reputation for high levels of air pollution.

According to the U.S. Environmental Protection Agency, vehicles operating on CNG can see carbon monoxide emissions drop by more than 90 percent and carbon dioxide emissions cut by 25 percent compared to emissions from petrol-run vehicles.

Although the vast majority of green developments in the Middle East stem initially from efforts to cut costs or gain political leverage, the growing awareness and concern for environmental issues that has resulted from these finance-driven reforms is promising.

Fathy plans to marry his fiancée in Manshiyet Nasser this September. After revealing his dreams to create biogas and wind power in Garbage City, he shares the values he hopes to instill in his children.

"When I have children, I want them to do environmental work. I want them to do new things everyday to help people understand that they can change their own lives," he said.

Bolton has an equally optimistic view for Qatar's future.

"I've see dramatic changes in the approach that this country is taking in environmental management," he said. "With wealth has come information and knowledge and there has been a substantial increase in environmental consciousness among the society."

The simple homemade solar heaters in Manshiyet Nasser and the energy efficient infrastructure at The Pearl show that sustainable developments--for profit or preservation--are benefiting the environment.

Whether the rapidly developing Arabian Gulf can continue to evolve from a culture promoting excess to one of greater environmental consciousness could determine the Middle East's role in securing an environmentally sustainable future for itself and the for world.

Twelve Americans, twelve Arabs, two countries - The AUC-QU Middle East journalism Boot Camp took place in June 2008, bringing together students from ten of the top U.S. journalism schools, The American University in Cairo and Qatar University in a unique three-week program of lectures, high-level briefings and site visits in Egypt and Qatar.

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