

Notes from the Edge

Insights into an Evolving Future



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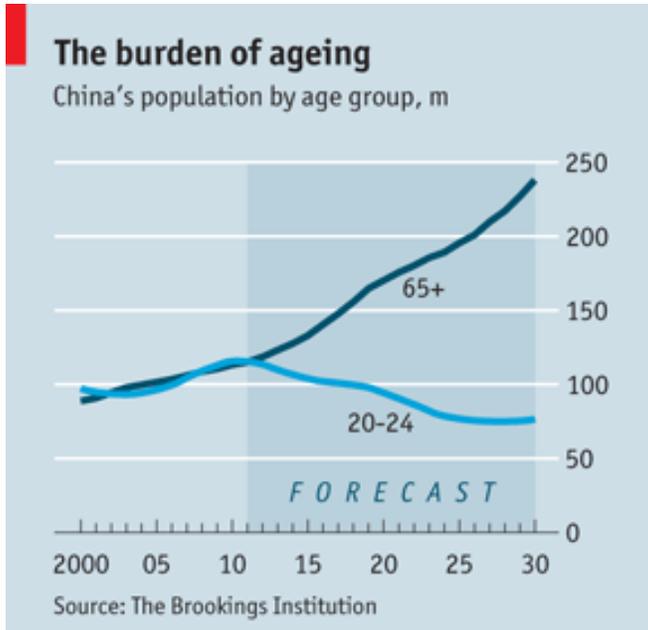


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CHINA

Shrinking China: A Demographic Crisis: China's stability is about to be challenged by its declining demographic patterns. The one-child policy has created population abnormalities that will likely affect the entire country and its economy. China's workforce is dwindling, fertility rate is dropping, and the female population is becoming increasingly scarce – there are 115.9 boys for every 100 girls. According to the article, there will be no potential wives in China for a fifth of the country's males in the 2030-45 timeframe. The gender imbalance will likely cause momentous complications such as increased prostitution, female trafficking, and a rise in criminal groups. China's workforce will also be greatly affected and India's workforce will overtake China's by 2030. Demographic trends will challenge China in the turbulent times ahead. The potential for massive social and economic unrest is high and will lead to dynamic effects in both regional and global security interactions.

[Little Emperors](#)
[China's Future](#)

URBANIZATION

Urbanization in Africa: Why Nations Rely on Cities: Africa's urbanization is a ticking bomb ignored by most local governments because it requires long-term planning and strong political leaders. Africa is projected to be 70 percent urbanized by 2050, but appears to be unprepared to manage the massive migration of people into cities. The ramifications of urbanization failures can be devastating in a continent struggling to thrive. Africa should look towards Korea and Malaysia for successful urbanization management. Urbanization can be positive – providing jobs and resources. It can also be

disastrous, especially if cities are unable to absorb large amounts of people without driving them into slums. If Africa is unable to devise strategic urbanization plans, Marines operating in the region may see increased mission challenges involving maneuver in and out of urban terrain and peri-urban slums.

[Urbanization in Africa](#)

Jenga-Like High-Rise Helps Residents Connect With the World: Architect, Ole Scheeran is proposing a new type of sky scrapper to be unveiled in Vancouver. The new building consists of shipping container style floors protruding horizontally from the main structure. "It gives the sense of arms and fingers reaching out and floating in the sky," Scheeran says. The architect claims current towers have become boring and unoriginal and should be replaced by imaginative structures that connect people to their outdoor environment. The evolution of the Urban environment will continue to increase in complexity as modern engineering allows innovation and evolution in architecture and urban systems.

[Jenga-Like High-Rise](#)

ENERGY AND WATER

Scientists Create Eco-friendly Jet Fuel from Sugarcane: Since airplanes release a significant amount of CO₂, the EPA has recently announced plans to regulate greenhouse gas emissions by the airlines industry. Researchers at the University of California at Berkeley have created a sugarcane-derived jet fuel that reduces greenhouse gas emissions by 80 percent. After fermentation has broken the sugarcane down into carbon atoms like acetone, butanol, and ethanol, the catalysts work to string together longer carbon atom chains called methyl ketones that can be used as the building blocks for effective fuel. Alternative fuels and energy sources will provide opportunities for future Marine Forces and will affect global energy markets in ways that will change global competition and conflict dynamics.

[Sugarcane Fuel](#)

Engineering Electricity Grid of Future from the Danish Technical University: Researchers are using Bornholm, a Danish island about 100 miles east of Copenhagen, as a real-life test lab for the grid of the future. Denmark received 40 percent of its electricity from wind last year and is scheduled to receive 100 percent of its energy from renewable sources by 2030. Bornholm is an ideal test subject because it receives a large portion of its energy from renewable sources. Because renewable sources (wind, solar, etc) are fickle and can create major challenges, the Danes have been using a grid simulator in Bornholm to test possible solutions.

[Electricity Grid of Future](#)

A Third of Big Groundwater Basins in Distress: Data from NASA's Gravity Recovery and Climate Experiment (GRACE) satellites and studies from the University of California, Irvine have revealed that about one third of the Earth's largest groundwater basins are being rapidly depleted by human consumptions. Eight aquifers were classified as "overstressed," with almost no natural replenishment while the most overstressed aquifers are in the world's most arid regions. "We don't actually know how much is stored in each of these aquifers. Estimates of remaining storage might vary from decades to millennia," said Richey (author of both studies). "In a water-scarce society, we can no longer tolerate this level of uncertainty, especially since groundwater is disappearing so rapidly." Such basic resource shortages will continue to drive human competition leading to social and governmental stress. Conflict, disorder and migration often follow. Anticipating such shortages will help us to determine likely regions that will require humanitarian and security assistance.

[Running Out of Water](#)

SCIENCE

Study: Common Antibiotic Kills Drug-resistant Bacteria: Researchers at the University of California San Diego discovered that Zithromax Z-Pak, a common antibiotic, kills many drug-resistant bacteria. Zithromax Z-Pak had not been prescribed to patients because it was thought to be ineffective against certain bacteria. Mammalian tissue which is used to sustain human cells in the lab was used to grow the bacteria instead of using current standard bacteriologic means. "Unquestioning adherence to a single standardized lab practice may be keeping doctors from considering potentially life-saving antibiotics -- therapies that are proven safe and readily available in any hospital or pharmacy," said Victor Nizet, M.D., a professor of pediatrics and pharmacy at UC San Diego.

[Z-Pak](#)

FORESIGHT

STRATFOR has 11 Chilling Predictions for What the World Will Look like a Decade from Now:
[The World 10 years From Now](#)

This newsletter is intended to highlight issues and ideas which may prove significant in the evolving future. In keeping with our focus on both alternative futures and analysis, items in this bulletin will generally be of an alternative nature, or drawn from atypical sources.