THE COASTAL POPULATION EXPLOSION

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Humankind is in the process of annihilating coastal and ocean ecosystems. At the root of the problem are burgeoning human numbers and their ever-growing needs. Population distribution is increasingly skewed. Recent studies have shown that the overwhelming bulk of humanity is concentrated along or near coasts on just 10% of the earth's land surface. As of 1998, over half the population of the planet — about 3.2 billion people — lives and works in a coastal strip just 200 kilometers wide (120 miles), while a full two-thirds, 4 billion, are found within 400 kilometers of a coast.

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Take the example of China, the world's most populous nation. Of China's 1.2 billion people, close to 60% live in 12 coastal provinces, along the Yangtze River valley, and in two coastal municipalities — Shanghai and Tianjin. Along China's 18,000 kilometers of continental coastline, population densities average between 110 and 1,600 per square kilometer. In some coastal cities such as Shanghai, China's largest with 17 million inhabitants, population densities average over 2,000 per square kilometer.

In general, with the exception of India the bulk of Asia's population is coastal or near coastal. Of the region's collective population of 3.5 billion, 60% — 2.1 billion — live within 400 kilometers of a coast.

Indonesia and Vietnam are two typical examples of Asia's population shift from the hinterlands to coastal areas. Of Indonesia's population of 200 million, 130 million live on the main island of Java, on just 7% of the country's land area, most of them in rapidly growing towns and cities. Similarly, Vietnam's population is almost all coastal. And coastal populations are growing two-tenths of a percentage point faster than the rest of the country. Population densities along the country's coastline average between 500 and 2,000 people per square kilometer. In parts of Hanoi, population densities average 35,000 per square kilometer.

Japan's population is also overwhelmingly coastal. Japan transformed itself from a largely rural and noncoastal nation into an overwhelmingly urban and coastal country within two decades. In 1950, Japan's 83 million inhabitants were dispersed throughout the country, with nearly half living in farming households. By 1970, most Japanese were living in urban areas, the majority of them in the Pacific Coastal Belt, which extends from Tokyo southwest through the Seto Inland Sea to the northern part of the island of Kyushu. As early as 1970, the national census revealed that over 53% of the population lived in densely inhabited districts that occupy 1.7% of the country's land area. Population densities in this crowded region average over 11,500 per square kilometer.

In 1997, Japan's total population amounted to 126 million. Of this, nearly 80% or 100 million, are considered coastal. But no one in Japan lives more than 120 kilometers from the sea. Furthermore, 77% of all Japanese live in urban areas along or near the coast. The dramatic shift has left much of the interior drained of workers. Nearly 47% of Japan's land area, mostly in the interior, is now designated as "depopulated" and eligible for special funding.

The population of Latin America and the Caribbean is even more littoral. The region's coastal states have a collective population of around 610 million, a full three-quarters of whom live within 200 kilometers of a coast.

The majority of the Caribbean Basin's 200 million permanent residents (including over 20 million people living in 99 coastal counties along the U.S. Gulf Coast) live on or near the seashore. The resident population is swelled every year by the influx of some 100 million tourists, nearly all of whom end up on the region's beaches.

Consider the following trends:

- On South America's crowded west coast, some 40 million people crowd along thin coastal strips. In Chile, three-quarters of the population live and work along a 500-kilometer stretch of coastline between Valparaiso and Concepcion, on 15% of the country's land area.

- The east coast is even more crowded. Some 15 million people live in the Buenos Aires-La Plata-Montevideo region.

- The largest and most crowded coastal area by far is the highly urbanized region stretching from Sao Paulo to Rio de Janeiro, Brazil. This area already bulges with 30 million people. If trends continue, it is expected to hold 40 million or more inhabitants by 2010.

Of all the continents except the Antarctic, only Africa has more people living in the interior than along or near coastlines and major river valleys. But even here, demographic patterns are shifting. Over the past two decades, Africa's coastal cities — centers of trade and commerce —have been growing by 4% a year or more, drawing people inexorably out of the countryside. Cities such as Lagos, Mombasa, Dar es Salaam, Accra, Abidjan and Dakar have seen their populations explode from in-migration.

Europe and North America

The forces at work in the developing world also account, in large measure, for the explosion of coastal towns and cities in the industrialized countries of Europe and North America. Historic patterns of economic development that fueled the first industrial revolution and transformed coastal cities into international centers of trade and commerce have been augmented since the end of the Second World War by a massive population shift from the hinterlands to coastal areas. Millions of middle class families now have significantly more disposable income and more leisure time to enjoy the fruits of their labors. Seacoasts, with their boundless economic opportunities and better quality of life, increasingly are viewed as preferred places to live, work, play, and retire.

One of the most celebrated and threatened coastlines in the world is the Mediterranean. Here, north and south meet, with all the tensions such a confluence cultivates. According to demographic projections worked out by the Mediterranean Blue Plan, the socioeconomic part of the Mediterranean Action Plan that links the protection of the environment with various levels of development, the Mediterranean Basin's resident population could go as high as 555 million by 2025. Also, according to Blue Plan projections, the urban population of coastal Mediterranean administrative regions could reach 176 million — 30 million more people than the entire coastal population in 1990. Furthermore, depending on how tourism is developed in the future, the Mediterranean could be hosting up to 350 million seasonal tourists every year by 2025. At the same time, the number of the automobiles in the region's is expected to triple, causing serious air pollution problems in many urban areas.

Michel Batisse, president and chief architect of the Blue Plan and former assistant director-general for science at UNESCO, is convinced that the future of the region is in jeopardy. "While northern populations with declining fertility rates will become progressively older, the southern and eastern regions will be dominated by young people," points out Batisse. "The numbers arriving on the labor market will largely exceed those leaving it, with a maximum gap around 2020, creating considerable unemployment and probably spawning waves of migrants heading to Europe in search of work."

Batisse argues that these trends are likely to generate serious conflicts over dwindling resources in an increasingly polluted environment. This will be especially true for water availability, as well as mounting land use conflicts, traffic congestion, destruction of wetlands, soil erosion, and continued pollution of coastal waters.

"In all the scenarios we developed for the southern and eastern rim countries, their development problems are aggravated by rapid, pell-mell urbanization," notes Batisse. "The greatest concentration of people will continue to be in the narrow, mountain-lined coastal strips characteristic of the region."

In the United States, 55-60% of Americans now live in 772 counties adjacent to the Atlantic and Pacific Oceans, the Gulf of Mexico, and the Great Lakes. The Washington D.C.-based Population Reference Bureau reports that between 1960 and 1990 coastal population density in the United States increased from an average of 275 to nearly 400 people per square kilometer. In 1990, the most crowded coastline in the United States, stretching from Boston south through New York and Philadelphia to Baltimore and Washington D.C., had over 2,500 people per square

kilometer. Another 101 coastal counties had population densities exceeding 1,250 per square kilometer.

Florida, which is almost entirely coastal, is projected to have more than 16 million residents by 2010, an increase of over 200% from its 1960 level of 5 million. South Florida, which had a 1990 population of 6.3 million, is expected to have 15 to 30 million people by 2050. Similar dramatic increases are projected for California and Texas.

The five states with the greatest rise in population are all coastal: California, Texas, Florida, Georgia, and Virginia. By the year 2025, nearly 75% of Americans are expected to live in coastal counties. These counties already contain 14 of the country's 20 largest conurbations.

Implications for Planning

What these demographic trends portend for the urban landscape and resource management are disturbing, to say the least. Most of the developing world lacks the capacity to manage current coastal population growth in any equitable fashion. Nor do most developing countries have the political motivation, expertise, or money to introduce comprehensive coastal management plans. At the same time, the developed world has not come to grips with the implications of these demographic and resource trends.

Now is the time to develop and introduce management plans that protect vital coastal ecosystems, while permitting economic growth and ensuring a better quality of life for all coastal dwellers. Continued denial of the problems will only make solutions harder to achieve.

References

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