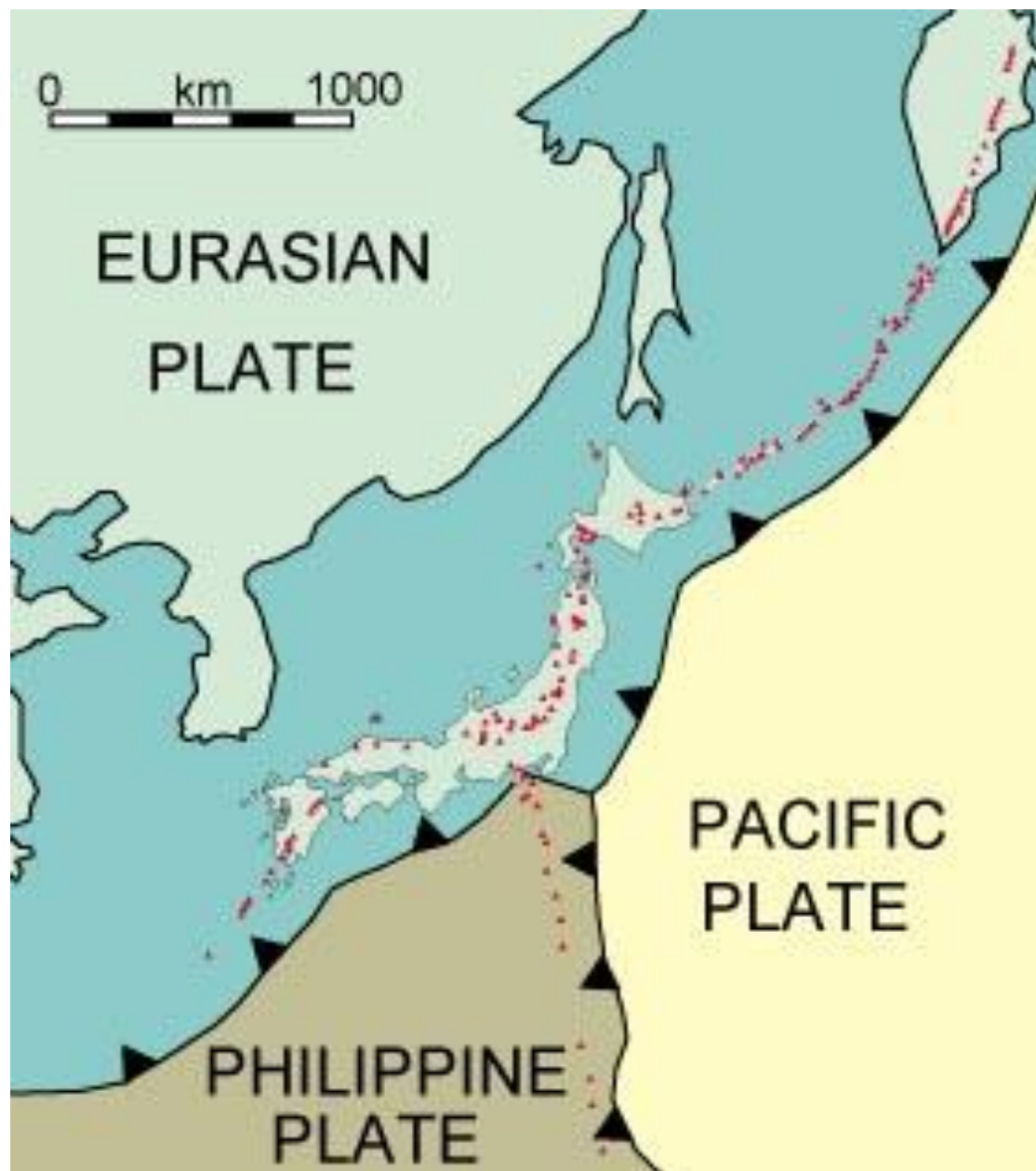
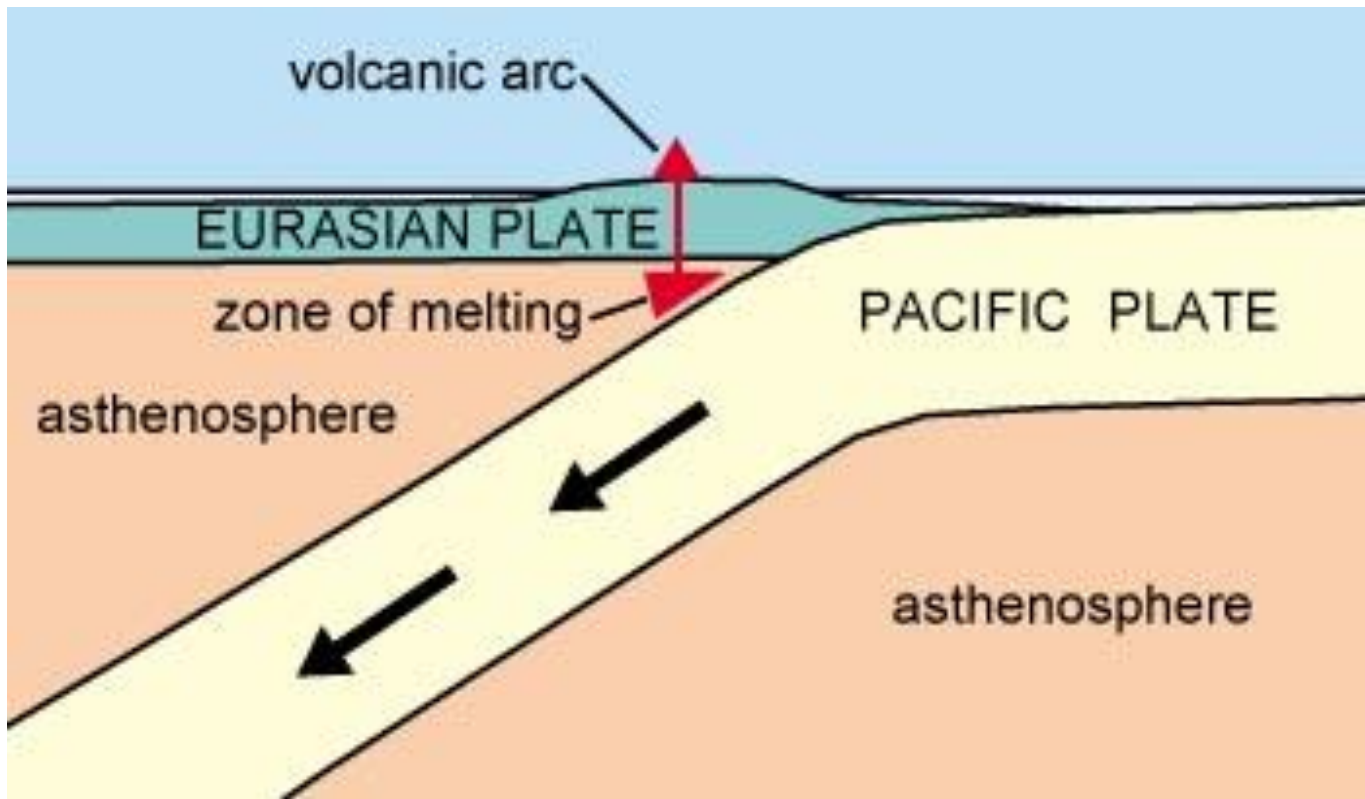


Seismicity of Japan, 1990 - 2006



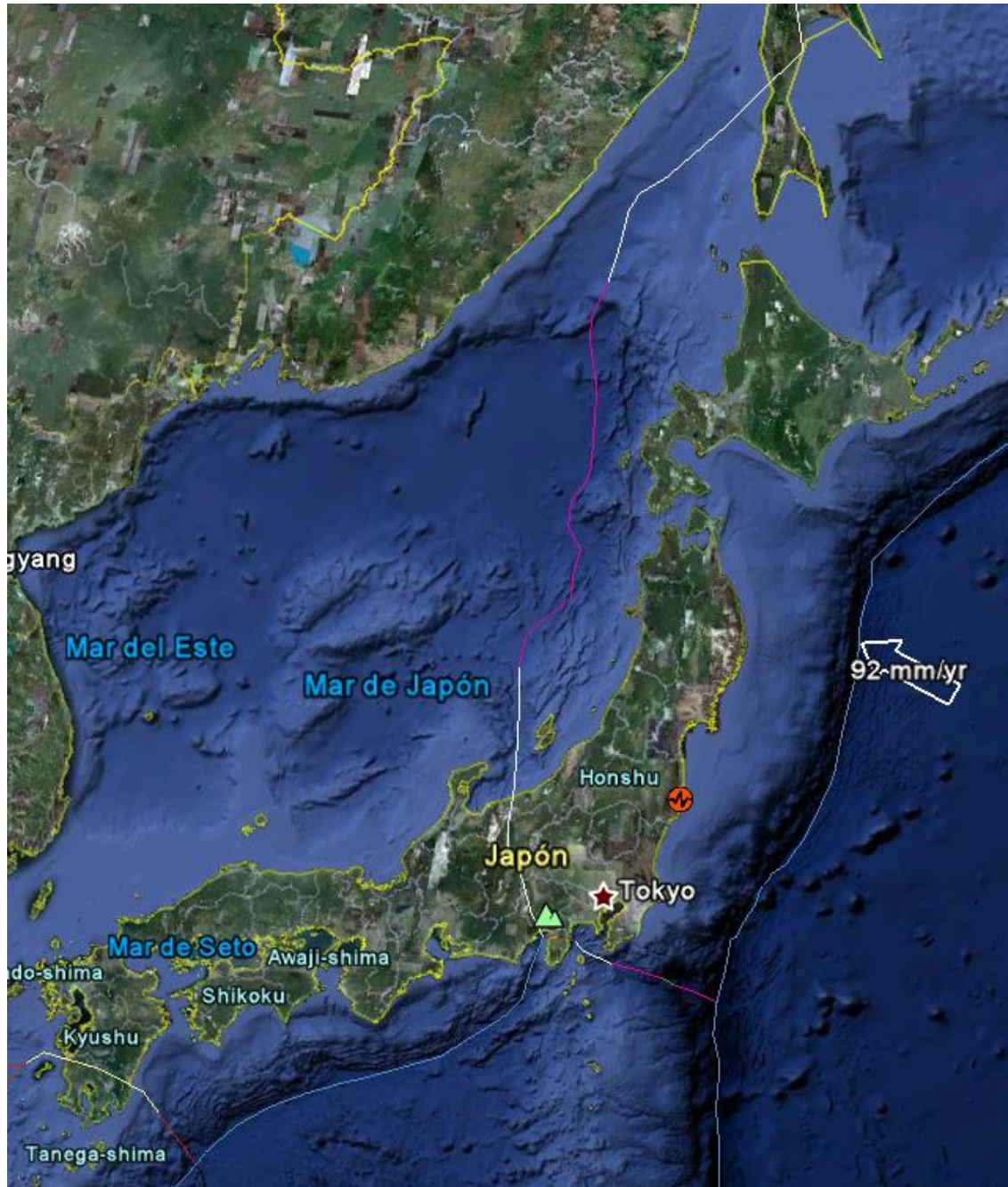
Cities affected in the 2011 earthquake





VOLCANES DE JAPÓN







Prefectura de Okinawa, Japón

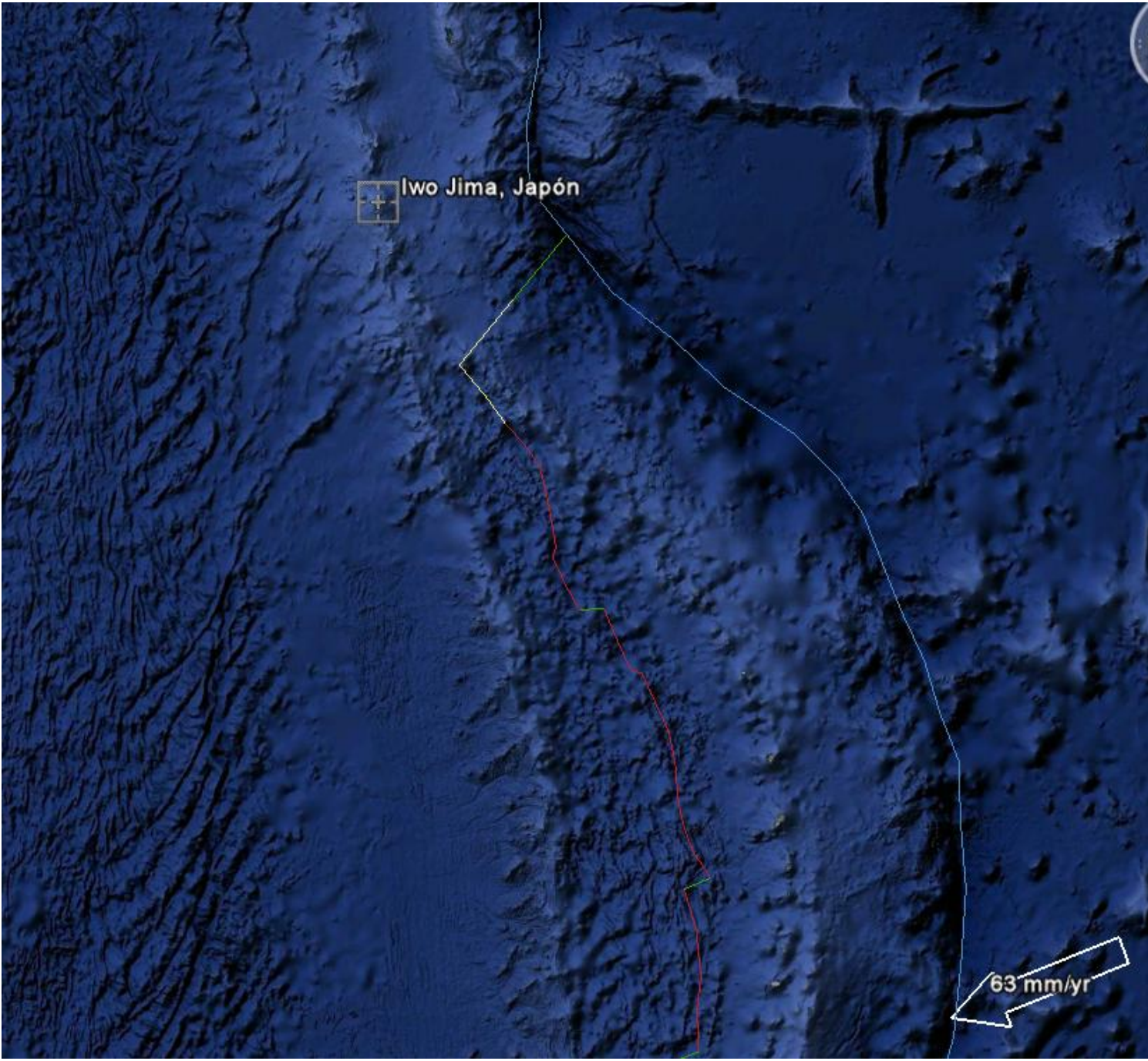
94 mm/yr



JAPÓN

INTRODUCCIÓN HISTORICA

- En 1603 tras décadas de guerra civil, el Tokugawa shogunado, aseguró un largo período de estabilidad política en un aislamiento total de la influencia extranjera. Durante dos siglos, la cultura tradicional japonesa fue la única referente.
- El tratado de Kanagawa con USA en 1854, inició la modernización y la industria.
- A finales del XIX e inicios del XX, Japón se transformó en una potencia regional entrando en guerra y venciendo a China y Rusia, ocupando Corea, Formosa y el Sur de Sajalin.
- En 1931 ocupó Manchuria y en 1937 inició una conquista de China en gran escala
- En 1941 atacó Pearl Harbour entrando así en la II GM. Ocupó una gran parte de Oceanía y Sudeste asiático.
- Tras la derrota en 1945 se implementó el sistema democrático, manteniendo al emperador.
- Dio comienzo un período que transformó a Japón en una gran potencia económica.



EL ARCHIPIÉLAGO JAPONÉS

- El país es un archipiélago de más de 3.000 islas e islotes.
- **Las cuatro islas principales son: Hokkaido, Honshu, Shikoku, and Kyushu**
- Ningún punto de Japón se encuentra a menos de 150 Km. del mar

JAPON OROGRAFIA II

<http://www.photius.com/countries>

- Las islas japonesas son las cumbres de cordilleras submarinas, generadas en la confluencia de las placas Euroasiática, Filipinas y Pacífico
- Aproximadamente un 75% de la superficie de Japón es montañosa, con algunas pocas llanuras y altiplanos. En este 25 % del territorio se concentra la mayor parte de la población de Japón.

JAPÓN

SUPERFICIE Y LIMITES

- La superficie total es de 377.800 km. 2, aproximadamente la misma extensión que Alemania.
- Debido a la orografía del territorio, solamente 125.000 km² son habitables.
- Al Norte limita con el mar de Ochosk; al Oeste con el Mar de Japón y el Estrecho de Corea. Al Este y al Sur, con el océano Pacífico.

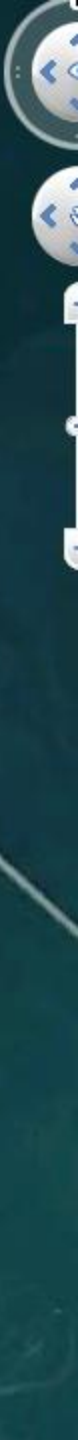
JAPON. INCREMENTO DEL TERRITORIO DESDE EL MAR

<http://www.photius.com/countries>

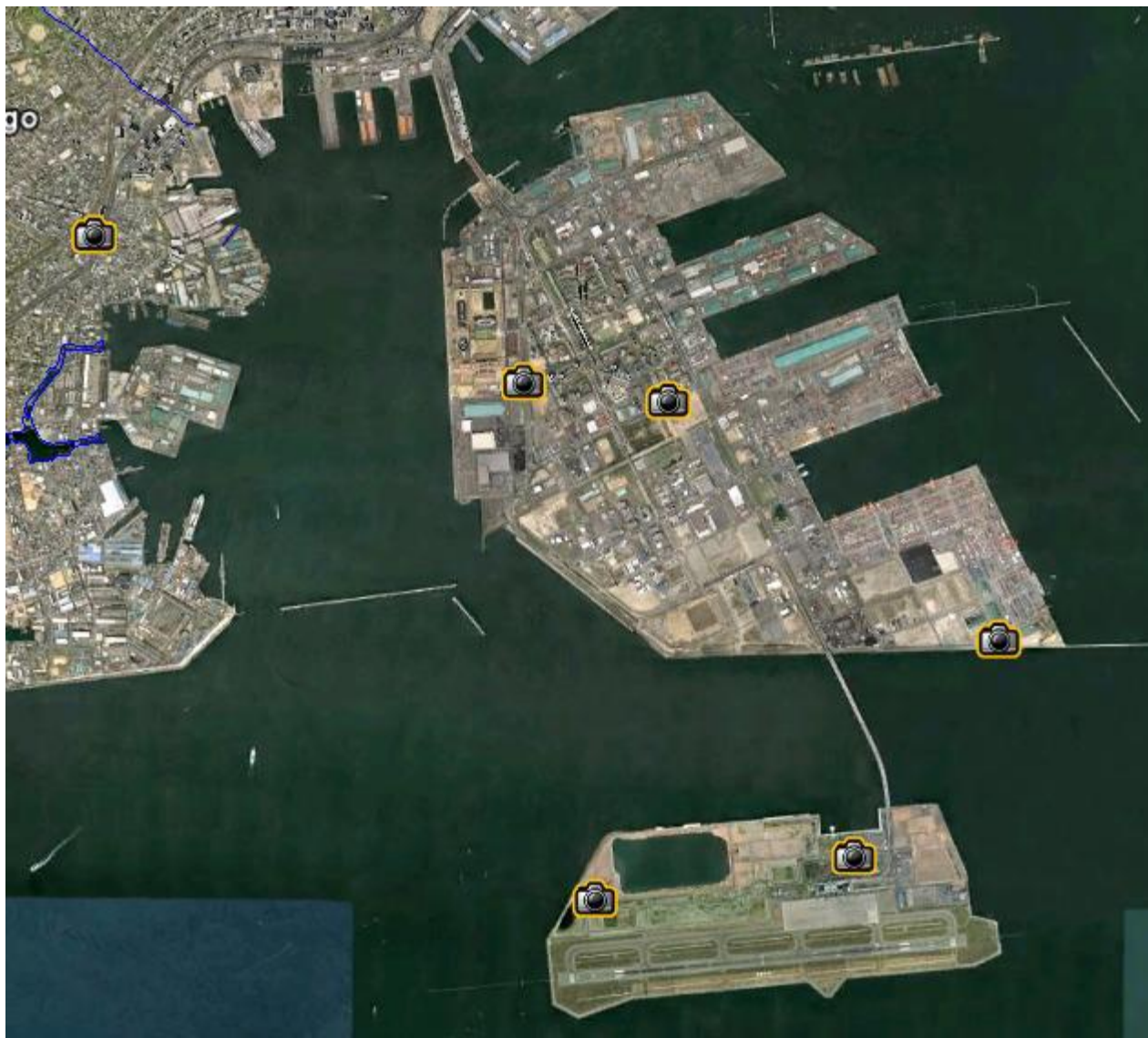
- La reducida extensión de la superficie habitable, ha conducido a una profunda modificación del terreno durante centurias. La tierra fue ganada al mar y los deltas de los ríos mediante diques y sistemas de drenaje. En las laderas de las montañas se construyeron terrazas de cultivo.
- El proceso continuó en épocas modernas, mediante la construcción de islas artificiales para el desarrollo de puertos e industrias. Ejemplos: el nuevo aeropuerto internacional de Kansai en la bahía de Osaka y la isla portuaria de Kobe.
- Colinas y hasta montañas, han sido arrasadas para proporcionar áreas de asentamientos urbanos.



Aeropuerto Internacional de Kansai

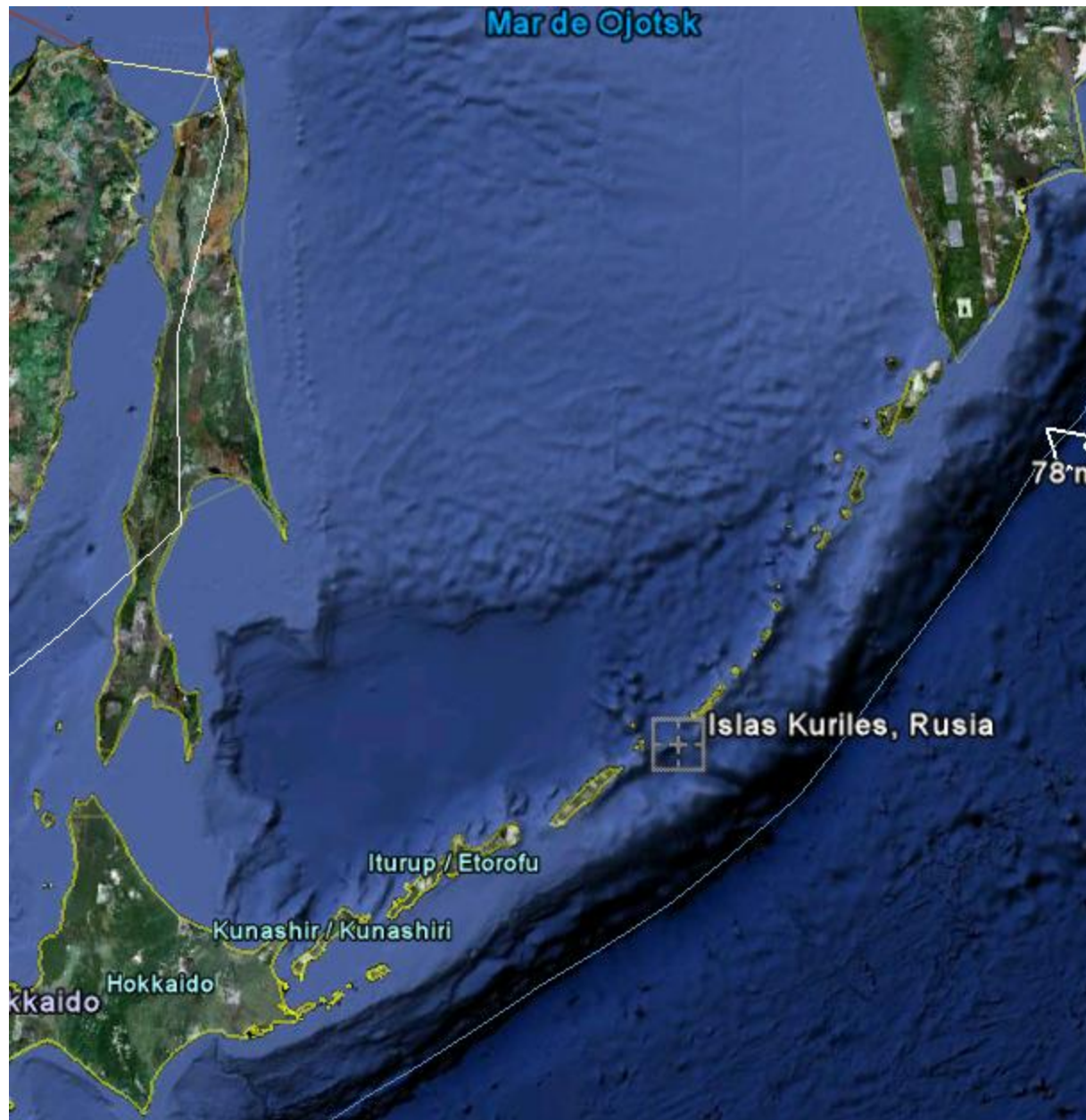


ISLA ARTIFICIAL EN KOBE-OSAKA



EL TERRITORIO NACIONAL JAPONÉS

- The national territory also includes the small Bonin Islands (called Ogasawara by the Japanese), Iwo Jima, and the Volcano Islands (Kazan Retto), stretching some 1,100 kilometers from the main islands.
- A territorial dispute with the Soviet Union, dating from the end of World War II, over the two southernmost of the Kuril Islands, Etorofu and Kunashiri, and the smaller Shikotan and Habomai Islands northeast of Hokkaido remained a sensitive spot in Japanese-Russian relations as the mid-1990s approached.
- Excluding disputed territory, the archipelago covers about 377,000 square kilometers..



JAPON. OROGRAFÍA

- The mountainous islands of the Japanese Archipelago form a crescent off the eastern coast of Asia.
- They are separated from the mainland by the Sea of Japan, which historically served as a protective barrier.
- Japan's insular nature, together with the compactness of its main territory and the cultural homogeneity of its people, enabled the nation to remain free of outside domination until its defeat in World War II

JAPON OROGRAFIA II

<http://www.photius.com/countries>

- A long chain of mountains runs down the middle of the archipelago, dividing it into two halves, the "face," fronting on the Pacific Ocean, and the "back," toward the Sea of Japan. On the Pacific side are steep mountains 1,500 to 3,000 meters high, with deep valleys and gorges. Central Japan is marked by the convergence of the three mountain chains--the Hida, Kiso, and Akaishi mountains--that form the Japanese Alps (Nihon Arupusu), several of whose peaks are higher than 3,000 meters.
- The highest point in the country is Mount Fuji (Fujisan, also called Fujiyama in the West but not in Japan), a volcano dormant since 1707 that rises to 3,776 meters above sea level in Shizuoka Prefecture. On the Sea of Japan side are plateaus and low mountain districts, with altitudes of 500 to 1,500 meters.

JAPON OROGRAFIA III

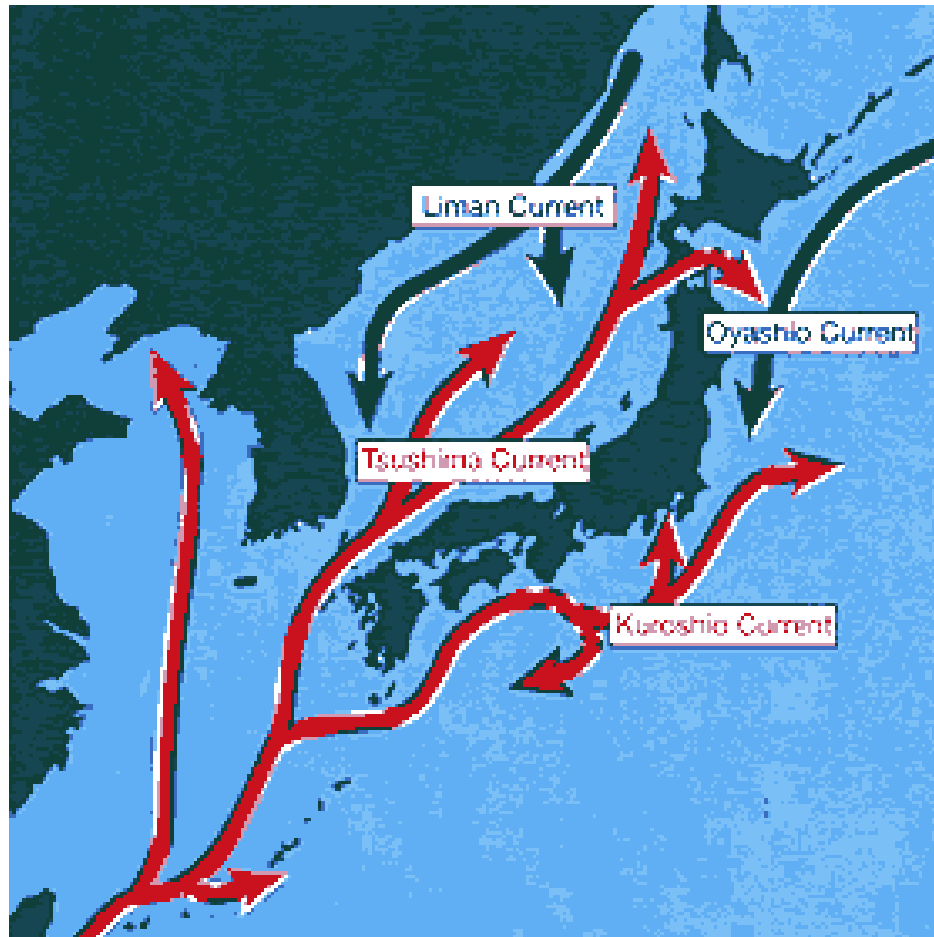
<http://www.photius.com/countries>

- None of the populated plains or mountain basins is extensive in area. The largest, the Kanto Plain, where Tokyo is situated, covers only 13,000 square kilometers.
- Other important plains are the Nobi Plain surrounding Nagoya, the Kinki Plain in the Osaka-Kyoto area, the Sendai Plain around the city of Sendai in northeastern Honshu, and the Ishikari Plain on Hokkaido.
- Many of these plains are along the coast, and their areas have been increased by reclamation throughout recorded history.

CLIMA DE JAPON I

- Japon es un país lluvioso con elevada humedad.
- Debido a su diferencia en latitud tiene una gran variedad de climas.
- The generally humid, temperate climate exhibits marked seasonal variation, as well as regional variations ranging from cool in Hokkaido to subtropical in Kyushu.
- Climate also varies with altitude and with location on the Pacific Ocean or on the Sea of Japan.
- Northern Japan has warm summers but long, cold winters with heavy snow. Central Japan has hot, humid summers and short winters, and southwestern Japan has long, hot, humid summers and mild winters.

OYASHIO CURRENT



CLIMA DE JAPÓN II

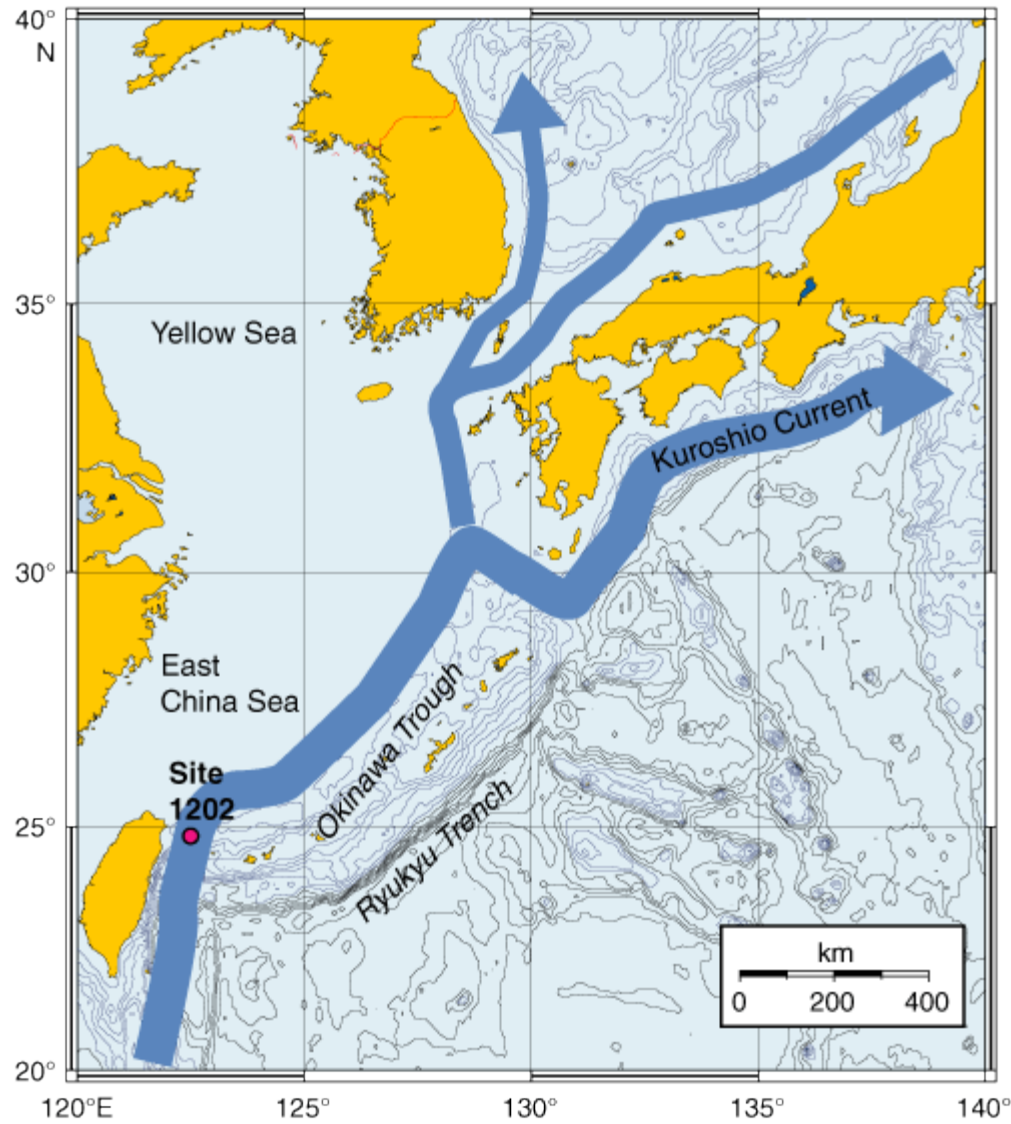
- **Two primary factors** influence Japan's climate: A **location near the Asian** continent and the existence of **major oceanic currents**.
- The climate from June to September is marked by hot, wet weather brought by tropical airflows from the Pacific Ocean and Southeast Asia. These airflows are full of moisture and deposit substantial amounts of rain when they reach land. There is a marked rainy season, beginning in early June and continuing for about a month. It is followed by hot, sticky weather.
- **Five or six typhoons** pass over or near Japan every year from early August to early September, sometimes resulting in significant damage.
- **Annual precipitation**, which averages between 1000 and 2000 mm., is concentrated in the period between June and September. In fact, 70 to 80 percent of the annual precipitation falls during this period.
- **In winter**, a **high-pressure** area **develops over Siberia**, and a low-pressure area develops over the northern Pacific Ocean. The result is a flow of cold air eastward across Japan that brings freezing temperatures and heavy snowfalls to the central mountain ranges facing the Sea of Japan.

JAPON

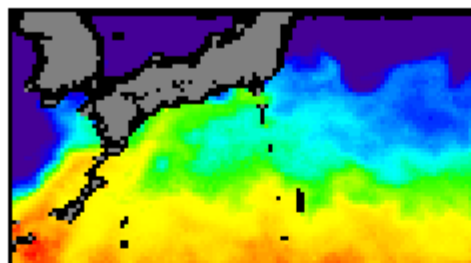
CORRIENTES OCEÁNICAS

- Two major ocean currents affect this climatic pattern: the warm Kuroshio Current (Black Current; also known as the Japan Current); and the cold Oyashio Current (Parent Current; also known as the Okhotsk Current). The Kuroshio Current flows northward on the Pacific side of Japan and warms areas as far north as Tokyo; a small branch, the Tsushima Current, flows up the Sea of Japan side.
- The Oyashio Current, which abounds in plankton beneficial to coldwater fish, flows southward along the northern Pacific, cooling adjacent coastal areas. The meeting point of these currents at 36 north latitude is a bountiful fishing ground.

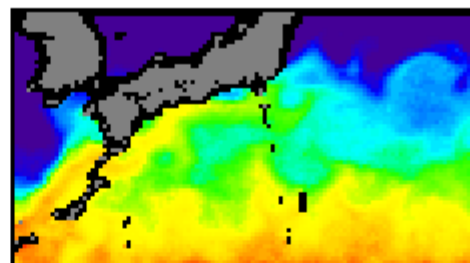
KUROSHIO CURRENT



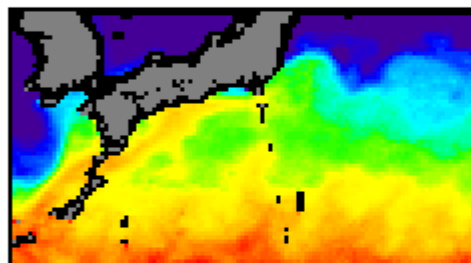
Kuroshio Current, Spring 1998



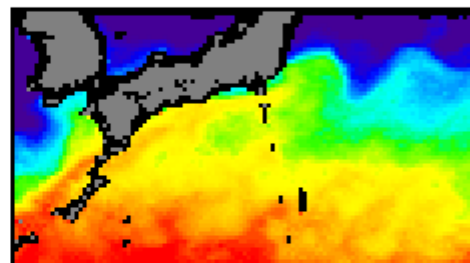
Week Ending 4/18/98



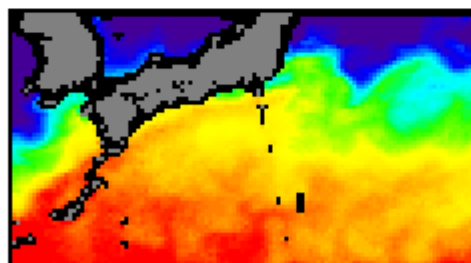
Week Ending 4/25/98



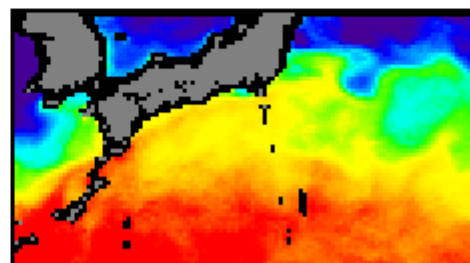
Week Ending 5/2/98



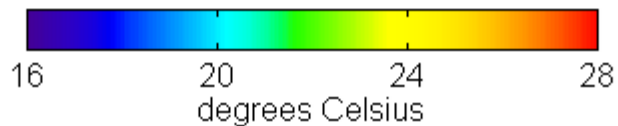
Week Ending 5/9/98



Week Ending 5/16/98



Week Ending 5/23/98

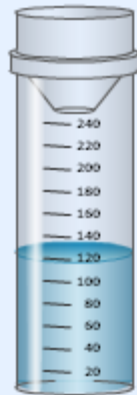


Kuroshio Curren

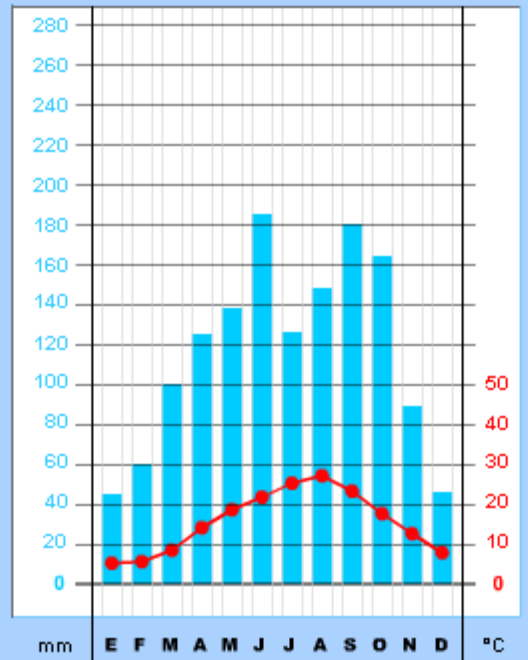
Tokyo (Japón)

Altitud: 36 m
 Latitud: 35° 41' N
 Longitud: 139° 46' E

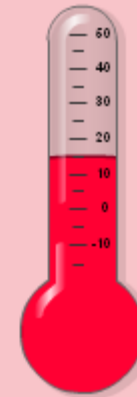
Precipitación total anual
1406 mm



117.2 mm
 Precipitación media mensual



Amplitud térmica
21.9 °C



15.6 °C
 Temperatura media anual

MEDIAS MENSUALES

Precipitación (mm)

Temperatura (°C)

ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC
45	60	100	125	138	185	127	148	130	144	89	44
5.2	5.4	8.5	14.1	18.4	21.7	25.2	27.1	23.2	17.4	12.4	7.9

Yokohama (Japón)

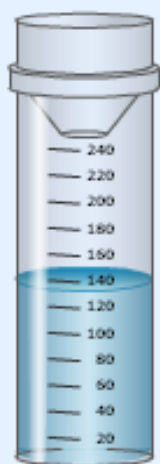
Altitud: 42 m

Latitud: 35° 26' N

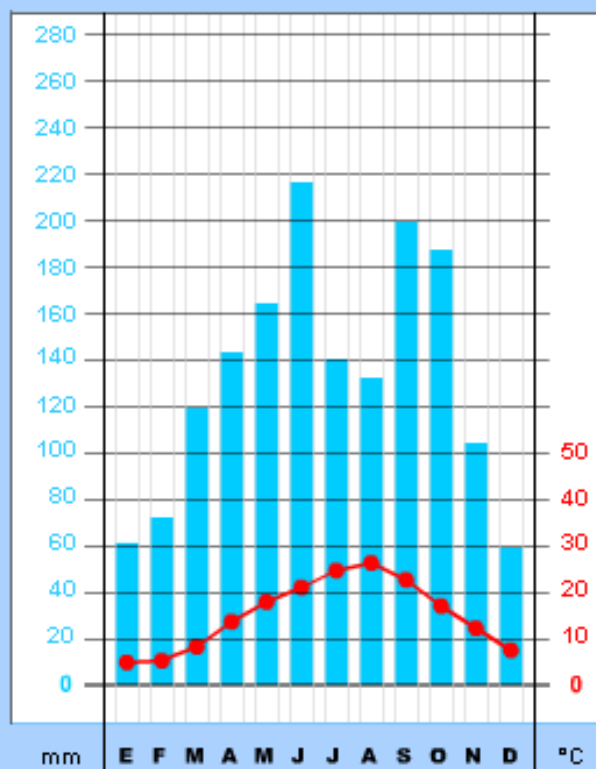
Longitud: 139° 39' E

Precipitación total anual

1596 mm

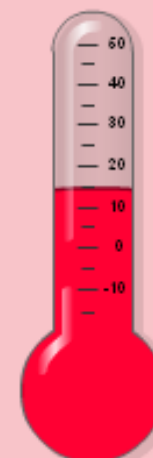


133 mm
Precipitación media mensual



Amplitud térmica

21.3 °C



15.1 °C
Temperatura media anual

MEDIAS MENSUALES

Precipitación (mm)

Temperatura (°C)

ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC
61	72	119	143	164	214	140	132	199	187	104	59
+9	+3	+2	+13.4	+17.9	+21.0	+24.4	+24.2	+22.4	+17.0	+12.2	+7.5

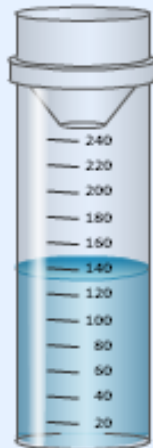
Kyoto (Japón)

Altitud: 46 m

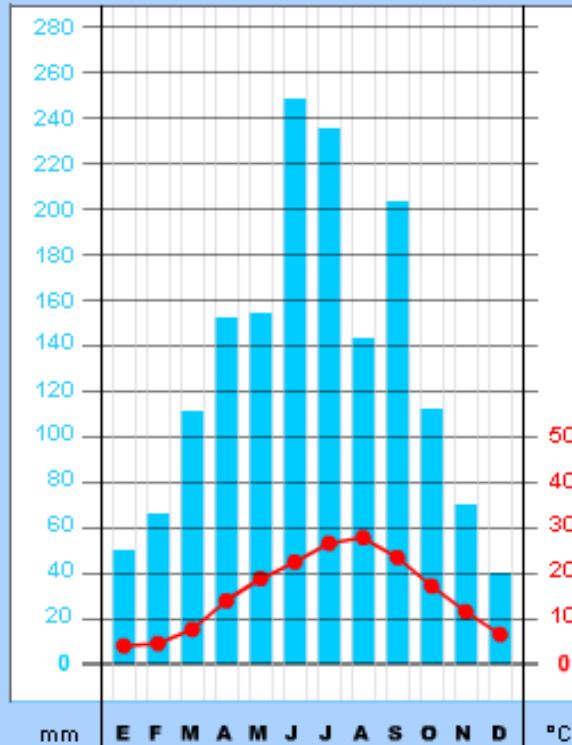
Latitud: 35° 01' N

Longitud: 135° 44' E

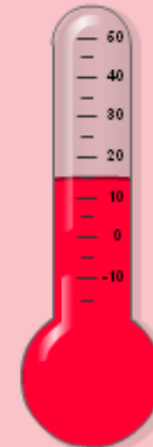
Precipitación total anual
1584 mm



132 mm
Precipitación media mensual



Amplitud térmica
23.7 °C



15.3 °C
Temperatura media anual

MEDIAS MENSUALES

Precipitación (mm)

Temperatura (°C)

ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC
50	66	111	152	154	248	235	143	203	112	70	40
+0	+3	+7.4	+13.9	+16.7	+22.4	+24.5	+27.7	+23.4	+17.1	+11.5	+3

RIOS JAPONESES

<http://www.photius.com/countries>

- Rivers are generally steep and swift, and few are suitable for navigation except in their lower reaches. Most rivers are fewer than 300 kilometers in length, but their rapid flow from the mountains provides a valuable, renewable resource: hydroelectric power generation. Japan's hydroelectric power potential has been exploited almost to capacity.
- Seasonal variations in flow have led to extensive development of flood control measures. Most of the rivers are very short. The longest, the Shinano, which winds through Nagano Prefecture to Niigata Prefecture and flows into the Sea of Japan, is only 367 kilometers long. The largest freshwater lake is Lake Biwa, northeast of Kyoto.

POBLACIÓN JAPÓN

- With a population estimated at 124.7 million in July 1993, Japan is three times more densely populated than Europe as a whole and twelve times more densely populated than the United States.
- The population has more than tripled since 1872, when it stood at 34.8 million. Beginning in the 1950s, the birth rate declined, however, and by 1993 the rate of natural increase was 0.32 percent, the lowest in the world outside Europe.
- Both the density and the age structure of Japan's population are likely to influence the country's future.

Japan

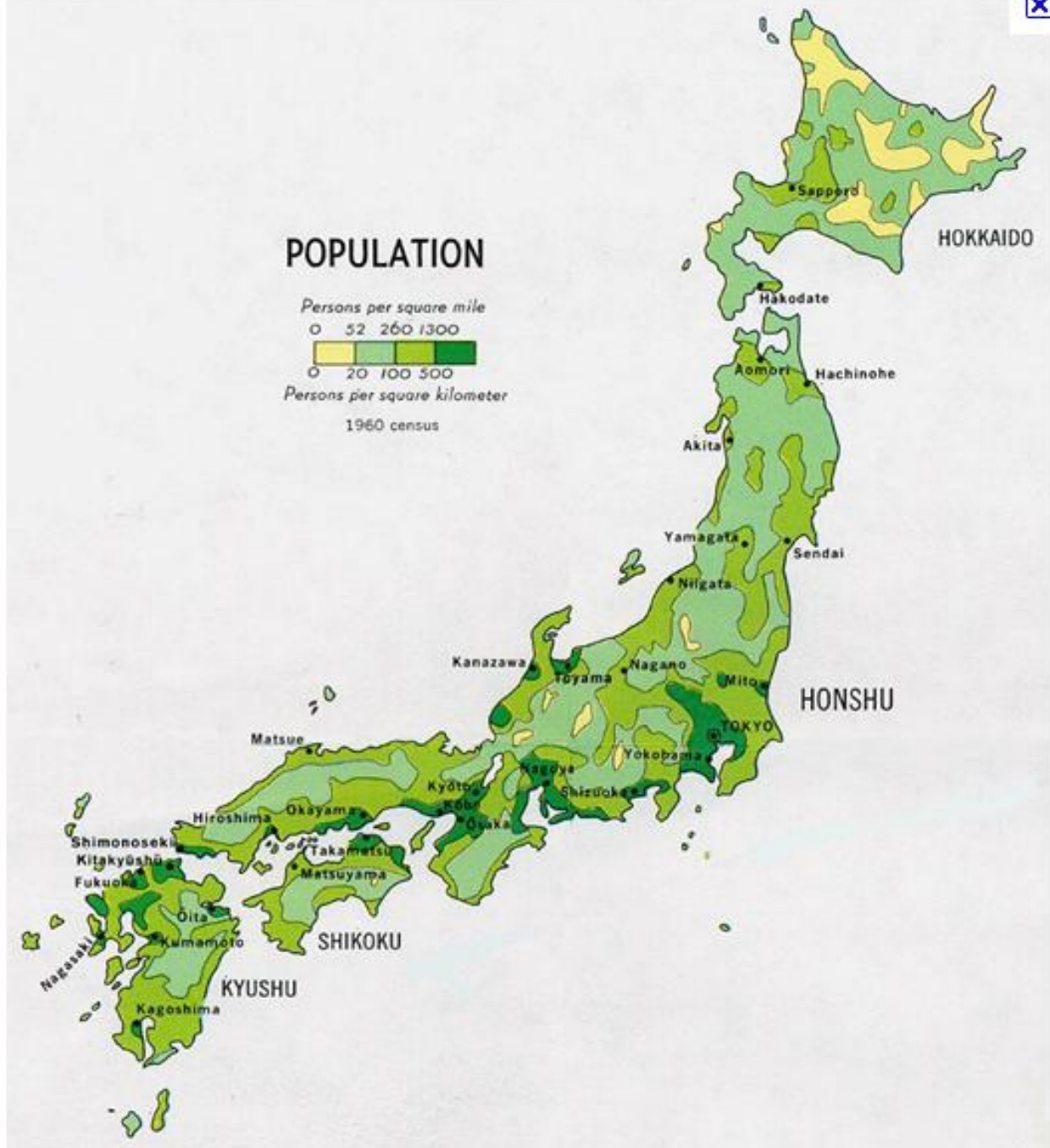
Demographic Indicators	2011	1995	2005	2015	2025
Population					
Midyear population (in thousands)	126,476	125,341	127,537	124,719	117,816
Growth rate (percent)	-0.3	0.2	0.0	-0.4	-0.7
Fertility					
Total fertility rate (births per woman)	1.2	1.4	1.3	1.3	1.4
Crude birth rate (per 1,000 population)	7	10	8	7	7
Births (in thousands)	925	1,207	1,083	864	799
Mortality					
Life expectancy at birth (years)	82	80	82	83	83
Infant mortality rate (per 1,000 births)	3	4	3	3	3
Under 5 mortality rate (per 1,000 births)	4	6	4	4	3
Crude death rate (per 1,000 population)	10	7	8	11	14
Deaths (in thousands)	1,276	926	1,076	1,389	1,615
Migration					
Net migration rate (per 1,000 population)	0	0	0	0	0
Net number of migrants (in thousands)	0	0	0	0	0

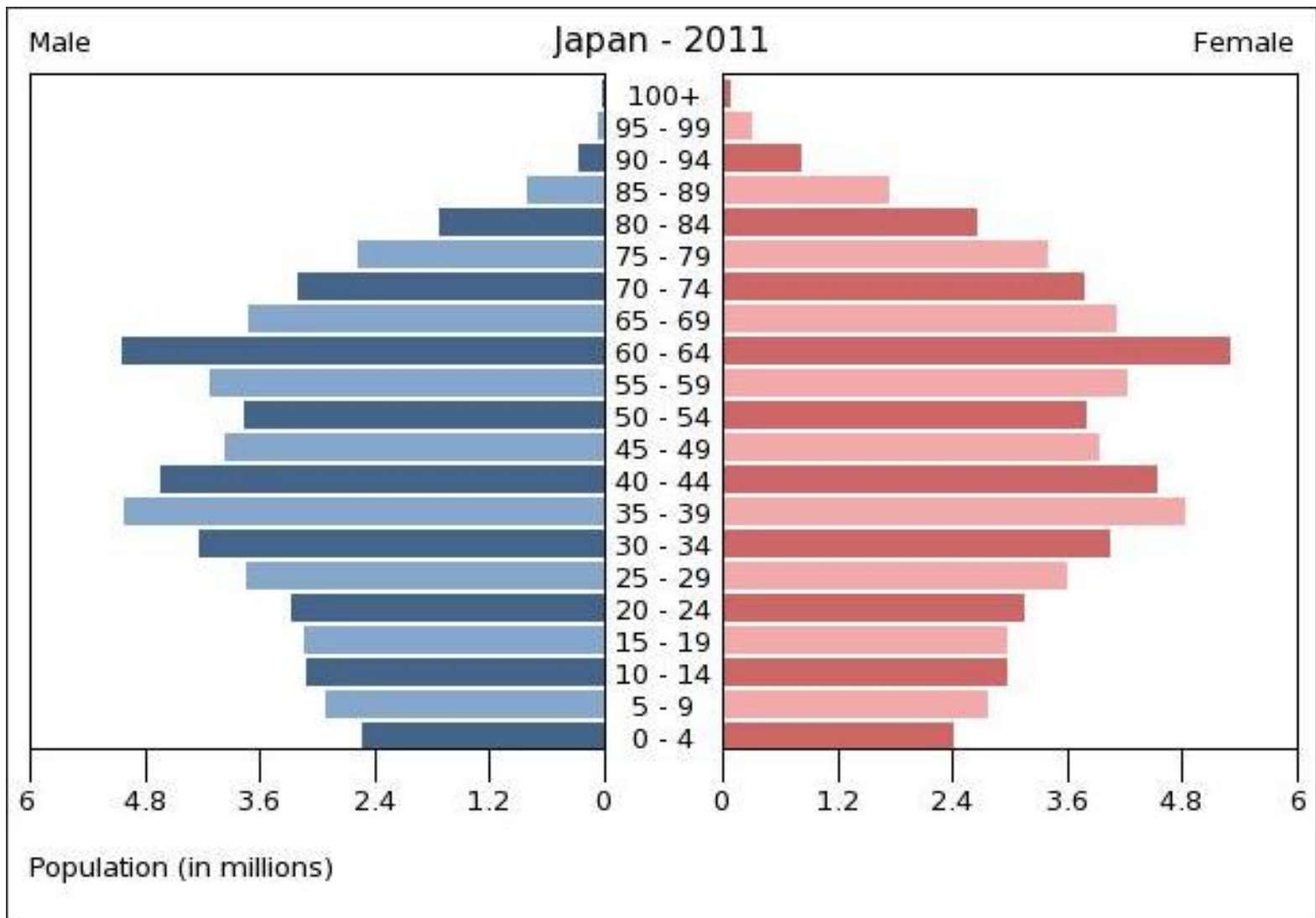
Source: [U.S. Census Bureau, International Data Base](#).



POPULATION

Persons per square mile
0 52 260 1300
Persons per square kilometer
0 20 100 500
1960 census

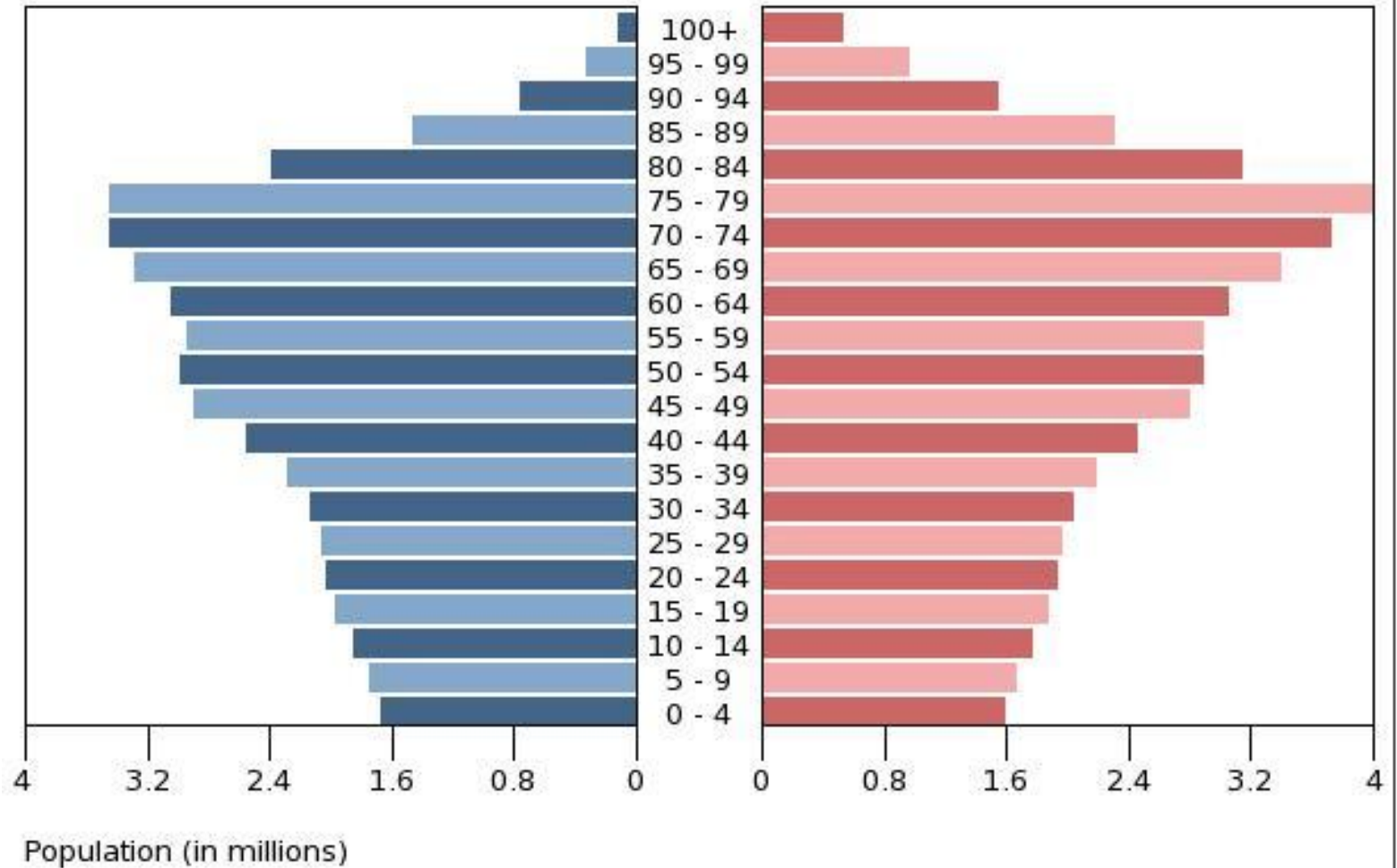




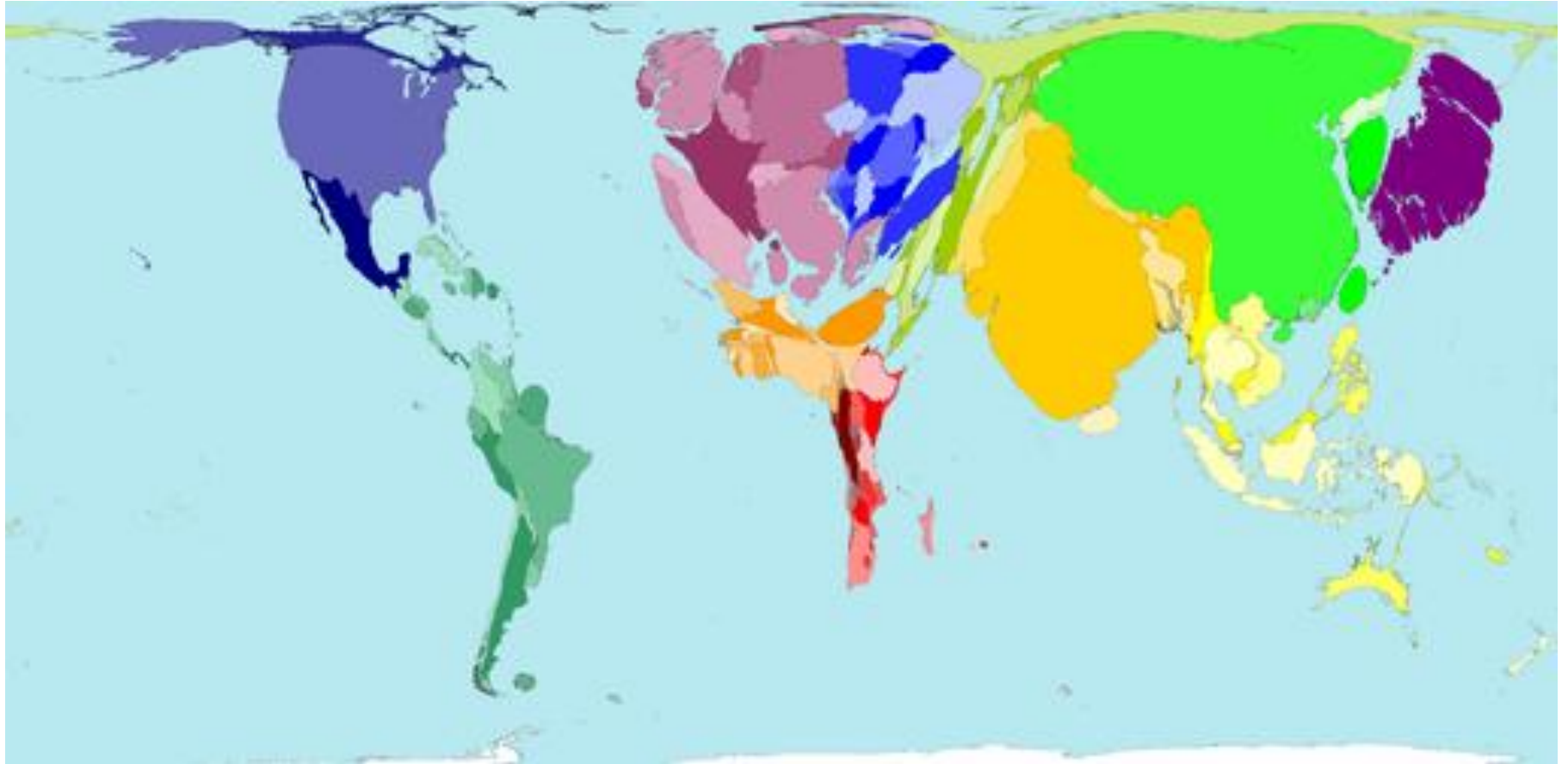
Male

Japan - 2050

Female



Demografía TOTAL POBLACION ANCIANA 2006



DENSIDAD DE POBLACIÓN

- Japan had an average of 327 persons per square kilometer in 1990, high compared with China (119) or the United States (twentyseven), but lower than in some other Asian countries, such as the Republic of Korea (South Korea), which had 432 people per square kilometer.
- Japan's population density has helped promote extremely high land prices. Between 1955 and 1989, land prices in the six largest cities increased 15,456 percent. Urban land prices generally increased 40 percent from 1980 to 1987; in the six largest cities, the price of land doubled over that period. For many families, this trend put housing in central cities out of reach. The result was lengthy commutes for many workers; daily commutes of up to two hours each way are not uncommon in the Tokyo area.

MIGRACION CIUDADES

- However, despite the high cost of urban housing, more people are likely to move back into central city areas, especially as the price of transportation and commuting time increases.
- National and regional governments devote resources to making regional cities and rural areas more attractive by developing transportation networks, social services, industry, and education institutions in attempts to decentralize settlement and improve the quality of life.
- Nevertheless, major cities, especially Tokyo, remain attractive to young people seeking education and jobs.

CONURBACION

- **Nagoya-Osaka-Kyoto-Kobe en Japón, que probablemente albergará una población de 60 millones para 2015.**
- **Perhaps the least well known of the world's largest urbanized areas is Osaka-Kobe-Kyoto.**
- **It is the world's sixth largest urban area and has three legitimate centers that grew together during the 20th century.**

OSAKA-KOBE-KYOTO: INCONSPICUOUS, DIVERSE GIANT

FAST FACTS		Similar To
Metropolitan (Labor Market) Population**	18,400,000	Sao Paulo, Mexico City
Urbanized Area* Population	15,450,000	Sao Paulo, Seoul
Urbanized Land Area: Square Miles	1,050	Paris, Minneapolis-St. Paul, Buenos Aires
Urbanized Land Area: Square Kilometers	2,720	
Population per Square Mile	14,700	Lisbon, Amsterdam, Munich, Santiago
Population per Square Kilometer	5,700	
2 nd largest urbanized area in Japan 6 th largest urbanized area in the world.		
*Continuously built up area		
**Hyogo, Kyoto, Nara and Osaka prefectures.		

03 October 2003

CONURBACIÓN OSAKA-KOBE-KIOTO

Population from 1920

Year	Osaka-Kobe-Kyoto	Annual % Change	Osaka Pref.	Hyogo Pref.	Kyoto Pref.
1920	6,177,000	0.00%	2,588,000	2,302,000	1,287,000
1925	6,921,000	2.30%	3,060,000	2,455,000	1,406,000
1930	7,739,000	2.26%	3,540,000	2,646,000	1,553,000
1935	8,923,000	2.89%	4,297,000	2,923,000	1,703,000
1940	9,744,000	1.78%	4,793,000	3,221,000	1,730,000
1945	7,227,000	-5.80%	2,801,000	2,822,000	1,604,000
1950	9,000,000	4.49%	3,857,000	3,310,000	1,833,000
1955	10,174,000	2.48%	4,618,000	3,621,000	1,935,000
1960	11,404,000	2.31%	5,505,000	3,906,000	1,993,000
1965	13,070,000	2.76%	6,657,000	4,310,000	2,103,000
1970	14,538,000	2.15%	7,620,000	4,668,000	2,250,000
1975	15,696,000	1.54%	8,279,000	4,992,000	2,425,000
1980	16,145,000	0.57%	8,473,000	5,145,000	2,527,000
1985	16,533,000	0.48%	8,668,000	5,278,000	2,587,000
1990	16,742,000	0.25%	8,735,000	5,405,000	2,602,000
1995	16,829,000	0.10%	8,797,000	5,402,000	2,630,000
2000	17,000,000	0.20%	8,805,000	5,551,000	2,644,000

Source: Japan Statistics Bureau and Statistics Center

Major Japan Urban Areas: Population & Density: 20000

	Area; Square Miles	Area: KM2	Population	Population/Square Mile	Population/KM2
Nagoya	1,090	2,823	8,050,000	7,385	2,851
Osaka-Kobe-Kyoto	1,050	2,720	15,450,000	14,714	5,681
Tokyo-Yokohama	2,030	5,258	31,200,000	15,369	5,934

Tokyo: 1920 Boundaries: Population & Density 1920-2000

1920 BOUNDARIES

Year	Population	Land Area: Square Miles	Population per Square Mile	Land Area: Square Kilometers	Population per Square Kilometer	Change
1920	2,163,000	30.64	70,601	79.35	27,259	0.0%
1930	1,995,000	30.64	65,117	79.35	25,142	-7.8%
1990	790,000	30.64	25,736	79.35	9,956	-63.5%
2000	775,000	30.64	25,296	79.35	9,767	-64.2%

Data from Japan Statistics Bureau. 2000 population estimated by Demographia Tokyo expanded October 1, 1932 to present 23 Ku (Ward) area. City abolished in 1940s.

JAPON

Densidad de la producción económica

Map G0.1 Density—why it pays to be close to Tokyo
Economic production per square kilometer in Japan



Source: WDR 2009 team and World Bank Development Research Group based on subnational GDP estimates for

GEOGRAFIA INDUSTRIAL DE JAPON

- Japan's manufacturing industries are spatially concentrated—a trend that can be traced to the Meiji era starting in the 1860s. In Tokyo both state-owned factories and private industrial complexes were concentrated along the main river.
- Gradually small machinery workshops conglomerated, and industries expanded toward the south along the new Tokaido railway connecting Tokyo, Yokohama, and areas farther south.

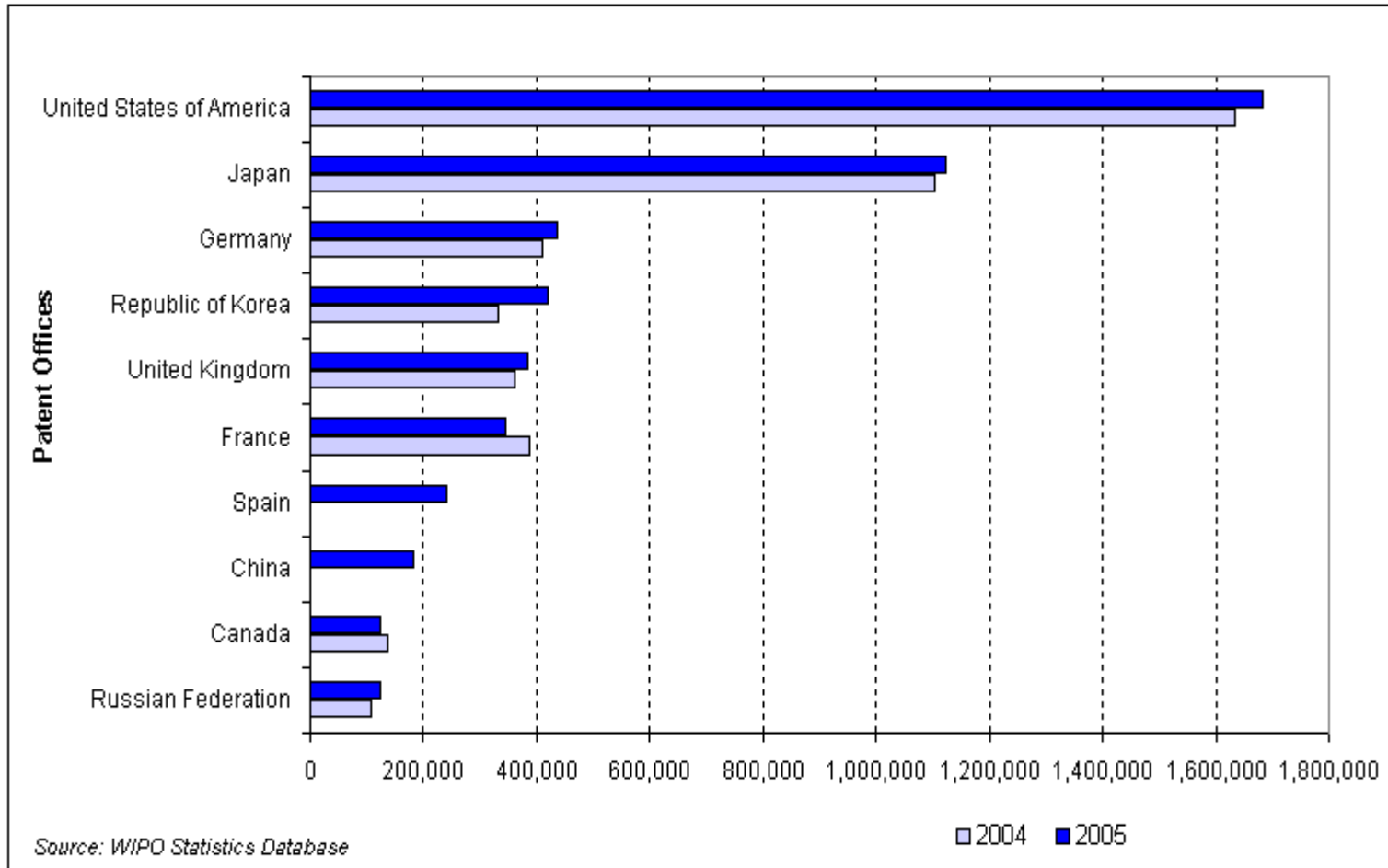
GEOGRAFIA INDUSTRIAL DE JAPON II

- After World War II, when exports to the United States began to accelerate, industrial production became concentrated in the Keihin industrial zone around Tokyo and Yokohama, and in the Hanshin industrial zone around Osaka and Kobe.
- This led to heavy traffic congestion, water shortages, and air and water pollution.

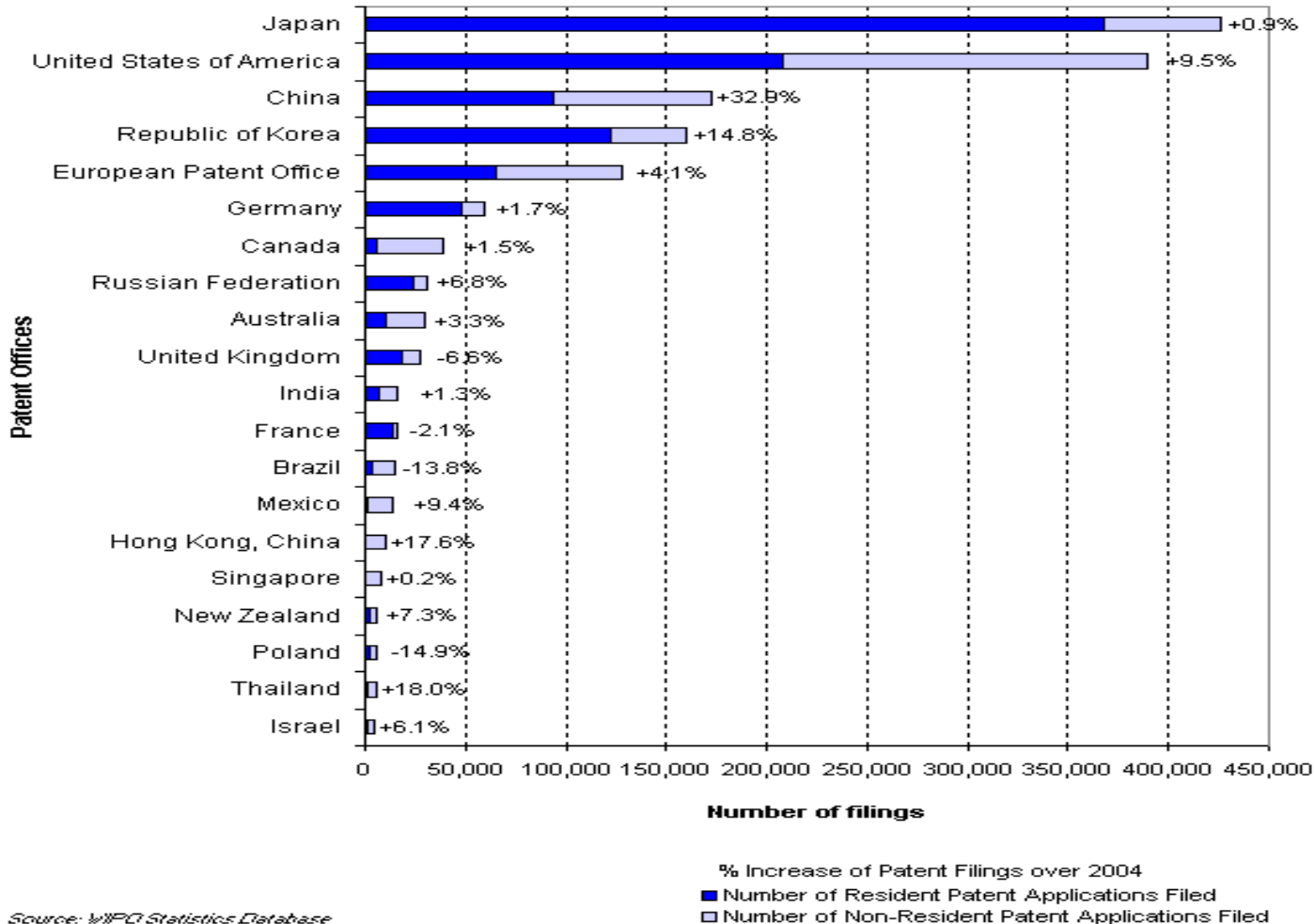
In 1962 the Japanese government responded by instituting *Zenso—the Integrated Spatial Development Plan*—which aggressively developed the Pacific Ocean Industrial Belt by linking the core agglomerated areas between Tokyo and Osaka and establishing new industrial zones in between.

- The investments included the bullet train (Shinkansen) and other trunk railways, expressways, and ports

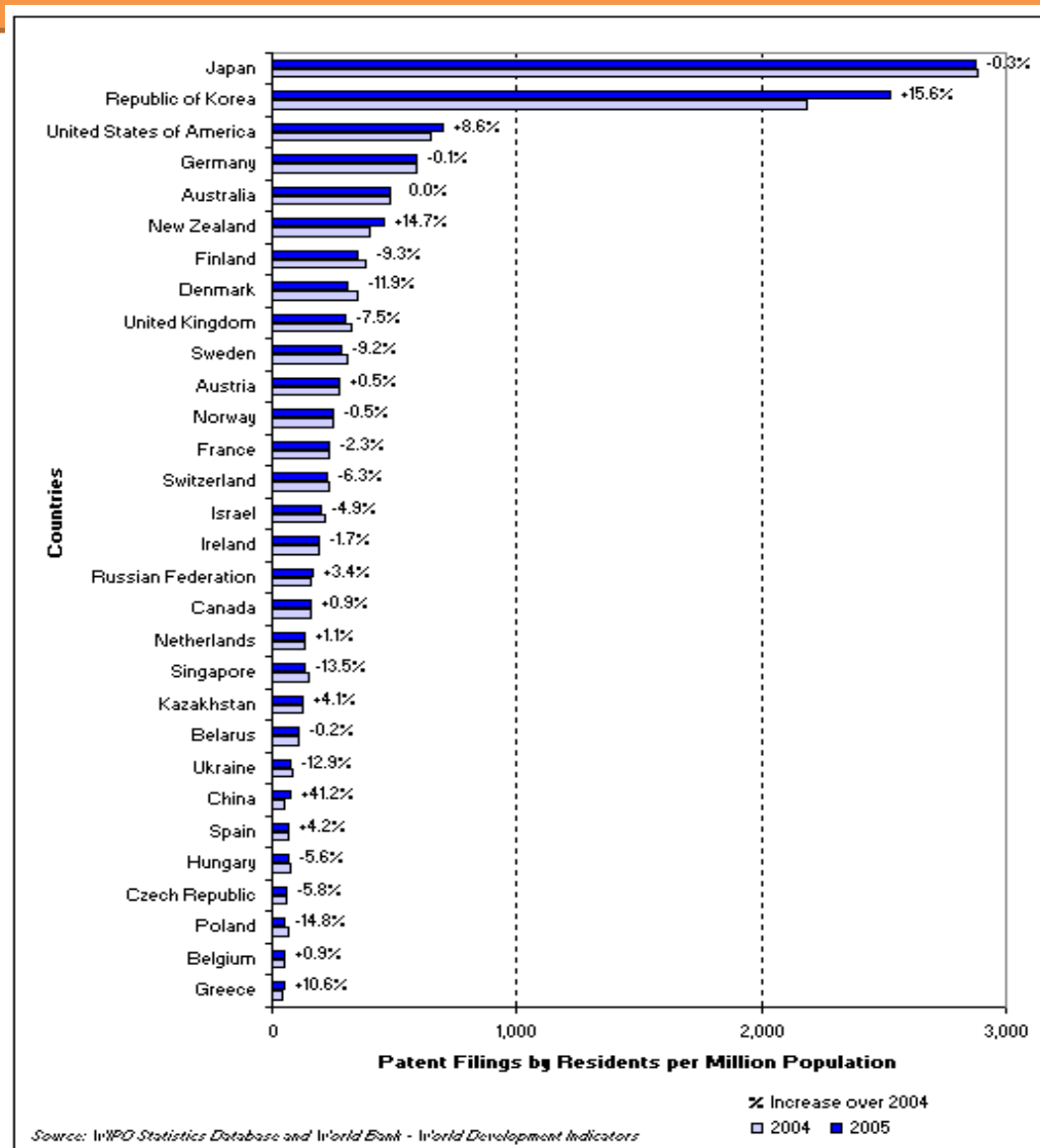
Número de patentes actualmente en vigor, por países y años 2004 y 2005



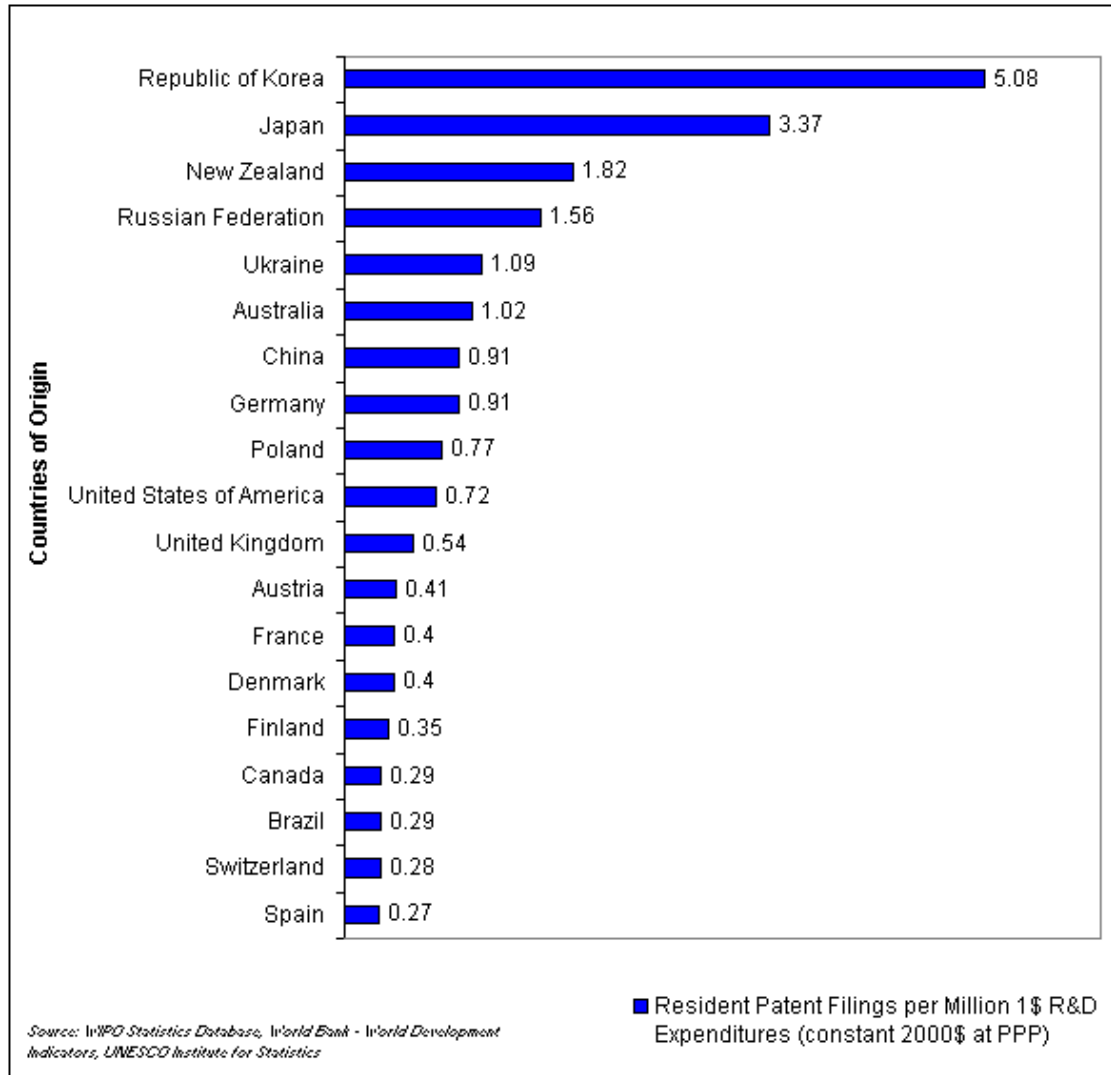
Ranking por oficinas de patentes y solicitudes año 2005



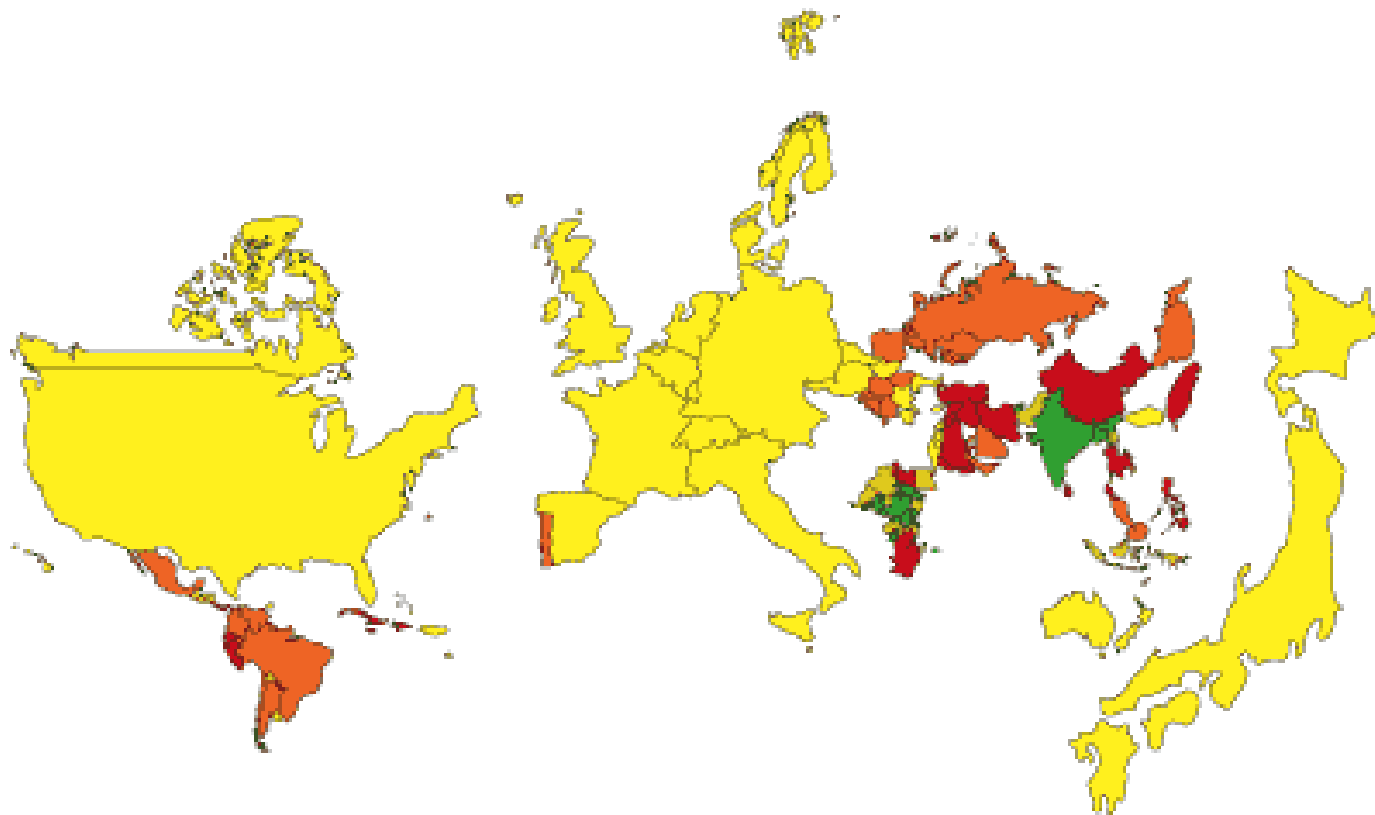
Solicitud de patentes por millón de habitantes 2006



Solicitudes de patentes por millón de dólares gastados en I+D por país 2006



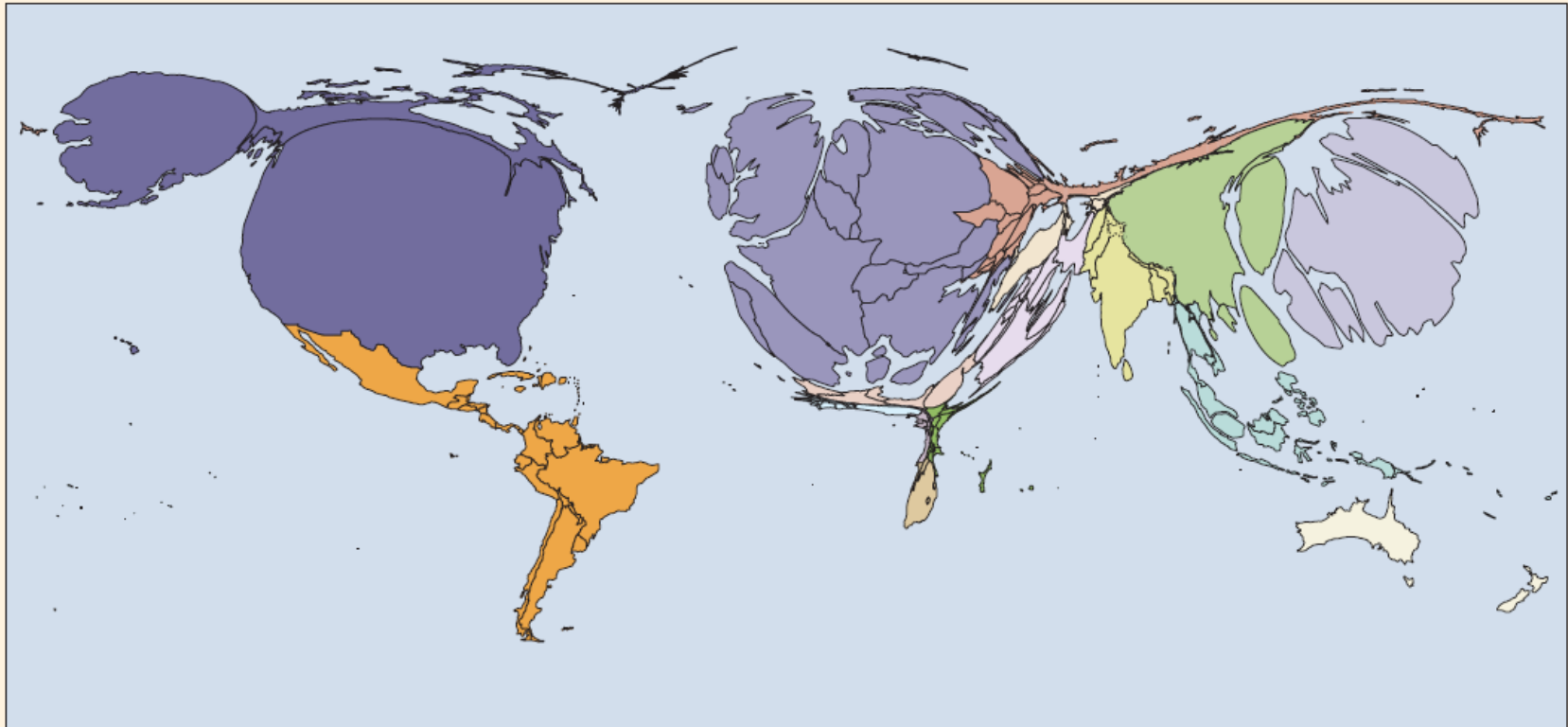
MAPA ANAMORFICO PIB/"Per capita" 1995



VISION DEL MUNDO POR LOS MERCADOS. EL TAMAÑO DE LOS PAISES ES PROPORCIONAL A SU PIB. 2005

Map G0.4 How markets view the world

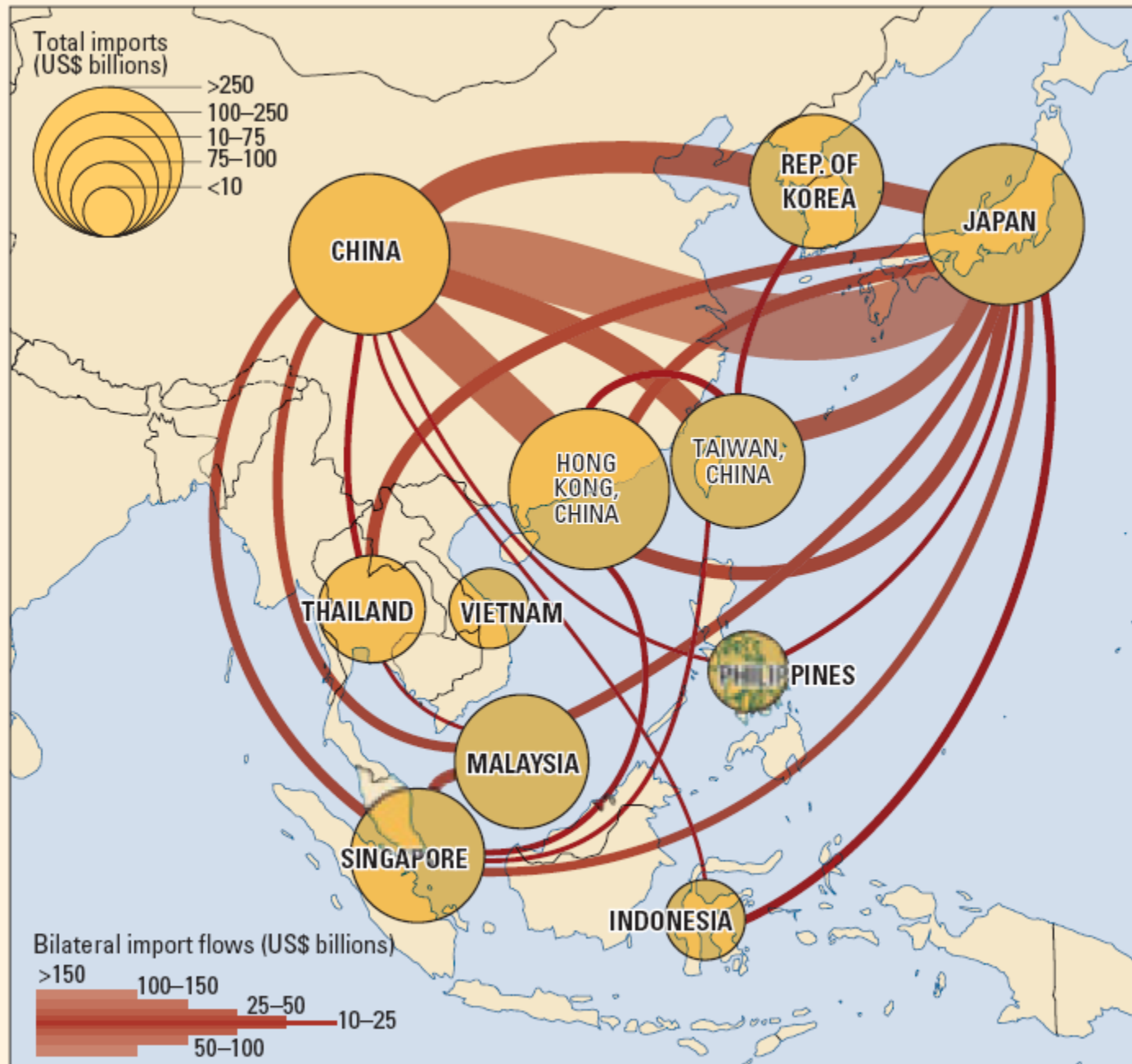
A country's size shows the proportion of global gross domestic product found there



Source: WDR 2009 team using 2005 GDP (constant U.S. dollars).

Note: The cartogram was created using the method developed by Gastner and Newman (2004). This map shows the countries that have the most wealth when GDP is compared using currency exchange rates. This indicates international purchasing power—what someone's money is worth if spent in another country.

Map G3.2 Asia integrated: trade at the end of the twentieth century

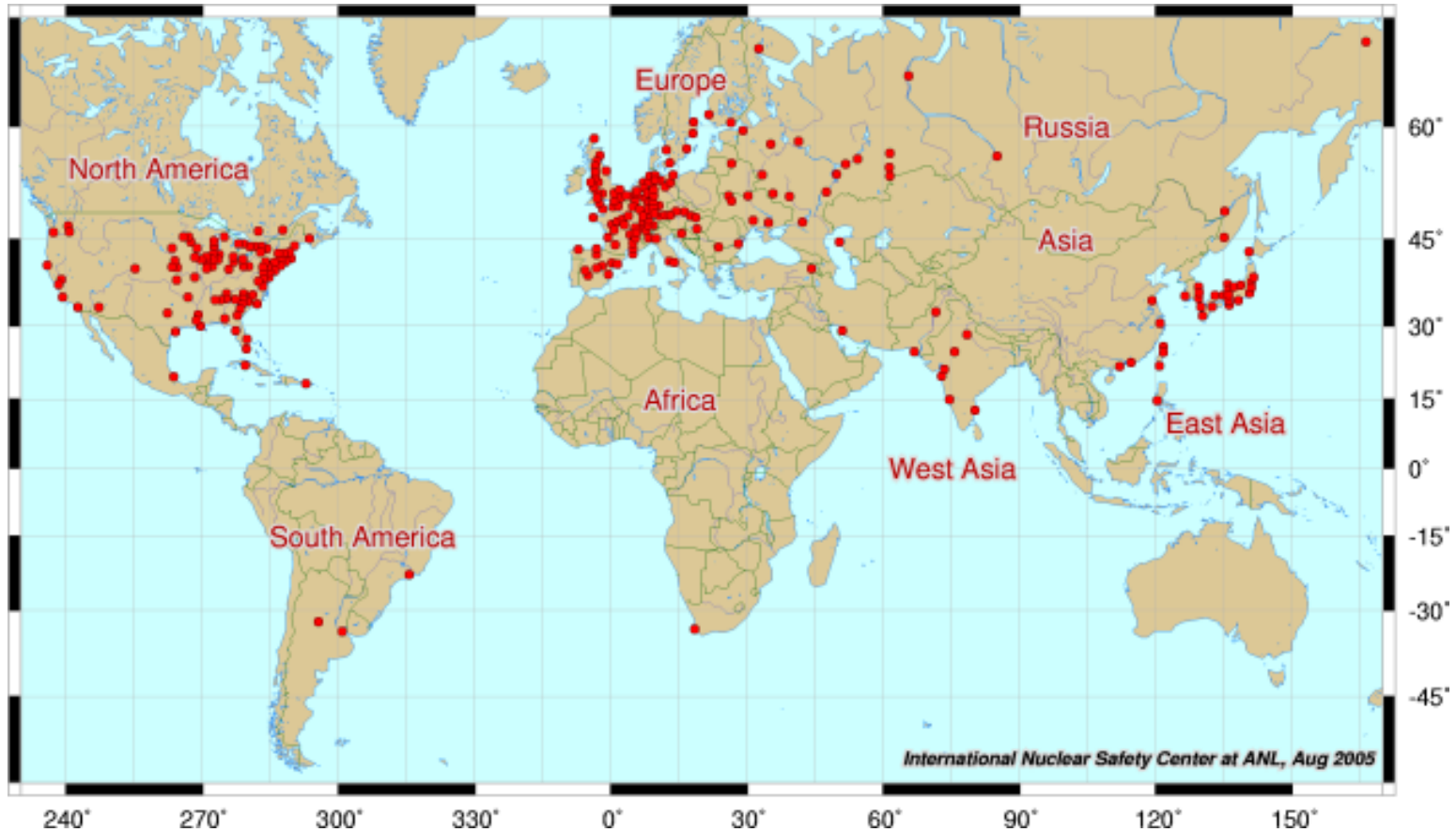


Source: Gill and Kharas 2007.

- Países y regiones donde se comercializan los productos Isuzu
- Países en los que se encuentran nuestras bases



Maps of Nuclear Power Reactors



REACTORES NUCLEARES EN JAPÓN

<http://www.mapcruzin.com/low-level-radiation/japan-nuclear-plant-map/>



PLANIFICACION DEL DESARROLLO

- In 1970, Prime Minister Eisaku Sato and the Cabinet initiated the New Economic and Social Development Plan and the New Integrated Spatial Development Plan (Shin-Zenso).
- The objective was to address disparities in living standards, as a result of accelerated growth in industrial areas around Tokyo, Nagoya, and Osaka along the Pacific Coast during the early postwar years.

CREACION DEL DEL JAPON INDUSTRIAL CORE

- Despite heavy infrastructure investments in new industrial clusters in more remote regions, they could not attract industries out of the Pacific Ocean Belt.
- During the miraculous growth era of the 1950s through 1970s, industries remained spatially concentrated, thanks to the mobility of workers, even though there has been massive relocation of industries from the congested core to surrounding new industrial areas.

ACTIVIDAD INDUSTRIAL EN LAS CIUDADES

- Enterprises that remained in core urban clusters upgraded from standardized products to high-tech products and new models by taking advantage of urbanization economies accruing from diverse economic activity and a large pool of skill and talent.
- Other enterprises retained their central management functions in the core agglomerations to benefit from the convenience of face-to-face communications with banks, government offices, and major industrial organizations.