

China's Reliance on Shipping Crude Oil Through the Straits of Malacca

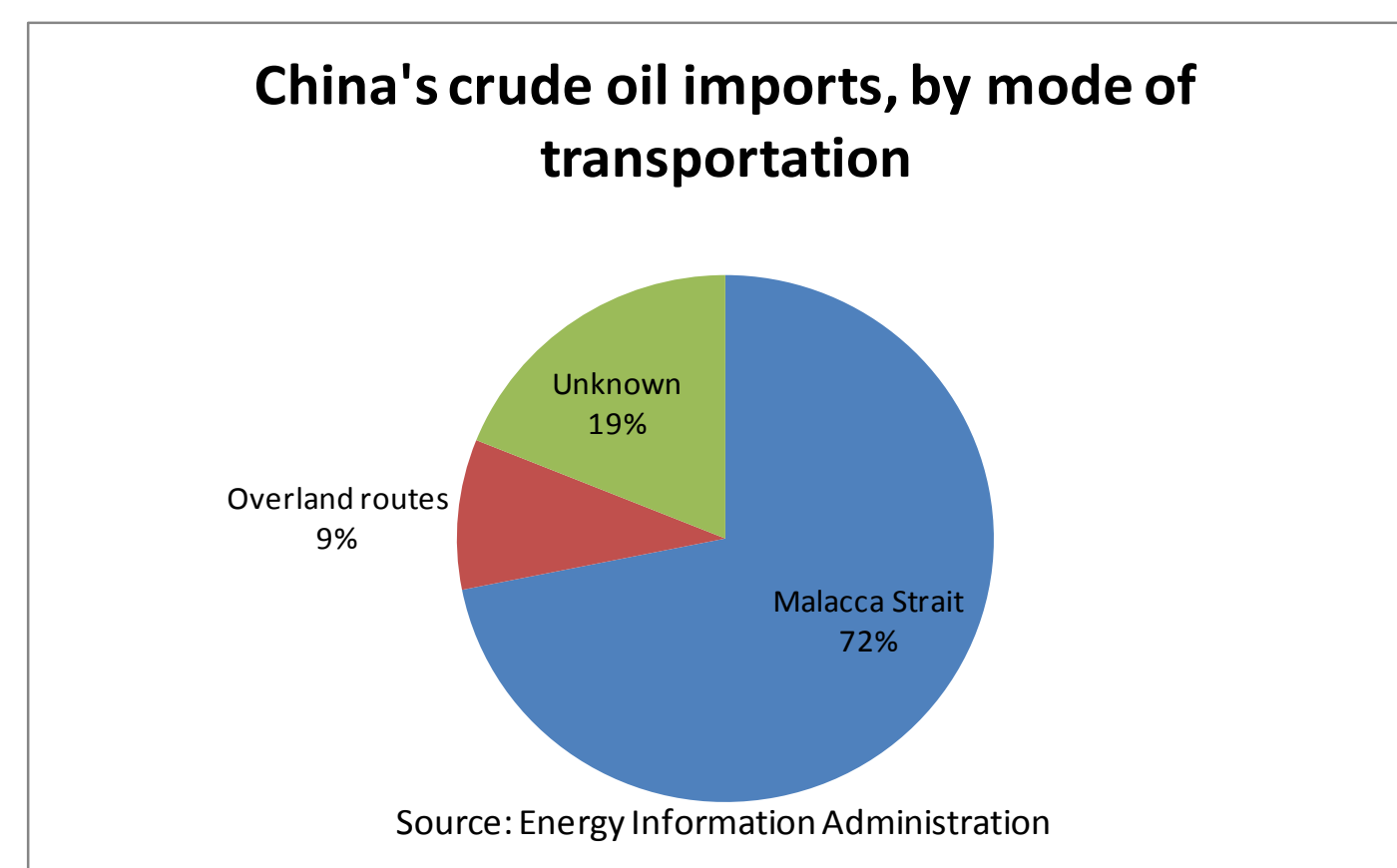
Overview



Source: Trade Arabia

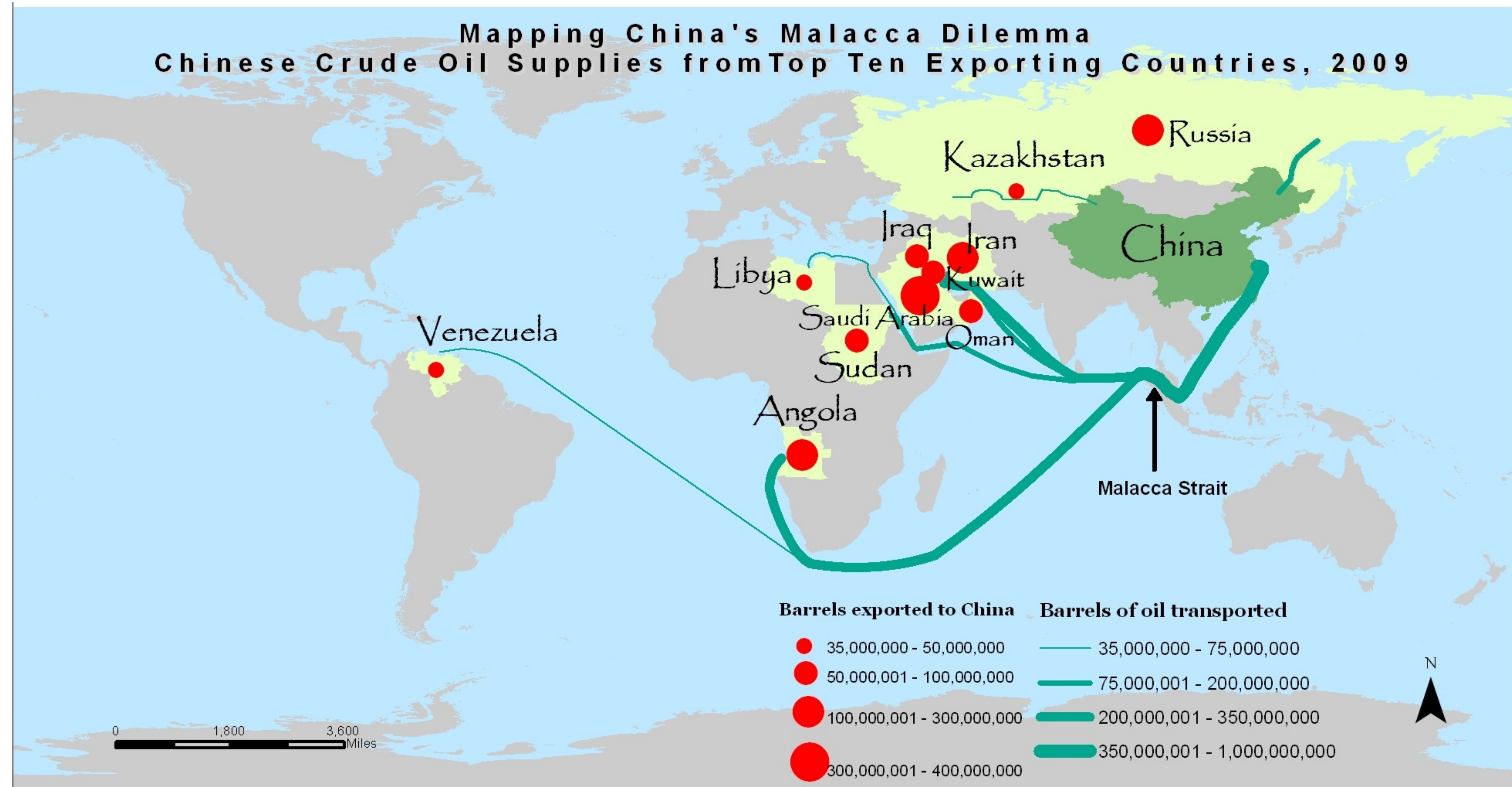
At the heart of maritime security in the People's Republic of China (PRC) lies a predicament that President Hu Jintao has referred to as "the Malacca Dilemma." Put simply, the dilemma is that the Chinese economy relies too heavily on transiting petroleum and other vital goods on oil tankers through the Malacca Strait—a narrow waterway between the Malaysian Peninsula and the Sumatran islands of Indonesia—but has few viable alternatives to it.

Over forty percent of global seaborne trade passes through the Malacca Strait, which separates Indonesia's Sumatra from the Malay Peninsula by only 1.7 miles at its narrowest point. This makes it a vital artery for the world economy. China, which now imports over half of its oil, must transit an estimated 70–85 percent of its imported oil supply through Malacca from Venezuela and oil-rich nations in Africa and the Middle East.



The two alternative routes that unite the Indian Ocean with the South China Sea islands are either notoriously difficult for tankers to navigate due to shallow waters (the Sunda Strait), or are too far detoured from the trans-Malacca route to be economical (the Lombok Strait).

The PRC's dependence on Malacca gives rise to security concerns because the surrounding region is vulnerable to disruption that could block maritime traffic and a substantial portion of the PRC oil supply. Acts of piracy, oil spills, and shipping accidents would all disrupt traffic through the Strait. Malacca's prominence in the global economy also makes it a potential target for terrorism or a naval blockade. While other East Asian countries such as Japan and South Korea rely on the Malacca route as much as China does, those countries can likely depend on their alliance with the US military to secure the Strait. As a non-US ally, the PRC feels more uneasy with the Strait's volatility.



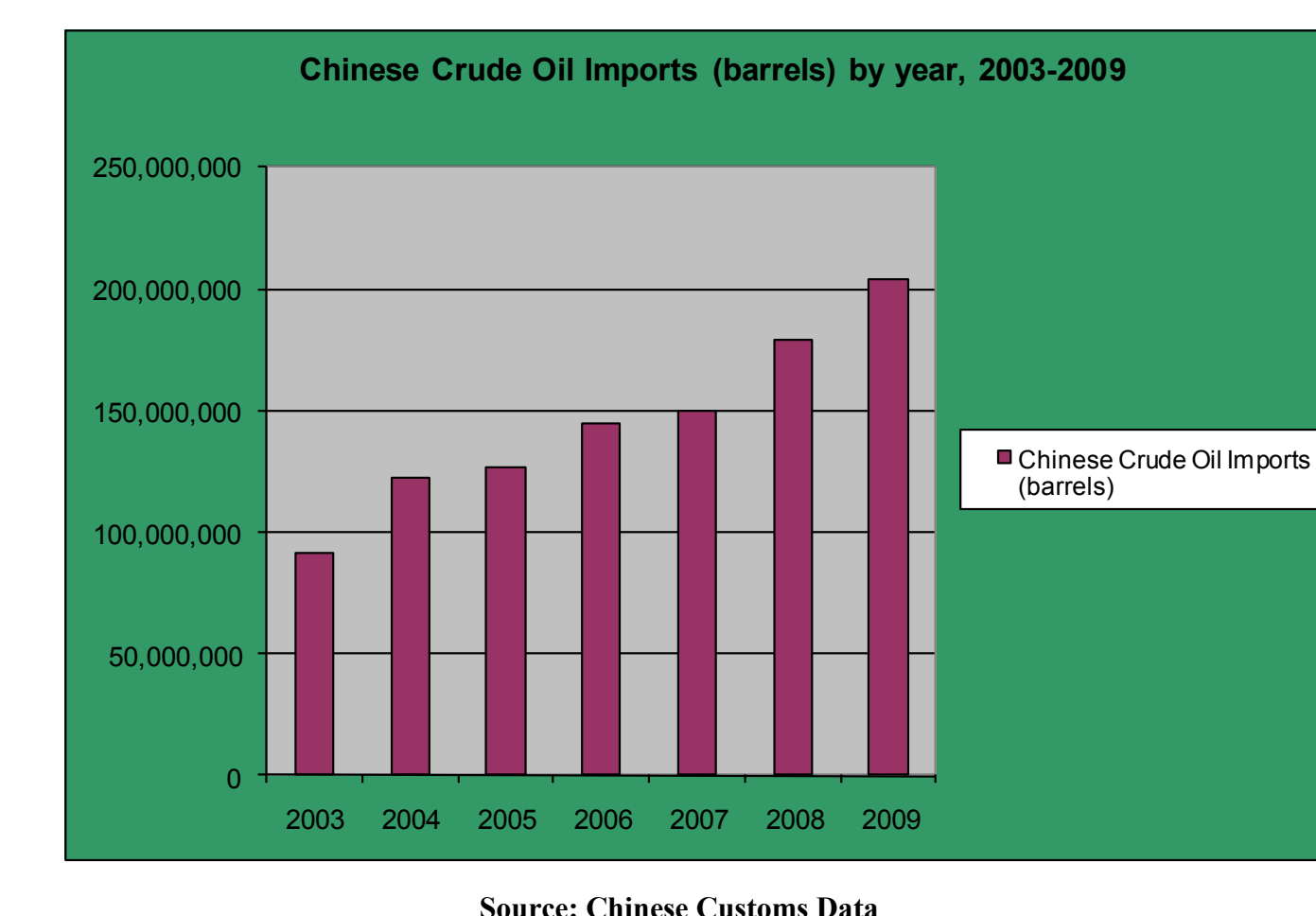
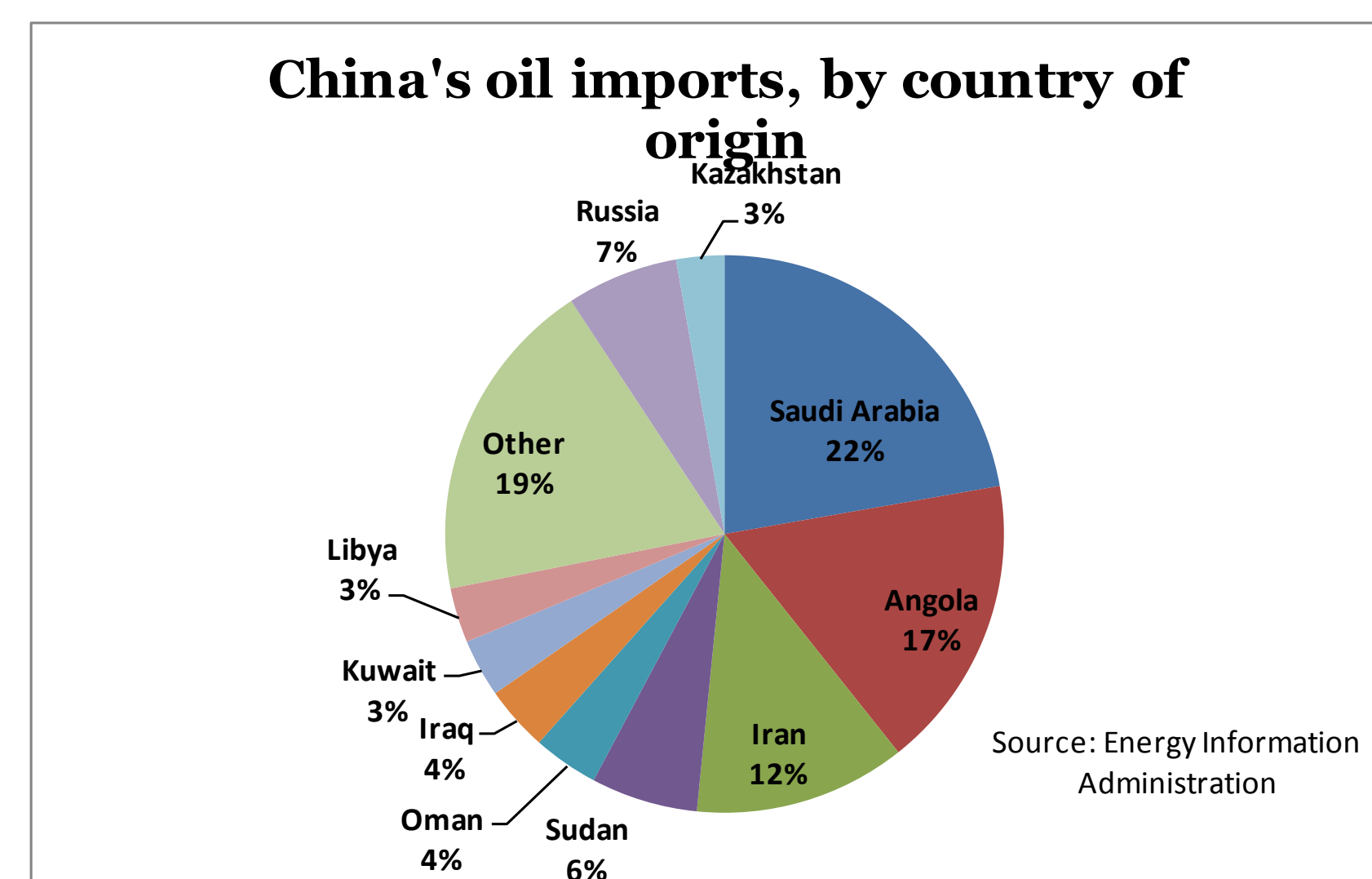
Methodology

This map identifies the principal sea-lanes and overland trade routes that connect Chinese energy consumers to the PRC's top ten crude oil suppliers. It is based on 2009 data from the United States Energy Information Administration (EIA).

The map above shows China's heavy dependence on shipping crude oil through the Malacca Strait compared to other routes. Russia and Kazakhstan, China's fourth and ninth-largest crude oil exporters, send their oil to China primarily by overland rail and pipeline routes. All of China's other top crude exporters ship their cargoes across the Indian Ocean. Venezuela exports crude oil on Very Large Crude Carriers (VLCCs) that draw too much water to transit the shallow Panama Canal and therefore must sail more than half way around the world to reach China.

Graduated symbols were placed over the shipping lanes so that their thickness is proportional to the amount of oil shipped along each route. Shipping lanes were traced by georeferencing a paper map and projecting it into ArcGIS.

The total amount of oil that China ships through the Malacca Strait will almost certainly continue to rise as the PRC's oil consumption increases as an alarming rate. Although increased pipeline capacity through Russia and a new pipeline through Myanmar (Burma), which will be completed in 2013, could ease some tension on the Malacca Strait, the Malacca Dilemma will likely continue to be a concern for China for many years to come.



Cartographer: Daniel Brutlag, F'11
 Production Date: May 2011
 Projected Coordinate Frame: GCS_WGS_1984
 Source Data: US Energy Information Administration, US Department of Defense