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by

Kavya Sreekumar and Gazi Hassan

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Author

Kavya Sreekumar, Research Intern, CPPR- Centre for Strategic Studies.

Gassi Hassan, Senior Research Associate, CPPR- Centre for Strategic Studies.

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Centre for Public Policy Research (CPPR)
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www.cppr.in | E-mail: cppr@cppr.in

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A Study of Artificial Islands

Abstract

Artificial island construction is a phenomenon that is seen on a rising scale in modern times. This paper evaluates the reasons for the construction of artificial islands along with stating the various dimensions of the impact they pose including economic, geopolitical, strategic and maritime. The topic is of great importance in the present-day international relations since to a great extent they affect the political relations among countries and even determine the development of a country itself. A few examples of artificial islands with wide features constructed for various purposes and India's dream for artificial islands are also included in this paper.

Introduction

An artificial island is “an island that has been constructed by humans rather than formed through natural processes.”¹ The traces of artificial islands date back to the ancient Egyptian Civilisation. In modern times, it was China that constructed the first artificial island in August 1995.² In the present scenario, there are innumerable reasons why artificial islands are being constructed, ranging from residential, industrial, commercial to strategic purposes. Residential purpose includes building housing colonies and other living amenities on the islands. Industrial purpose includes extraction of natural gas, coal, oil and minerals from the sea bed and also constructing processing and manufacturing industries on the islands. Commercial purpose includes keeping control of commercial sea trade routes and straits, tourism and recreational activities or building commercial infrastructures like shopping malls, seaport or airports in the middle of the sea. Finally, the strategic purpose involves setting up potential defence infrastructures and regulating activities on the man-made island with an aim to keep watch on the neighbours and have control over a particular region.³

Some of the leading countries in the construction of artificial islands are China, Japan, the United States of America and the United Arab Emirates to name a few. Island-building is a highly expensive process, however, in the future there is more scope for further construction of artificial islands as a result of increasing urban congestion along with better technology making it easy for humans to construct islands. Some of the famous artificial islands are Palm Jumeirah islands of Dubai, Danube Islands of Austria, Amwaj Islands of Bahrain, Flevoland of

Netherlands, etc.⁴

Unlike the natural islands, artificial islands are constructed in a variety of shapes and sizes using highly sophisticated machinery, technology and engineering skills. Artificial islands are erected through either of the different methods like land reclamation, constructing or extending over the already existing islands, rock or even coral reef, or through linking islets by filling the in-between areas using different construction material.⁵

There are various dimensions of constructing artificial islands. Following are a few important dimensions among them.

Economic Dimension

One of the principal dimensions of an artificial island is economic dimension which primarily corresponds to commercial and industrial purposes. Mostly, artificial islands are constructed for exploring and extracting resources such as oil, coal, petroleum, minerals and even fishery products. For instance, Upper Zakum Islands of Abu Dhabi was constructed for the purpose of extracting oil and petroleum from the sea bed.⁶ China too has constructed various small artificial islands in the South China Sea (SCS). There are multiple economic reasons why China is constructing islands such as the seabed SCS which is a giant offshore oil field with a large chunk of global fish catch and region of the busiest trade routes.⁷ Another economic dimension attributed to artificial islands is in the tourism sector. Countries construct artificial islands for tourist-attraction like the Balboa Island of California, Palm Jumeirah of Dubai and Pearl Island of Doha to name a few. The other economic purpose includes construction of seaports and airports. When seaports are constructed on islands it becomes

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4. Valera, Stephanie. 2013. “12 Amazing Artificial Islands of the World (PHOTOS).” The Weather Channel, August 28, 2013. <https://weather.com/travel/news/amazing-artificial-islands-world-photos-20130827>.

5. “Artificial Island.” New World Encyclopedia. Accessed July 2020, https://www.newworldencyclopedia.org/entry/Artificial_island.

6. “Upper Zakum Offshore Oil Field Development, Abu Dhabi.” Oil and Gas News and Market Analysis. Accessed July 2020. <https://www.offshore-technology.com/projects/upper-zakum-offshore-uae/>.

7. “Why is the South China Sea Contentious?” 2016. BBC News, July 12, 2016. <https://www.bbc.com/news/world-asia-pacific-13748349>.

easy for larger cargo ships to move in and out of the harbour, like Willington Island in Kochi, India.⁸

Strategic and Geopolitical Dimension

Artificial islands are also constructed from strategic and geopolitical interests. In many cases, they are constructed to keep watch on the neighbouring countries and as a site for building military and defence infrastructure. These artificially constructed islands can be used to attack the enemy countries using warships and missiles.

The Chinese islands construction in the SCS is one of the best examples that helps to understand the strategic and geopolitical dimensions of artificial islands. China is making land reclamations in the seven holdings of the SCS under the historic claimant of the nine-dash line.⁹ From 1946 to 2015 China has moved its defence border close to the nine-dash line. Under this non-justified nine-dash line, China is claiming all water, land, resources and features that fall under this jurisdiction without appreciating the sovereignty and Exclusive Economic Zone (EEZ) of other border-sharing countries who have more proximity to the SCS than China. The air and surface surveillance system installed by China in these artificial islands will help it keep track of those who enter and leave the SCS region. The Mischief Reef, Subi Reef and Fiery Cross Reef — the larger ones among the seven islets constructed by China — shelter its paramilitary forces Peoples' Armed Forces' Maritime Militia (PAFMM). The Mischief Reef constructed between Spratly Islands and Palawan Island is just 125 nm from Palawan, Philippines. Mischief Island is located within the EEZ of the Philippines, an obstacle that has caused China to block Philippines' ships from refuelling its troops in

the Spratly Islands. Thus, unauthorised border claims by China after constructing artificial islands allow it to encroach the maritime zones of other neighbouring countries and continue to construct more and more artificial islands. This shows how artificial islands serve the purpose of bullying weak neighbours.¹⁰

Maritime Dimension

Maritime security is a word that is gaining popularity and importance in international relations. There is no exact definition or consensus over maritime security definition yet. Regional organisations like the European Union and the African Union in 2014 launched maritime security strategies. However, the US is a pioneer in the field of maritime security launching a National Maritime Security Policy in 2004. The piracy off coast Somalia between 2008 and 2011, the interstate tensions in the regions of the SCS and the East China Sea, and increasing naval strength in the water bodies of nations have all raised the attention on the subject of maritime security in the recent past.¹¹

According to UNCLOS, the freedom of navigation starts after 12 nm of the territory including the EEZ and high sea. And this freedom of navigation is applicable for merchant ships, warships and aircraft.¹² However, China does not act according to this law. In this special case, China is of the opinion that the ships and aircraft should take permission from China before entering its EEZ. Another controversial point is that according to UNCLOS, high seas are part of Global Commons and any country can access them. In that case, even fishing in the high seas whether coastal or land-locked is open for all. However, here too China restricts other countries from entering the high seas of the SCS.¹³

8. "Willington Island - a Man-Made Island in Kochi, Ernakulam." Kerala Tourism (Department of Tourism, Kerala). Accessed July 2020. <https://www.keralatourism.org/destination/willington-island-kochi/181>.

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According to Article 60(8) of UNCLOS, “artificial islands, installations and structures do not possess the status of the island. They have no territorial sea of their own.” Therefore, in accordance with this law of UNCLOS, any country could fly over and sail near them since there is no territorial air or water space of their own.

Important Artificial Islands

Upper Zakum Oil Field, Abu Dhabi

Upper Zakum was an island constructed under the UZ750 project, purely for economic and commercial purposes. The construction of the artificial island has complemented the oil production for Abu Dhabi. It is located 84 km west of Abu Dhabi and is owned by Zakum Development Company on behalf of Abu Dhabi’s National Company (66%) and Exxon Mobil (28%) and Japan Oil Development Company (12%). This is a US\$ 3.7 billion project constructed on a man-made island.¹⁴ The Upper Zakum island was built for oil extraction purposes and is estimated to have oil worth 50 billion barrels. Upper Zakum oil field is the second largest offshore oilfield and fourth-largest oil field in the world. Once the UZ750 project gets completed in 2024, the production will rise to 100,000 BPD. It is also one of the first offshore fields in the world that is operated remotely using highly advanced technology. This man-made island is also projected to include a residential area for 2150 people along with recreational areas, a mosque and an operations and drilling office.¹⁵

Forest City Project, Malaysia

Forest City is an artificial island that is being

constructed by Malaysia in the Iskandar Malaysia Special Economic Zone in Johor. The primary reason for the construction of this is to reduce the rising congestion in the small island nation. The project is constructed for multiple purposes: residential, leisure, commercial and industrial. It consists of four islands that are being constructed opposite Singapore in the Johor strait covering an area of 30 sq km. The prime location of the Forest City allows all the Asia Pacific Economic Cooperation (APEC) countries including India and China to reach the location within just 6 to 8 hours.^{16,17}

Kansai International Airport Island, Japan

Kansai International Airport constructed in the Kansai region of Japan is an architectural marvel by Italian architect Renzo Piano. It is located 24 miles southwest of Osaka station and on the north is the Rokko mountain and Ikoma, Kongo mountains to the east and Izumi mountain to the south. One of the primary reasons for the construction of Kansai airport on an artificial island was to avoid noise pollution that would affect the mainland. The Airport also has amenities including a shopping area, children’s playroom and an automated intra-airport transportation facility. Since it is an offshore airport, it can function 24 hours without violating the noise pollution policy.^{18,19,20}

Artificial Islands in the South China Sea

The South China Sea holds utmost significance for Chinese economy and security. The artificial islands in the SCS act as a base for China to gain

14. “Upper Zakum Offshore Oil Field Development, Abu Dhabi.” Oil and Gas News and Market Analysis. Accessed July 2020. <https://www.offshore-technology.com/projects/upper-zakum-offshore-uae/>.

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control over the region. There are heavy military installations and fixtures in these islands including helipads, satellite communication equipment, radars, naval guns and docks. The Peoples' Republic of China has constructed seven artificial islands along with the Spratly group of islands — the Fiery Cross Reef, Mischief Reef, Cuarteron Reef, Subi Reef, Gaven Reef, Johnson South Reef and McKennan Reef. Nonetheless, the justification China provides for their construction is to provide better services to the vessels that are sailing through the SCS (not only of Chinese but of all other countries), disaster prevention, and search and rescue to all countries that surround the SCS.^{21,22}

Artificial islands are not alien to India also. India is home to famous islands like the Willington Island, built by the British, currently a naval base of the Indian navy and commercial port of Kochi. Padmadurg Fort in Maharashtra built for Chhatrapati Shivaji Maharaja's army in late 1600s, Jal Mahal in Jaipur by Maharaja Jai Singh 2 in the 1800s, Jag Mandir in Udaipur by Sisodia Rajputs of Mewar in the 1500s are a few artificial islands built in India.

Artificial island-building for commercial, industrial, residential and strategic purposes is possibly going to be more common in the near future. Also, technological growth would surely be a contributing factor for improving the number of artificial islands. However, there is also a possibility of an island-

building race which for sure is going to impact marine life and biodiversity adversely. And in the present scenario, China is the nation having frenzy activities in the region which is affecting both peace and stability of marine life, security and stability of the Southeast Asian region.

Conclusion

Artificial island construction is a modern-day phenomenon that is on a rising scale due to multiple factors including population growth, strategic importance, economic gain, geopolitical advantage along with other factors. This paper has attempted to analyse how artificial island construction would play a role in determining the relation of a nation with other nations and how it would help a country to grow on its own. China's artificial island construction in the SCS is a primary reason for its strained relationship with neighbours. The nine-dash line is the boundary basis on which China is constructing artificial islands which intrudes the economic boundary of her neighbours. On the other hand, the artificial island construction by Abu Dhabi and Malaysia is for their betterment and economic growth. The pace of island construction in modern times could lead to island building race in the near future, which can become a key factor in determining tomorrow's international relations and also in reducing the quality of marine life and oceans, thus altering the geographical character of the region.

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