

CHAPTER IV

CONCLUSION

The Article I of the Outer Space Treaty and Moon Agreement emphasizes that the exploration and use of the Outer Space “shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind” which called “common heritage of all mankind” or CHM. Moreover, that is also reflect the outer space as the *res communis* which means that every property in the outer space belong to all nations. Thus, every element within the areas including technology, property, and resources should belong to all nations and used with the basis of survival of the mankind which eventually it could benefit all mankind. In addition, there should be equitable share of resources among states regardless their economics status to uphold the peaceful purposes. However, as the space transforming into the strategic assets which means that every technology and facilities owned by states in outer space could be perceived as important assets since it could provide several capabilities and strategic values to pursue their national interests which contrary with the CHM. For instance, the United States as the space power country.

Through the theory of meta-geopolitics, it could be inferred that United States perceived the outer space as their strategic assets and one of their important element for the national security since it could bring several benefits for them. In terms of social and health issue, the space-based technologies could be utilized by United

States to improve the public service and distribute health care through the telemedicine which already conducted by several government agencies, such as NASA, Health Resources and Services Administration (HRSA), hospitals, and universities. Moreover, NASA also seek to commercialize the telemedicine technology where the profit could support their funding for another space projects. Space-based technologies also utilized by United States to monitor any outbreak disease for the national security and deliver humanitarian aid (Advanced Microwave Scanning Radiometer for EOS (AMSR-E)). For the government, the space-based technologies could help them in managing the public resources, assistance programs, disasters mitigation, emergency response, efficient evacuation, and diminish the operational costs. For instance, the utilization of GPS during the 9/11 attacks by the Fire Department for the provision of recovery working units by put the bar-coded tag on each evidence as well as for the debris removal.

In terms of domestic politics, there is interaction between NASA, government agencies, space commercial companies, satellite industry, telecommunication industry, military and defense industries. The intention of United States to gain national prestige and expand their national space capacities to show United States leadership as the space power country and technocracy could be proven by the establishment of NASA, Space Policy Directive 1-4, National Space Policy 1996-2010, National Aeronautics and Space Act 1958, etc. The utilization of space-based technologies could benefit the government of United States and the domestic

politics which could be reflected through the case of Cuban Missile Crisis, Vietnam War and Gulf War.

In terms of economics, the aerospace businesses such as SpaceX, Blue Origin, Lockheed Martin, Virgin Galactic, and Boeing play a vital role for United States leadership in the political economy of outer space especially in the independent construction, experiment, development and research for accelerating human expansion into outer space or “the Battle of Billionaires”. The aerospace businesses also bring advantages to United States since they provide more job vacancy, innovation, technological advancement, and competitive markets. Moreover, United States’ businesses also possess commercial satellites which could be used to gain profit such as commercial communication satellites, commercial earth observation satellites, commercial technology development, commercial navigation satellites, and commercial technology demonstration satellites that eventually will support the economic growth. In terms of budget, NASA and United States Armed Forces supported by abundant of financial resources to keep America’s leadership in becoming the space power country. The United States hold a strong bargaining power in the decision-making process of IMF, World Bank Group, and WTO since the percentage of voting is quite among the member states due to the big financial contribution. By having the space-based technologies that could identify the potential natural hazards, it could save the economic resources from the unexpected loss. In addition, the utilization of space-based technologies

also benefited the major industries of United States such as agriculture, energy, aviation or transportation, and tourism.

In terms of environment, the United States of America through NASA play a key role in climate science since they already developed space-based technologies especially environmental satellites to mitigate the adverse impact of current emerging environmental problems as their justification bail out from Paris Agreement. NASA conduct program to monitor earth, climate and its physical environment using space-based observation which encompasses sea level, temperature, oceans, ozone layer, air pollution, solar activity, transformation of sea ice, and land ice. Furthermore, NASA also used their satellite especially Aqua to improve the food supply chain and prevent any food insecurity.

In terms of science and human potential, the United States is the pioneer of internet and Global Positioning System (GPS) through the program which funded by the Department of Defense. United States also possess abundant satellites which support their advancement in the science and unleashing the human potential by the high technology, such as earth observation satellites, technology development satellites, space science satellites, communications satellites, and earth science satellites. There are several education institutions which possess satellites to advance their education quality. It could be inferred that the application of space-based technologies to advance science and human potential in the United States not only limited to NASA and other government agencies, rather distributed equally

until the education institutions. In the United States, the space communities also play a key role in distributing the funds, held public discussion, and research development to create a self-funded technology since the doctrine of outer space already well-rooted.

In terms of military and security issues, United States will establish the Space Force as the new branch of United States Armed Forces under the Department of Air Force and Space Command as their serious commitment to strengthen their capability in the outer space. There are several satellites which possessed by the United States Armed Forces such as communication, technology development, earth observation, navigation, and the space science which important for their national security. The application of space-based technologies by the United States for the military purposes could be expounded through the Gulf War (Operation Desert Storm), Cuban Missile Crisis, and Vietnam War.

In terms of international diplomacy, United States possess significant influence in Security Council, European Union, NATO, G-8, G-20, Non-Proliferation Treaty, IAEA, UNOOSA, and WMO. The United States played a key role in the creation of United Nations Outer Space Treaty, international verification regime, and the debate of Prevention of an Arms Race in Outer Space (PAROS) which shown their leadership and significant influence in the international stage. NASA instrument for United States' foreign policy since NASA plays a significant role politically and culturally in projecting U.S. power and positive image as well

as American democracy. Most of NASA's international programs served as the instrument for U.S. soft power since the international collaboration in space is important to promote American culture and democracy as well as to channel technological and scientific efforts which coherent with U.S. interest. In the international fora, United States actively conduct its space diplomacy under the Office of Space and Advanced Technology and U.S. Department of State to strengthen American leadership in the acceleration of space exploration, commercialization, and applications by expanding influence of U.S space policies, missions, and offering the U.S space services, capabilities, and systems to the other countries.

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