Chapter XI
Extraterrestrial Space Regimes and Macroprojects:
A Review of Socioeconomic and Political Issues

Dimitris J. Kraniou
Point Park University, USA

ABSTRACT

This chapter examines macroprojects to be deployed in outer space. A feasibility study is used to analyze the deployment of such projects in extraterrestrial realms. Moreover, the author argues that these projects will have substantial socioeconomic and political impacts on the international community of nations. Deploying permanent human facilities in space, mining planetary surfaces, asteroids, and a host of other activities will require the use of macroprojects. These macroprojects will be complex by nature. They will require the use of human and technical networks for their completion. All that can be done, and it can be accomplished by using the skills and talents of people coming from a variety of ethnic, racial, and cultural backgrounds.

INTRODUCTION

There are untold riches in outer space (Lainas, 2005; Lewis, 1997; Nelson, 2001). Everything from satellite orbits and microgravity fields, to the mineral resources of planetary and asteroid surfaces, can be harnessed for economic purposes. The road to outer space is the new frontier in the path of advancing human welfare. It presents an outlet from the closed system defined by our planetary environment replete with its finite resources.

Though the possibilities are tremendous, problems are quite apparent. As the developments witnessed during the formulation of international regimes governing the Law of the Seas, the Antarctic Treaty, the Outer Space Treaty, and so forth, are wont to remind us, global commons raise difficult, and possibly insurmountable, obstacles.

One can argue that this routine posturing during negotiations for treaty formalization is attributable to a positioning process in international relations. This is because negotiations at that level are geared toward enabling individual nations to maximize their future pay-offs from the panoply of activities unfolding in space. Outer space law would thus play a very crucial role in delineating parameters on issues and concerns that pertain to the allocation of such resources.
Outer space law and modern economic principles can enable us to successfully overcome the dichotomy provided by the *res communis* over the *res nullius* arguments voiced over the years. Under ancient Roman law of property, items were subdivided into two categories; the *res nullius* and the *res communis*.

*Res nullius* basically means things or items (property) that do not belong to anyone. This implies that property or items that fit the scope of this definition cannot be appropriated by anyone. The exact opposite rationale is derived by the concept of *res communis*. These are basically things or items that belong to the whole community. Thus, unlike *res nullius* that cannot be owned, the state, the group, or the global community can own *res communis*.

The *res nullius* and the *res communis* dichotomy present a problematic approach when dealing with outer space resources. The technologically advanced countries employ the *res nullius* argument. They favor this approach because it gives them the flexibility to appropriate resources by using superior economic and technological means. On the other hand, the developing and underdeveloped community of nations favors the *res communis* argument. These countries opt for a communal approach, and solutions to resource problems that can be handled by transnational institutions and organizations.

The aforementioned issues have been debated at international forums, and there appears to be no likely end in sight to this debate. On the contrary, it can be expected that future similar debates will increase as outer space becomes a more intensified arena for commercial and other activities.

### THE CONCEPT OF MACROPROJECTS

It will not be long before we deploy colossal industrial infrastructures in extraterrestrial realms to appropriate resources. Planetary and asteroidal resources will be targeted. A lot of these will be classified as *Macroprojects* (Hori, 1990; Horwitch, 1990; Sykes, 1990; Weiss, 1988). I will attempt to provide a working definition of this term. *Macroprojects* have a substantial temporal component. In terms of years of completing their corresponding deployment, their time frame may fluctuate from 5 to 10 years or more. Such projects are collaborative in nature. This is the case because of their complexity and diversity. They involve specialized personnel with expertise in all functions of management, in finance, human resources, technologies, and engineering. They ideally employ astute individuals with integrative abilities. Similarly, such projects have sizable societal and cultural impacts.

Representative examples of terrestrial macroprojects are the pyramids, the Panama Canal, the Manhattan program, the Aliesca pipeline, the Apollo program, and so forth.

The financial resources required for the completion of such projects are quite substantial. Billions of dollars are used for such projects. Groups of corporations participate in such projects so as to diversify their strategic priorities and minimize their risk exposure. It is generally expected that members of the multinational corporate community also participate in these corporate groups. Further reduction of the risk element in undertaking such macroprojects is accomplished by the involvement of governmental or quasi-governmental organizations in these corporate groups. The historical analogies to that may resemble the construction of the railroads, and that of NASA and the space program. Moreover, it is expected that international organizations and transnational institutions will play a role in extraterrestrial macroprojects. Please see the analysis of the following section.

### THE ROLE OF INTERNATIONAL REGIMES

It will be instructive to provide a working definition of the term *regime*. I will draw from the work
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