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ADAPTIVE SYSTEMS FOR THE ESTABLISHMENT AND MAINTENANCE OF  
EXTRATERRESTRIAL HABITABLE BIOSPHERES FOR AGRICULTURE, MINING AND OTHER  
RESOURCE FURNISHMENT FOR CONTINUED LIFE ON EARTH AND IN THE FUTURE  
EXTRATERRESTRIAL COMMUNITIES

**Abstract**

This paper explores the possibility of adaptive controlled evolution of habitable extraterrestrial communities for humans and other Earth life forms in order to allow human exploration and settlement in space both for redistribution of population and provision of food and other resource security for all. Population and habitation of other moons/planets should allow for resource and environment security for all habitats, including Earth.

Issues to address include the provision of breathable atmospheres and water as well as adequate nutrition for all life forms living in the new extraterrestrial communities. For example, triple membrane-enclosed compartments could simulate the Earth's atmosphere as plant life from our planet gradually provides a human-breathable atmosphere, at first in pockets on the new planet/moon and then for the whole biosphere with the membrane system being made appropriately for the gravitational field of the moon/planet. Platforms similar to oil-rigs could initiate land masses where there is no geologically solid mass but liquid covering the moon/planet. Solutions for water provision lie in recycling in beneficial ways what water is already present as well as perhaps rain-like condensation and trickling down of water from transpiration of plant life taken to other moons/planets to establish a human-habitable community.

Initially small communities could be established with a view to supporting Earth as well as providing life opportunities and employment. However, as situations evolve and Earth returns to be more self-sustaining, such populations may launch further missions further afield in a type of relay.

It has been postulated that any community fails without suitable trade allies and thus all such communities, including Earth might maintain links.

Ozone created in suitable processes, perhaps from a pressurized system, could be used to aid life on Earth and create high pressure systems to avoid the further thermal melting of the ice caps (based on thermodynamic principles). Ozone could also be used to shield against excessive light on other moons/planets as well as regulate weather.

Note that in view of the needs on Earth, moons/planets could be targeted to meet critical needs such as food security, fuel security, mineral security and dwelling space for Earth's ever-growing population.