



SPACE BIOLOGY IN PHILIPPINE EDUCATION: CATALYZING CLIMATE-RESILIENT AGRICULTURE AND BIODIVERSITY CONSERVATION

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ABSTRACT – This paper is a concept and course proposal examining the feasibility of introducing space biology concepts and methodologies at the graduate level in the resource constrained Philippine educational system amidst prevailing opinion that it is a luxury for wealthy nations only. The rationale is to spur local and practical innovation and functional breakthroughs in climate-resilient agriculture, agroforestry, ecosystem biodiversity and environmental health. Selected literature, course outlines and syllabi relevant to the topic were reviewed using Safari and Google Chrome search engines. Key words include space biology, space science and space biology course outlines. Websites of the National Aeronautics and Space Administration (NASA) and the Philippine Space Agency (PhilSA) were visited to see current activities. Only selected literature essential to the writing of the course proposal were handpicked from the outputs generated. Results revealed that contrary to the belief that space biology is tailored fit for rich countries only, it has shown highly practical or functional utility and is a crucial strategic catalyst in coping with agriculture, forestry and ecosystem biodiversity conservation and environmental health vulnerabilities in developing economies. This is particularly useful and empowering in the Philippines, being in the Yuxi Circle and the Pacific Ring of Fire, where scarcity of resources and uncertainties of climate change impacts are evident. Space biology principles offer critical insights on how to manage limited resources in a highly stressed space environment which can be translated into managing severely degraded and threatened landscapes in the Philippines experiencing triple planetary crisis by embarking on biotechnological innovations like plant root and microbe symbioses, biofertilizers and biopesticides. The proposed course outline on space biology demonstrates the application of the field in agriculture, biodiversity conservation and environmental health. The strategic integration of space biology into the Philippine universities and hence, Science and Technology (S&T) would transform our country's position as mere observer and consumer of global space technology into a self-supporting visionary and trailblazer in today's space-based economy.

Keywords: Pacific Ring of Fire, Space-based economy, Space Science, Triple Planetary Crisis, Yuxi Circle



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