***Azolla*: a new paradigm of the future of rice**

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Azolla (Figure 1) is a tiny floating aquatic fern and contains in the cavities of their leaves the cyanobacteria Anabaena (Figure 2). *Azolla-Anabaena* symbiont was considered as a potential green manure for rice (Figure 3) and other crops of Ecuador such as banana (Figure 4). For this reason, the Institute of Chemical and Environmental Sciences (ICQA) of ESPOL (Escuela Superior Politécnica del Litoral) has worked for thirteen years in this research.

Figure 1. *Azolla*: new paradigm

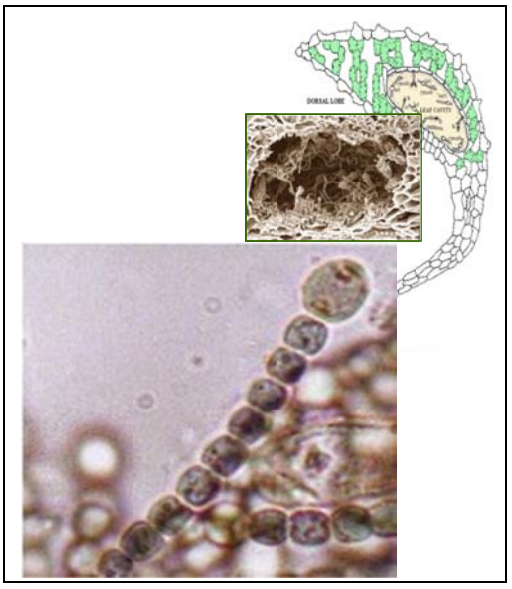

Figure 2. *Anabaena*. Scheme

Figure 3. *Azolla* fertilizing rice

Figure 4. Banana. Differentiated growth with *Azolla*

This development has benefited from World Bank sponsorship, coupled with the efforts of ESPOL, PROMSA (Programa de Modernización de los Servicios Agropecuarios) and SENESCYT (Secretaría Nacional de Educación Superior, Ciencia y Tecnología).

These studies are showing that *Azolla-Anabaena* represents a new paradigm for agriculture and environment, as for global economy and health.

On the other hand, rice fields of Guayas Ecosystem (Figure 5) incorporating *Azolla* to their tillage, are going to play a strategic role in national life, since, apart from producing rice with quantity and quality advantages, will produce: (1) fertilizer for national agriculture, (2) feed for livestock, (3) purification of rivers Daule, Babahoyo and Guayas, (4) soil enrichment, (5) flowering of natural biota, (6) improving aquaculture of Guayas river estuary, (7) stimulation of the fisheries of the Gulf of Guayaquil and (8) reducing global warming.

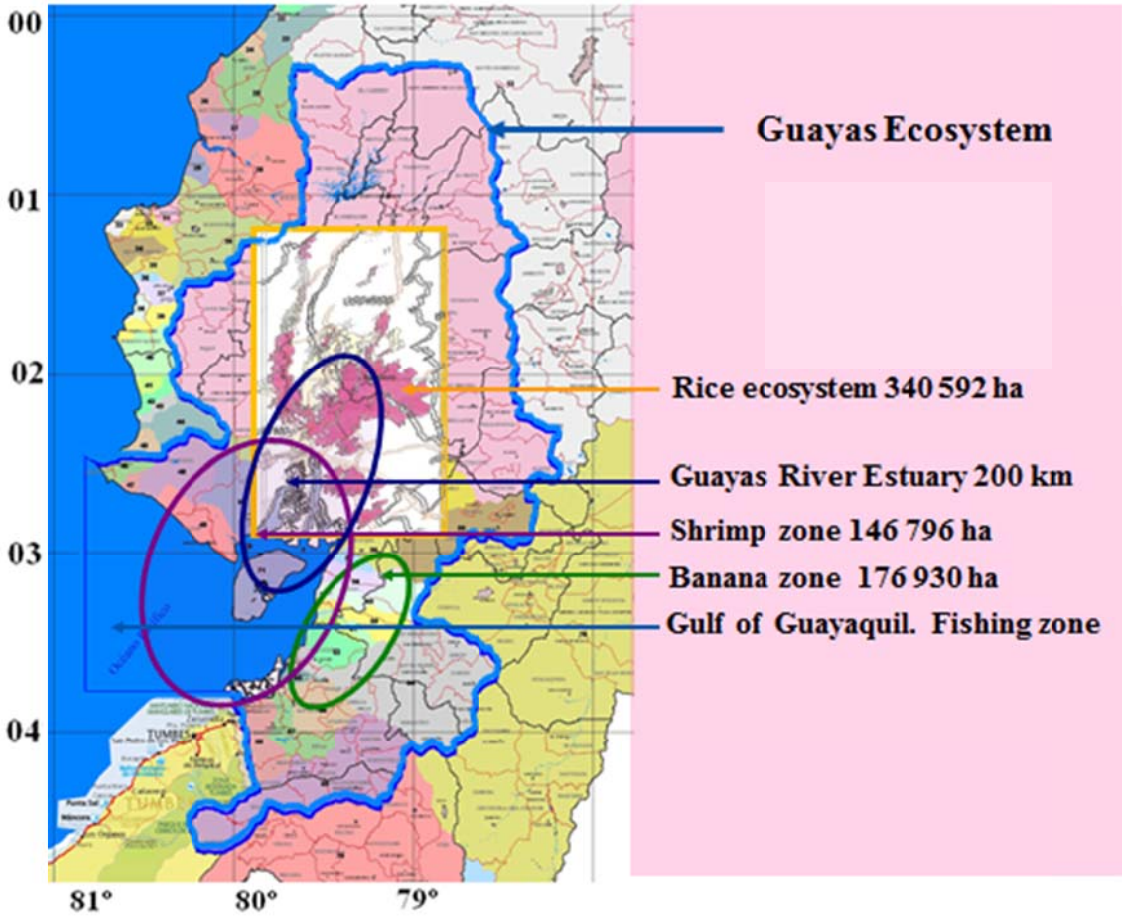

Figura 5. *Azolla*: Levering the new functions of paddy fields in Ecuador

These emerging national and global environmental services are a source of new tasks in various fields such as finance and economic development, and especially the generation of tropical knowledge in the Guayas Ecosystem platform, a privileged and strategic zone for humanity.

Incorporation of *Azolla* in agriculture is an application of food sovereignty, ensuring physical access, economic and environmentally safe and nutritious food for the consumer population of rice and other agro-products fertilized with *Azolla*.