

Floram Project: Comments and Suggestions

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The efforts of the group of researchers who are developing Floram Project are commendable. Their approach is a pioneering example of multidisciplinary work ethically laudable for involving contemporary issues around which there is consensus. At this stage, however, perhaps some changes might be introduced to further ensure its feasibility and future detailing. The reader will have to excuse any seemingly vehement criticism, which in no way detracts from the unquestionable merits of this project.

There is a highly complex connection between the biological, cultural, and physiographic diversity of a (re)forest and its fragility. These aspects all hinge on a good articulation between the external and internal links of a given system in relation to the dynamics of open systems, which underscore the vital significance not only of CO₂ levels but also of several other benchmarks. The idea of going back to the past and bringing down these levels to past or much lower than past figures finds no support in thermodynamics from a historical geochemical perspective. The reason is that the distribution of biological diversity in space and time is a function of the space, time, reservoirs, and flows of the Earth's materials cycle. In their totality, such variables determine the environmental heritage to be preserved from the genetic, biochemical, physiographic, and other standpoints.

The whole gamut of value issues cannot be simply discarded because they have no "market price," either now or in the near future. They are underlying issues of growing significance regarding what the "Earth's citizens" must develop.

Coadaptation of ethnic and biological diversities must somehow be considered in a context of forest-oriented technologies, not in terms of a man-nature relationship where man is assumed to be a "non-primitive" element equipped with a "univocal rationality" divorced from nature.

Non-predatory tourism and other issues linked to "animal" diversity must be considered in any broader and comprehensive phytosociological approach.

* This text has been extracted from the special issue of *Estudos Avançados* on Floram Project, published in English in 1995. The original version, in Portuguese, was published in no. 9, May-Aug. 1990.

The fractal significance of edge brittleness must be explored further. In fact, it belies the dilemma of the ongoing discussion about the percentage of forests destroyed, set apart from a broader perspective, *diluting* the importance of more accurate monitoring over longer periods, merely focusing on surfaces seen as nearly homogeneous.

The increase in CO₂ content must be considered also in view of future possibilities for future industrial photosynthesis. Global aspects must also be addressed in any "objective" discussion of the vocation of each area. The label of unproductive also needs to be challenged.

Maximizing biomass must be critically compared to more qualitative alternatives, just as it is unfair to single out CO₂ as a variable. Quality of life and survival require a broader context to include all types of diversity, even cultural and ethnic ones to some extent, even if they cannot be included in annual balance sheets. Both fast biochemical rhythms and slow-paced pedologic and ecological recovery — the landscape as a whole — must be confronted with the scale of human action in terms of concepts like homeostasis and the projection of productivities biotechnologically articulated with the geochemical cycle flows. We would thus avoid looking at local impacts from a linear angle and making them non-integrative, in addition to diluting the idea of historical recovery along time. In principle, a link between extinction and speciation must be provided.

In conclusion: some conceptual changes are required to make the project more consistent and "salable." We must not forget the examples in agriculture of high-yield but plague-prone seed strains, associated to pesticides and costly fertilizers that may easily miss the mark before harvesting.