

## ORGANIZATION AND THE FEASIBLE FORMAT OF A 'LARGE' FLORA

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In this age of vanishing natural resources, where we are witness to the final acts, or perhaps better said, the last scenes of the last act, of the destruction of our natural heritage on a global scale, it becomes ever more important to record for posterity the diversity of life that has existed on our planet. There have been numerous floras produced, of course. Nearly every geographic and political region of the world has had some success, in most cases very limited, however, in providing inventories of their most important natural heritage – their assemblages of native plants. Some of these attempts have been less than successful because they have been based on an unspoken but omnipresent principle that time is not an issue; that it is not a constant, and that one should strive for the most thorough product regardless of the amount of time necessary to do it.

I take the position here that time is not a variable in the organization and management of large floras, and that such projects have to be based on strong management principles. I take the position that the real problem in the production of floras is not the scientific content, but the management of the people and the resources that are mobilized to achieve the objective in a given amount of time. When one is racing the clock, time is the least expendable of the variables we have. It is for this reason that I propose that large floras must be organized so that there are clearly defined goals achieved within a specific time. I provide a set of basic premises or axioms with which large flora projects should be organized.

### BASIC PREMISES

- I. There is *no universal* 'ideal' format for a flora.
- II. The objectives of the project and the particular conditions under which that project operates determine the selection of a format.
- III. The particular conditions will always vary, and may include:
  1. Availability, quality, and quantity of collections
  2. Quality and quantity of practitioners
  3. Particulars and peculiarities of funding source(s)
  4. Pressure on natural resource base
  5. Quality of management

IV. All of this can, perhaps, be summarized in a 'flora' formula:

$$P = \frac{(R)(M)}{T} \quad \text{where}$$

P =	product
R =	resources
M =	manpower
T =	time

V. Availability of R is the most critical, primary part of this equation.

VI. Given R is sufficient quantity, achieving P is directly proportional to the management of R.

#### DISCUSSION

What are optimum conditions for one project may have no relevance for another. The format of a flora ideally needs to be established by the users of that flora. Since the primary users vary from place to place, the format will also vary. What may be relevant for scientific purposes for a large regional flora such as Flora Malesiana, may be irrelevant or useless to the educators and conservationists depending upon a local flora such as the Philippines. Therefore, the conditions of the given situation will always guide the selection of a format. The project should be handled in such a way that it is flexible enough to respond to such differing needs. This can be accomplished by a database management protocol that will allow such a flexibility.

In the Flora Malesiana example, scientific credibility is high, but the number of practitioners is low. That and the apparent lack of a strongly focused management concept guiding the project are potentially damaging to the image of Flora Malesiana because the funding sources and the natural resource base (i.e., the ecosystems whose plant components are covered by the project) are decreasing rapidly. Given an indefinite period of support as well as a more-or-less stable natural resource base the project could, literally, take indefinitely to complete. However, if the funding source is very limited and the natural ecosystems are in clear danger of extinction, there can be no effort spared to complete a large floristic project as quickly as possible. Therefore, again, a primary assumption in that time is the most limiting factor. This immediately sets this discourse apart from the reality of most projects of this nature for in most of these flora projects, time has been treated as being extremely elastic.

I have attempted to summarize the relationship between the product of a flora project, the funding resources, manpower and time in what I call a 'flora' formula as was given above. The product (P) is achieved by management of the resources (funding) available for it. If the resources are available in sufficient quantity, the manpower can be purchased, and, therefore, the product can be achieved within the value of (T) or time. Or, another way of saying the same thing, is that if Time is a constant, then achieving P is based entirely upon the management of R and M and, really, ultimately the management of R.

## CONCLUSIONS AND RECOMMENDATIONS

1. The quality of the product, which is based on regional taxonomic research, should be maintained within the concept of a stronger management approach to attain the product faster.
2. A stronger management approach is considered the most important issue and it is recommended that the services of an individual to manage the project and to interface with international funding agencies, and recruit and deal with collaborators in a systematic way, be obtained for the project.
3. Symbiosis can be achieved between Flora Malesiana and local/national projects and significantly increase the rate at which Flora Malesiana treatments appear, by fostering cooperation between the projects that would upgrade the contents of Flora Malesiana. Specifically, Flora Malesiana would benefit from local/national projects via:
  - a) the intimate field knowledge of local botanists: ecology and field characters;
  - b) their knowledge of ethnobotany and uses;
  - c) the use of local projects to enhance the field opportunities for Flora Malesiana botanists;
  - d) sharing illustrations and producing them in the Malesian region.
4. In view of the urgent need for an inventory of plant resources in the tropics, flora-managers should expedite the production of floras and widen their political and financial support by clearly defining their strategy and products. They should:
  - a) investigate the availability of external funding with a view to appointing a team of full-time flora writers and editors;
  - b) find funding for further inter- and intra-regional travel, for study leave and for short-term technical support for production of Flora treatments.
5. Flora Malesiana should encourage the establishment of an 'Expertise Centre' at the university of Leiden and should explore the possibility of a database system central to the Flora Malesiana project.
6. A flexible approach to floristic writing should include different formats and products for different audiences, including national planners, professional scientists and the general public.
7. Stronger interaction between participating organizations should be encouraged and the new technology will enable a wide range of information from the Malesian region, vital to the Flora Malesiana project, to be collected and disseminated much more effectively.

8. The aim of Flora Malesiana work should be the writing up of available material succinctly in the form of a concise flora which may, in many respects, be provisional, but which will lay the foundations for subsequent monographic work.
9. The current state of knowledge of families in the Flora Malesiana region should be assessed and used as the basis for setting a schedule for production of a concise Flora Malesiana.
10. In view of the shortage of manpower necessary to acquire materials ensuring a sound basis for Flora Malesiana, the available manpower must be used more effectively.