

# EARTHWATCH INSTITUTE FIELD REPORT

## SECTION I

**Project Title:** Restoring Vietnam's Forest

**Principal Investigator:** Dr Nguyen Van Sinh

### **Position/Affiliations:**

Senior Researcher  
Vice head of the Department of Plant Ecology  
Institute of Ecology and Biological Resources  
Vietnamese Academy of Science and Technology  
18 Hoang Quoc Viet, Nghia Do, Cau Giay, Ha Noi, Vietnam

### **Research Site:**

Cuc Phuong National Park, 20°15'-22°25'N, and 105°31'-105°41'E

**Local Management Status of the Research Site:** National Park

**Scientific names of primary species being studied:** *Aglaia lawii*, *Amoora aff. cucullata*, *Amoora gigantea*, *Anogeissus acuminata*, *Bischofia javanica*, *Carya chinensis*, *Caryodaphnopsis tonkinensis*, *Castanopsis symmetricupulata*, *Cryptocarya impressa*, *Dracontomelum duperreanum*, *Duabanga grandiflora*, *Dysoxylon cauliflorum*, *Garcinia oblongifolia*, *Gironniera subaequalis*, *Horsfieldia amygdalina*, *Hydnocarpus kurzii*, *Knema globularia*, *Lithocarpus areca*, *Lithocarpus pseudosundaica*, *Litsea balansae*, *Parashorea chinensis*, *Phoebe lanceolata*, *Pometia pinnata*, *Saraca dives*, *Streblus macrophyllus*, *Terminalia myriocarpa*, *Tetrameles nudiflora*

**Key Research Objectives:** The objectives of data collection and data analysis is to find answers to the following questions:

- Where is the position of a forest tree species in the forest structure, in the canopy or under the canopy?
- Is the species light demanding or shade tolerant?
- Where can a forest tree species grow, on the slope or in the valley?
- Does a forest tree species grow well on the dry soil or does it need a humid site?
- What is the light intensity needed for the regeneration of a forest tree species?
- What is the normal stem length and normal length and form of the crown of a forest tree species at mature ages when it grows in natural conditions?
- How different are the diversity indices of tree communities in primary forest and in secondary forest.
- What is the typical structure of the primary and secondary forests?

**Date this report was completed:** November 5, 2006

## Data Collection and Results

- a) Give a concise account of the data you have collected during the past field season.

This year we completed 12 transects with 129 plots in total. We have measured 3850 trees.

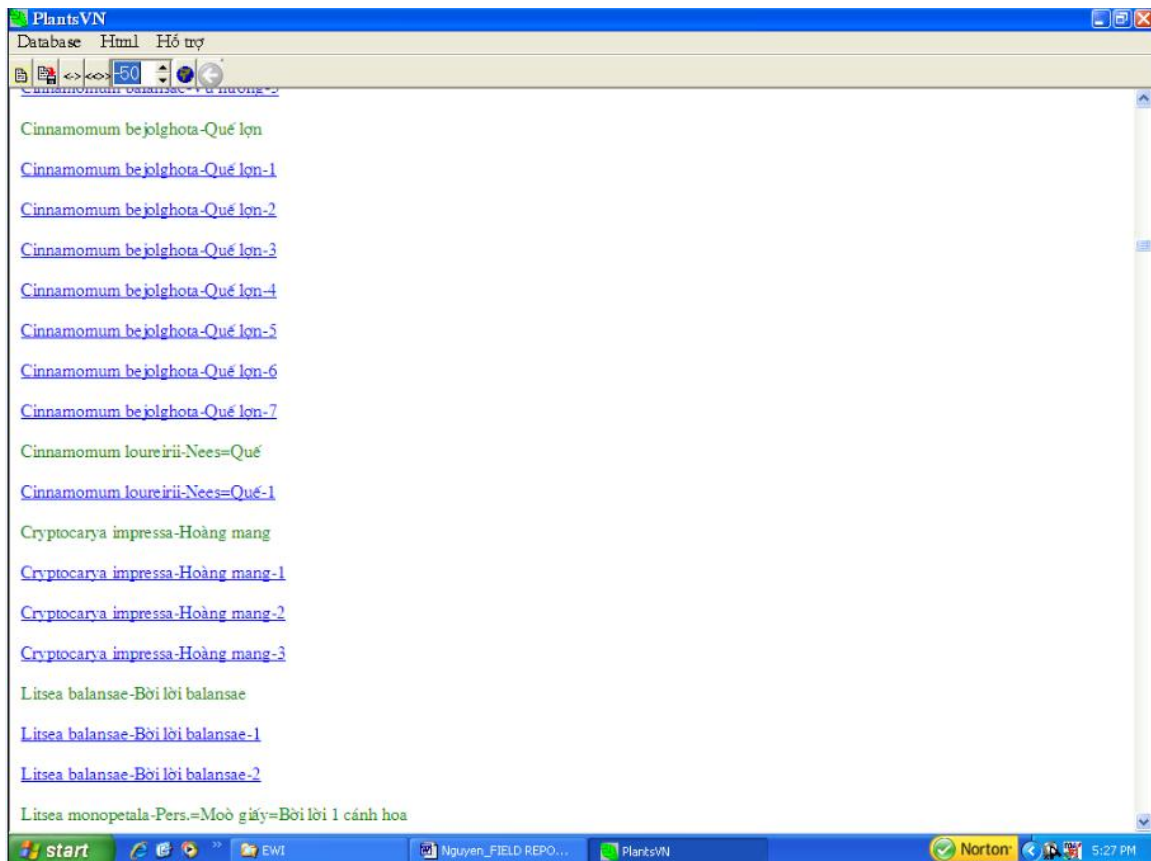
- b) What progress have you made towards achieving your original objectives?

The data collected this year and in previous years will allow conclusions to be drawn about the light demand of more than 10 native tree species.

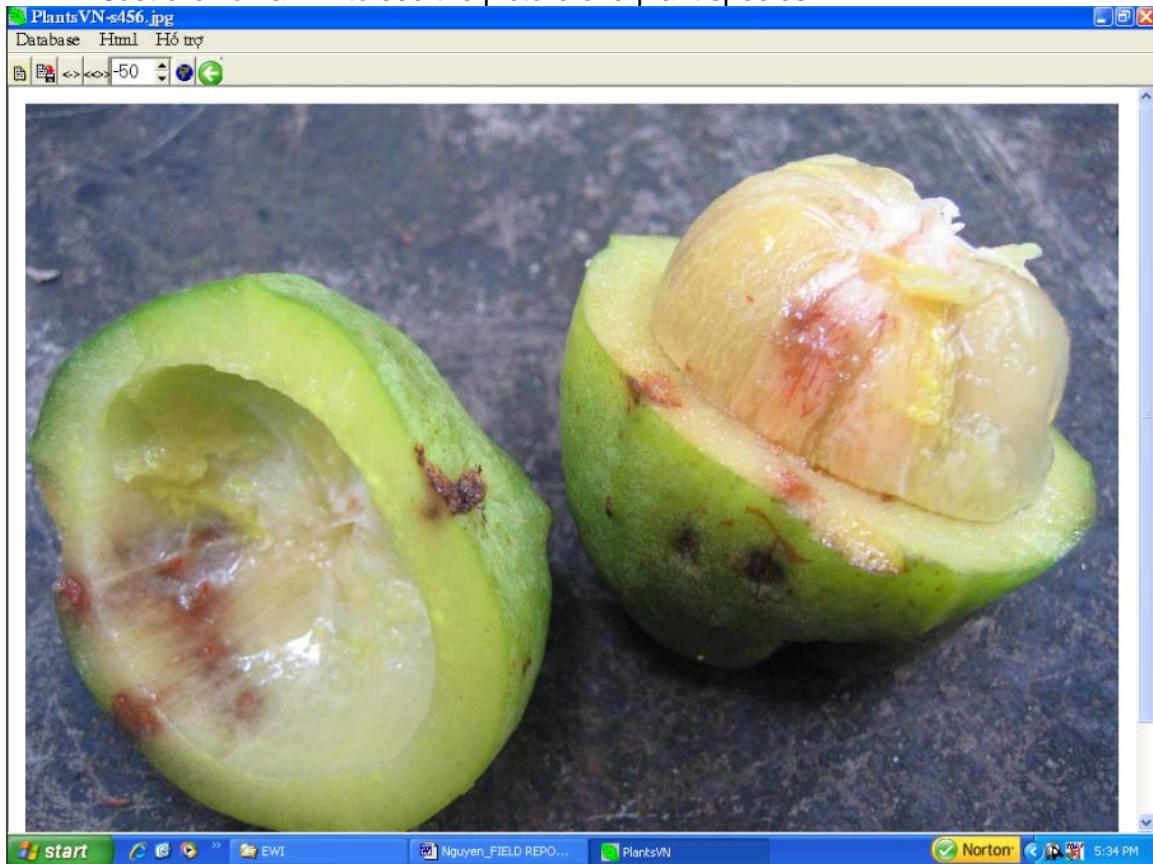
- c) Please provide a summary of your results.

In July this year I participated in the ATBC annual meeting in Kunming, China (<http://atbc.xtbg.ac.cn/Overview.shtml>) and made the following oral report on the results of my Earthwatch project: ***“A comparative study of two methods of assessment of the light condition under forest canopy: total radiation and PAR.”***

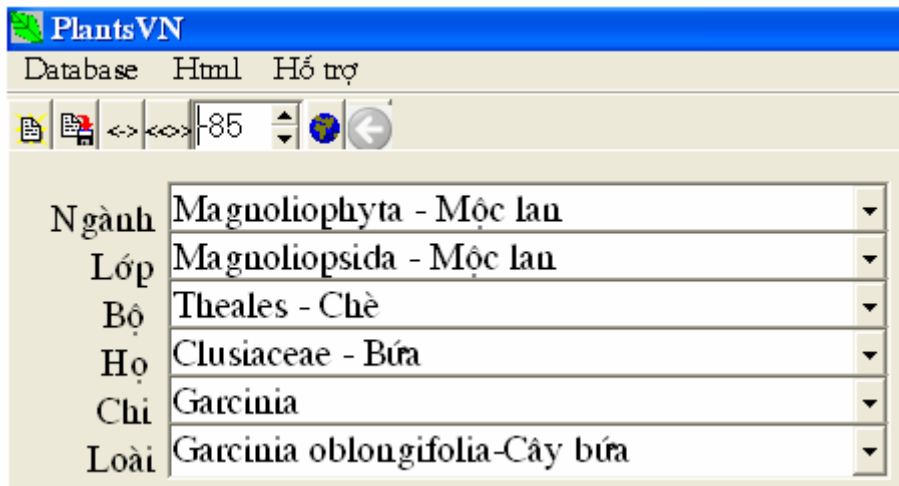
The database of plant species that includes photos I took during the field expeditions of the project has been updated with new photos of new plant species. This database should be interesting for students and foresters to learn about native forest plant species. It might also be useful for forest rangers and conservationists. The database can be used in the form of a web page:



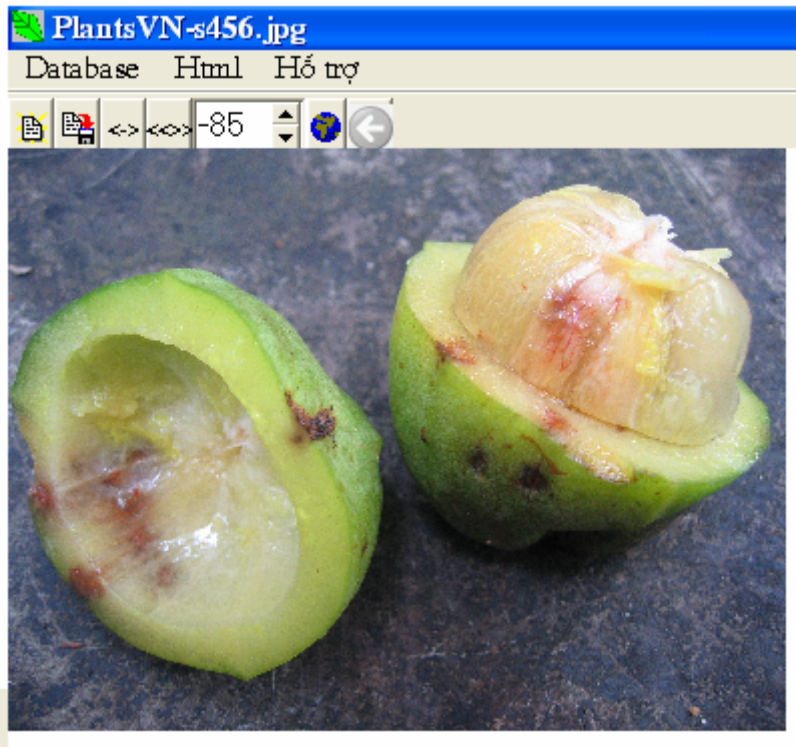
Just click on a link to see the picture of a plant species:



We can also use the database in the form of flora structure:



In this case we can resize and move the picture to see the part that interests us:



### Significance/Benefits of Research

a) What is/are the significance/benefits of your research at the following levels?

- Local

The database of plant species that includes photos I took during the field expeditions of the project might be useful for forest rangers and park staff.

- National

The results of my project will contribute to establishing a scientific basis for restoring forests using native tree species and for sustainable management of natural forest. After field research, some trial models of restoring forest using native tree species will be established on this scientific basis. It is expected that policy-makers will then believe in the success of restoring forest with native tree species. We will then have extensive areas of native forest ecosystems that will in their turn support faunal diversity, because only native forest ecosystems can provide diverse and appropriate habitats for the fauna.

The database of forest plant species that includes photos I took during the project's field expeditions might be useful for students and foresters to learn about native forest plant species.

- International

It is expected that the results of my research project and the success of my trial models will serve as examples for similar studies in other countries, which will support, develop and sustain valuable native forest ecosystems.

- b) How do your findings contribute to issues of sustainability?

The results of this research project will contribute to restoring forest with native tree species and to the sustainable management of natural forest. Management of natural forest is a sustainable way to manage forest resources. It ensures the continuous functioning of forest. It supports permanent income for forest farmers. It creates an equality of generations of one family (because every generation has to take care of the forest and every generation can use forest products).

### **Dissemination of Results**

In July this year I participated in the ATBC annual meeting in Kunming, China (<http://atbc.xtbq.ac.cn/Overview.shtml>) and made the following oral report on the results of my Earthwatch project: ***“A comparative study of two methods of assessment of the light condition under forest canopy: total radiation and PAR.”***

I will present my Database of Plant Species at a conference during the next year.