1er RAPPORT D’ACTIVITÉS ANNUEL

Titre du projet :
Développement du logiciel d’identification pour les arbres et leur pollen dans la région sud-est du Vietnam

Pays porteur du projet : VIETNAM

Coordinateur du projet : DANG LE ANH TUAN

Institution de rattachement du coordinateur de projet : UNIV. HO CHI MINH VILLE

Correspondant SEP : R. VIGNES-LEBBE

Montant total de la contribution SEP : 26.2 K€

Auteur(s) du rapport d’activité : Dang Le Anh Tuan

Date de(s) signature(s) :

Résumé du rapport d’activités :

As a research project sponsored by Sud-Expert-Plantes (SEP), we proposed to develop applications of IDAO (IDentification Assistée par Ordinateur) for forest tree species and their pollens collected in south-east region of Vietnam (SEP 353). For the first year of the project SEP 353 from March, 2008, two field trips were conducted in August, 2008 at 2 national parks: Cat Tien and Lo Go Xa Mat. There were 150 forest trees collected (including the known and unknown taxa) and about 2000 photographs were taken in total. All of the specimens already dried and we identified 105 taxa with 60 at species level among the collected specimens. For the specimens with flower, the pollens were already treated and preserved for further analysis. In the second year, we are going to:
- Continue enriching and completing the collection (sampling, drying, identifying, making the collection) for the forest trees and their pollens in 3 studied national parks during the second year of the project.
- Describe the botanical characteristics of indentified forest tree species and their pollens.
- Support to 2 graduation memoirs and 1 thesis in Cat Tien national park.
1. Objectifs :
(Environ une demi-page - Rappelez les objectifs du projet, tels qu’ils ont été présentés dans le formulaire définitif soumis à Sud Expert Plantes)

The objectives of the project are of:
1. To contribute to the improvement of knowledge of the flora, relating mainly to the trees, in several protected zones located in the south-east of Vietnam.

2. To bring further information as for the phenology of the species.

3. To preserve the species collected by supplementing the herbarium and the pollen bank within the University of the Natural Sciences of HCM City and the herbarium of the Institute of Tropical Biology in Ho Chi Minh City.

4. To create a data base relating to the species of trees and pollens of these same species.

5. To facilitate the research tasks and the teaching of botany and palynology by developing tools of assistance with the identification of the species of trees and their pollen, which will be available near the universities and institute of research to Vietnam (free distribution of CD Rom)

2. Partenariat :
(Rappelez les partenaires du projet dans le tableau suivant – Rajoutez des lignes si nécessaire)

<table>
<thead>
<tr>
<th>Mr/Ms</th>
<th>Prenom</th>
<th>Nom</th>
<th>Compétence</th>
<th>Localisation</th>
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<tbody>
<tr>
<td>Prof.</td>
<td>Kiet</td>
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<td>Dr.</td>
<td>Pierre</td>
<td>GRARD</td>
<td>Botanist &amp; IT expert</td>
<td>CIRAD, France</td>
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<td>Dr.</td>
<td>Thi Mai</td>
<td>Bui</td>
<td>Palynologist</td>
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<td>Mr.</td>
<td>Quoc Trung</td>
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<td>Mr.</td>
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<td>UNS, Vietnam</td>
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<tr>
<td>Mr.</td>
<td>Anh Tuan</td>
<td>Dang Le</td>
<td>Lecturer</td>
<td>UNS, Vietnam</td>
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3. Méthodologie et moyens mis en œuvre :
(maximum une demi-page)
We carried out sampling in the forests of the south-east of Vietnam in order to obtain knowledge of the tree species of the low-land forests in the south of Vietnam. There are 3 national parks including: Cat Tien (74 000 ha) which is also classified like holds biosphere of UNESCO, Lo Go Xa Mat (18 700 ha) and Bu Gia Map (26 000 ha). According to an estimate (personal communication), this sampling should be enable to gain about 350 species of forest trees corresponding to the area of south-east Vietnam.

The methodology applied to the samples is as follows:
- Collection
- Drying with the drying oven
- Identification
- Assembly of the samples
- Storage in the herbarium
The methodology applied to pollens is after Erdtman (1943, 1960 and 1969), it is composed of
the following stages:
- Dehydration
- Acetolyse
- Alkalisation
- Sifting
- Colouring
- Assembly
- Etiquettage
- Storage of the bases

The data-processing development is followed:
- Choice of the characters and states of characters (from those existing in the applications already
carried out) and additions of new characters corresponding to the local flora,
- Modification of the structure of the data bases and the software,
- Filling of the data bases,
- Treatment of the photographs for trees and pollens,
- Adaptation of the graphic interface (the chart of each character and states of character using
corel Draw drawings)

4. Travaux réalisés :
(Maximum deux pages)

Activity 1: Sampling
The first activity was sampling of forest tree species to enrich the collection or to supplement
specimens for known species. That implies regular missions during the years not only to take into
account variabilities in the phenology of the species but also to ensure the complete collection of
samples (sampling sheet, flower and fruit) for each species. To carry out these collections, the
survey was be defined in each national park in order to cover as much as the forest types (forests
of regeneration, secondary forests, deciduous forests, evergreen forests). The choice of these
circuits will be made after consultation of the vegetation map and topographic map and
observation on field. Using binoculars to see if the tree species was new in comparison with the
collection or if the trees are flowering. For each tree chosen, the various operations will be
conducted:
- Numbering of the tree (painted on the trunk),
- Statement of the geographical co-ordination using the GPS,
- Sampling of the tree (3 samples if possible),
- Preparation for drying (installation of the samples in sheets of newspapers),
- If the flowers are available, taking away of pollens,
- Filling of the card of observation (dates and place of collection, nature of the collection,
  characteristics environmental),
- Photography of the samples, the tree and its characteristics (bark, spines, base trunk...).

Activity 2: Making of the collections
The samples were treated at the laboratory of Botany in the University of Natural Sciences. With
the identified specimens, we completed the tree and pollen collection.
For the tree collection:
- Drying,
- Identification
- Mounting on the paper sheet
- Labeling the specimens
For the pollen collection:
- Pollens were treated and micro-slides were prepared with label,
- Pollens are photographed under the light microscope,
- Pollens are preserved in the pollen bank.

4.1 - Contexte et difficultés rencontrées :

Almost of the collection are with foliar, just a few trees are in flowering and fruiting.

4.2 – Calendrier d’activités :
(Si votre formulaire de soumission comportait un calendrier d’activités, veuillez détailler l’avance ou le retard pris par rapport à ce calendrier initial)

Activity 1: From 11 to 22/08/2008,
Activity 2: From 08 to 11/2008.

4.3 - Missions :
(Joindre les rapports de mission en annexe)

2 field trips at Cat Tien and Lo Go Xa Mat national parks during 11 to 22/08/2008.

4.4 – Résultats :
(A mettre en regard des résultats attendus tels qu’indiqués dans les items 6 et 7 formulaire définitif qui avait été soumis en réponse à l’appel d’offres)

During the first year of project SEP 353 from March, 2008, the 2 field trips were conducted in August, 2008 at 2 national parks: Cat Tien and Lo Go Xa Mat. There were 150 forest trees collected (including the known and unknown taxa) and about 2000 photographs were taken in total. All of the specimens already dried and we identified 105 taxa with 60 at species level among the collected specimens. For the specimens with flower, the pollens were already treated and preserved for further analysis.

4.5 – Publications, communications en cours ou réalisées :

Identification tool for trees in Tan Phu forest, Dong Nai Province, Vietnam, oral presentation in the first symposium of « Flore du Cambodge, du Laos et du Vietnam ».

4.6 – Thèses, mémoires, enseignement et animation scientifique :
Leaf plasticity during ontogeny of *Dipterocarpus alatus* Roxb. under different light environments in Cat Tien National Park forest, Dong Nai Province, Vietnam (in progressing of first year).

5. Perspectives :
(Maximum une demi-page)
- Continue enriching and completing the collection (sampling, drying, identifying, making the collection) for the forest trees and their pollens in 3 studied national parks during the second year of the project.
- Describe the botanical characteristics of indentified forest tree species and their pollens.
- Support to 2 graduation memoirs and 1 thesis in Cat Tien national park.
6. Analyse critique de l’équipe sur SEP :
(Maximum une demi-page - Quels sont les principaux regrets que les équipes nourrissent vis-à-vis des instances en charge du fonctionnement de SEP ? - MAE, SCAC, Correspondants, Coordinateurs, Régies IRD, Secrétariat Exécutif)

7. Remarques générales et conclusions :
(Maximum une demi-page)
During the first year of project SEP 353 from March, 2008, the 2 field trips were conducted in August, 2008 at 2 national parks: Cat Tien and Lo Go Xa Mat. Almost of the collection are with foliar, just a few trees are in flowering and fruiting. All of the specimens already dried and we identified 105 taxa with 60 at species level among 150 collected trees. The pollens of specimens with flower were already treated and preserved for further analysis. For the second year of the project, we are going to:
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Signature du coordinateur de projet :

[Signature]

Dang Le Anh Tuan