

CONTRIBUTION TO THE KNOWLEDGE OF TREE SPECIES OF LAO PDR WITH IDAO SYSTEM

Juliana Prospero 1, *, [@](#) , [Vichith Lamxay](#) 2, *, [@](#) , B.r. Ramesh 3, [@](#) , N.

Ayyappan 3, [@](#) , [Jean-Marie Bompard](#) 4, [@](#) , Sarah Cardinal 4, [@](#) , Pierre Grard 3, [@](#)

1 : Botanique et Bioinformatique de l'Architecture des Plantes (AMAP) - [Site web](#)

Institut national de la recherche agronomique (INRA) : UR0931, Institut de recherche pour le développement [IRD], CNRS : UMR5120, Centre de coopération internationale en recherche agronomique pour le développement [CIRAD] : UMR51, Université Montpellier II - Sciences et techniques

Bd de la Lironde TA A-51/ PS 2 34398 Montpellier cedex 5 - France

2 : Faculty of Science, National University of Lao PDR, Vientiane, Lao PDR (NUOL) - [Site web](#)

3 : Institut Français de Pondichéry, India (IFP) - [Site web](#)

11, Saint Louis Street Pondicherry – 605 001, India - Inde

4 : Opération Canopée (OpCanopée) - [Site web](#)

Opération Canopée

6, rue Rivet 69001 LYON - France

* : Auteur correspondant

The implementation of biodiversity conservation actions depends on our capacity to measure and mapping their components. To achieve this important work it is necessary to know the identity of the species in order to organize their inventory. With the aim to contribute to reducing the “taxonomic impediment”, we use the interactive computer-aided identification system called IDAO. Within the framework of the Forest Biodiversity Inventory in Lao PDR (Opération Canopée, Hallé et al.) undertaken in 2012, we enrich an existing knowledge base (BIOTIK project) on a major "hot spot" of biodiversity: the rain forests of Annamite Mountain range of Lao PDR. In this study, we focused on the Phou Hin Poun National Park, Khammouane province, Lao PDR. This location offers a variety of contrasting sites in a karstic valley. The use of new tools allowing the access to the canopy facilitates the studies on trees. Thus, among more than 300 trees samples, 115 were analyzed, 104 were identified at species level and 11 at genus level. Our work shows a high trees species diversity of which more than 10% would be new for the country.

We think that making available such results of the widest audience with a simple and efficient identification tools is one of the necessary conditions for the protection of tropical forest resources and particularly trees. In this sense, IDAO system allows a non-expert user to identify species in the field. In effect, it was designed for training purposes and to help non-botanists in the identification process. Unique in its kind, this identification system is completely graphic. It built a theoretical plant following botanical characters selected by the user. To mention only a few of its benefits, it differs from classical dichotomous keys offering a multi-entry system, allows identification of incomplete samples and certain level of observational errors. IDAO enables users to make determinations of taxa by an algorithm, in effect, generating rules as required at any stage of identification, as like the way by which experts discriminating taxa by using which character(s) should be used in various circumstances.

Such a powerful tool needs to be fed. We emphasize the needs for more plant collecting and identification work in this region to improve training and capacity building in plant taxonomy through IDAO approach.

