

NUTMEG

Genetic diversity of the emblematic food tree species *Myristica fragrans*, *M. fatua* and *M. argentea* (Indonesian Nutmegs) : applications to genetic resources conservation and sustainable management.

ABSTRACT

The main purpose of the project NUTMEG is to characterize the genetic diversity and structure of nutmeg species (*Myristica fragrans*, *M. fatua* and *M. argentea*) in their native Indonesian distribution to underpin strategies of conservation and use. These species are food tree species, whose seeds and maces are exploited as spices. Getting information on the distribution of their genetic diversity within and between wild and cultivated populations will help contributing to the conservation, sustainable management and use of these species. An Indonesian faculty member from Lampung State Polytechnic (LSP), Jaky Kusuma, will conduct the project trained by IRD researchers (N. Scarcelli and J. Duminil (SAFOODNet Project, 1502-503), UMR DIADE, DYNADIV team).

Expected outputs. By conducting this research, we expect to:

- (i) acquire a large collection of plant samples covering the natural and cultivated distribution of *M. fragrans*, *M. fatua* and *M. argentea*;
- (ii) develop nSSR for these three species that will allow characterizing their genetic diversity;
- (iii) provide clear information on the genetic diversity distribution within and among species' populations, identify native (wild) populations and inform on the domestication status of cultivated populations;
- (iv) evaluate if inter-specific gene flow occurs (or occurred) between species;
- (v) train J. Kusuma in molecular biology, bioinformatics and genetics;
- (vi) establish a durable collaboration on the study of Southeast Asia biodiversity between IRD and LSP;
- (vii) contribute to the development of conservation and sustainable management strategies to support mace and nutmeg agriculture. Altogether the project will represent a strong contribution to the conservation and use of genetic resources of three socio-economically important food tree species.

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Project number : 1502-504

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Project type : AAP

Research units in the network :

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Flagship project : no

Project leader : Nora Scarcelli

Project leader's institution : IRD

Project leader's RU : DIADE

Budget allocated : 19764 €

Total budget allocated (including co-financing) : 19764 €

Funding : Labex