# A01 - Tropical modern pollen collection and pollen rain study as tools for palynological research in Jambi (ABS project)

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## Summary and goals

We developed this project within the Access and Benefit Sharing (ABS) project in collaboration with the A01 subproject of the CRC990. The project is currently ongoing (from May 2014 to April 2015) and the research includes vegetation survey, collection of flowers for pollen collection and the setting of pollen traps for pollen rain-vegetation analysis. The development of the first modern pollen collection at UNJA will provide an invaluable resource for present and future research activities in which pollen identification is required (Quaternary investigation, phenology of plants, plant-pollinator interactions, etc.). The analyses of pollen rain and vegetation relationships in the ecosystems under study in project A01 will be used as a tool to calibrate the palaeovegetation reconstructions

## Methods

### Pollen traps, vegetation survey and flowers collection
The Behling pollen traps will be set in the 20x20 plots in the locations under study. Specimen of the dominant herbaceous plants species will be collected for identification together with all trees with a DBH ≥5cm. Flowers will be collected and documented for species identification and processed in UNJA for pollen analysis

### Pollen analysis
The flower collected and the content of the pollen traps will be analysed using standard methodologies for palynological analysis

## Project locations

The project area spans through the whole Jambi Province, from mountainous regions to the coastal peat-swamp forests via inland lowland rainforests and lowland transformation systems (Fig. 1)
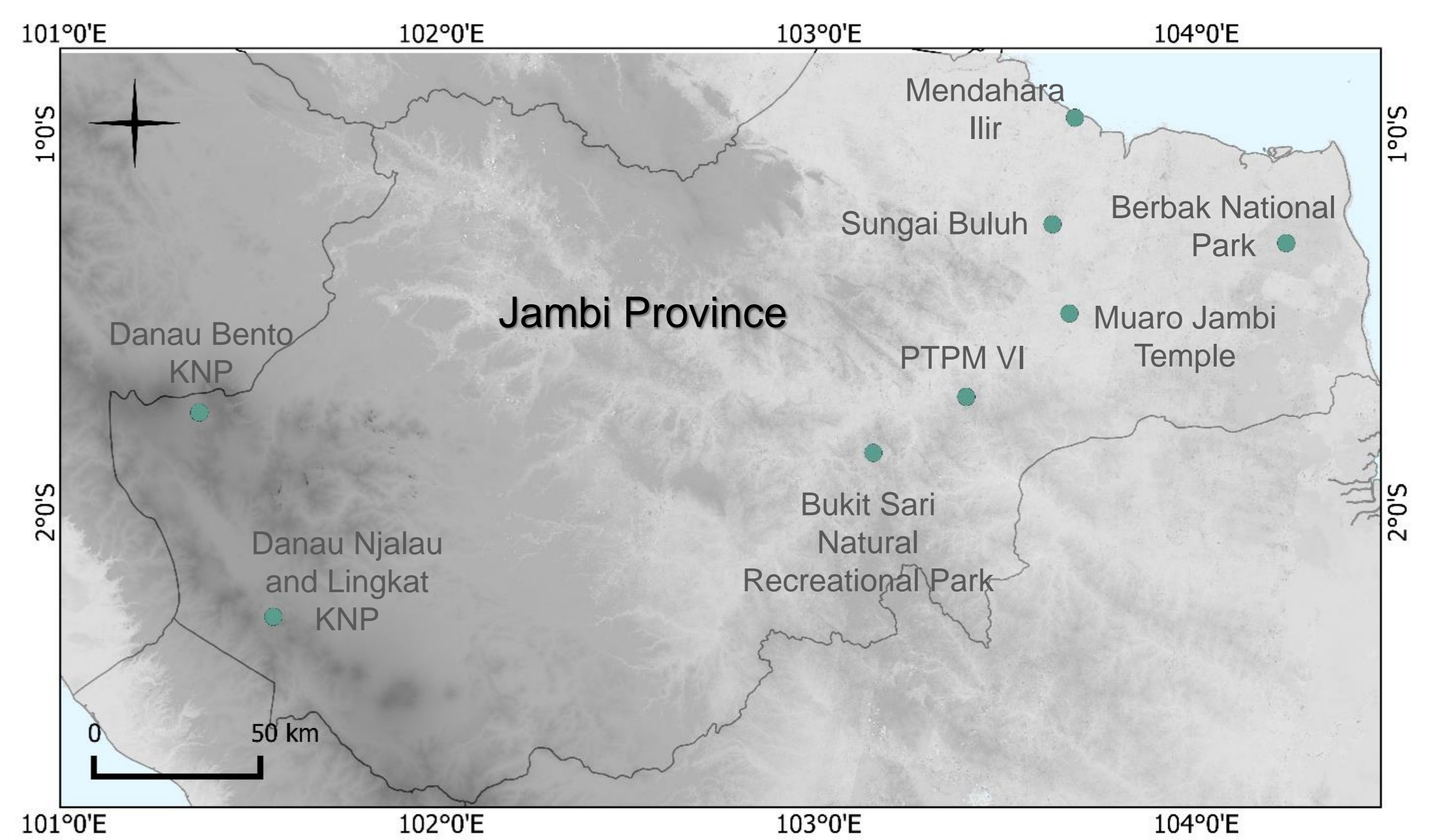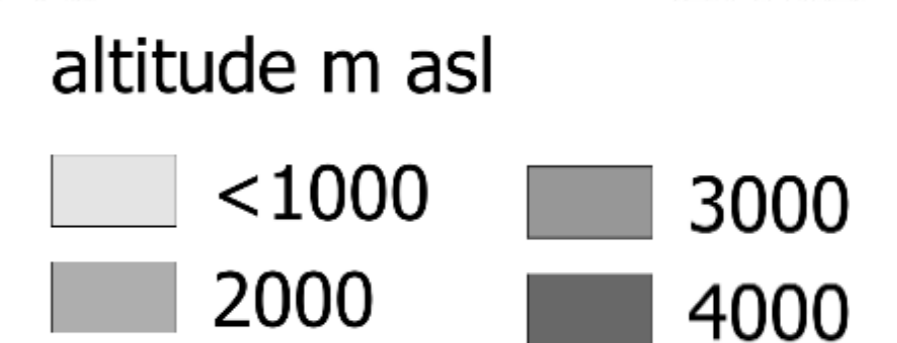


**Fig. 1** locations covered by the project (KNP=Kerinci National Park)

altitude m asl
<1000   3000
2000   4000

## Progress to date

### Vegetation survey
Vegetation surveys were carried out so far in Kerinci National Park (Danau Njalau and Lingkat) and Bukit Sari Natural Recreational Park. Dominant tree families in Kerinci are Dipterocarpaceae, Fagaceae, Ixonanthaceae, Clusiaceae, Anacardiaceae, Burseraceae, Ebenaceae and Lauraceae. The plots in Bukit Sari are dominated by Apocynaceae, Anacardiaceae, Sapotaceae, Arecaceae, Pandanaceae and Ebenaceae
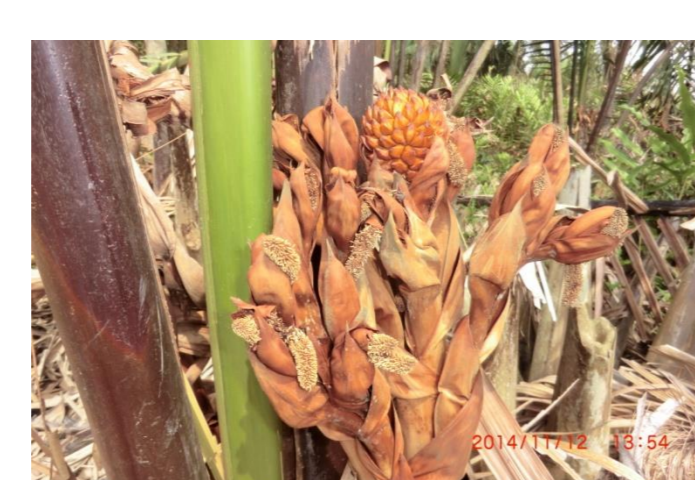


*Ficus rumphii* (Moraceae)

*Dyera castulata* (Apocynaceae)

*Fagraea fragrans* (Gentianaceae)
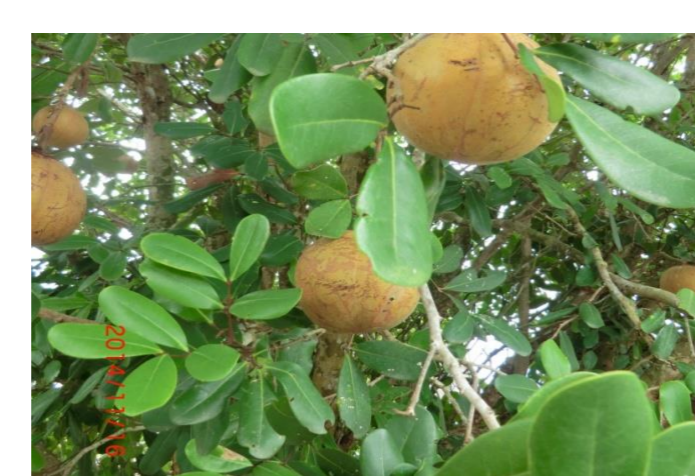
*Xylocarpus granatum* (Meliaceae)

*Nepenthes aristolochioides* (Nepenthaceae)

*Nypa fruticans* (Arecaceae)

*Alstonia scholaris* (Apocynaceae)

### Pollen traps

A total of 20 pollen traps were installed in 2014 in the Kerinci National Park (Danau Njalau and Lingkat), in the Bukit Sari Natural Recreational Park, in Sungai Buluh, in the PTPN VI oil palm plantation and in Medahara Ilir. After one year the pollen traps will be collected and analysed to reconstruct the pollen rain production and distribution at the different sites and compared to the vegetation composition in the plot

### Flower and pollen reference collection
Flowers for pollen reference collection were taken from Kerinci, Bukit Sari, Mendahari Ilir, Sungai Buluh and Muara Jambi Temple. So far ca. 150 new pollen taxa have been added to the collection in UNJA. The number will increase as the collection is still ongoing
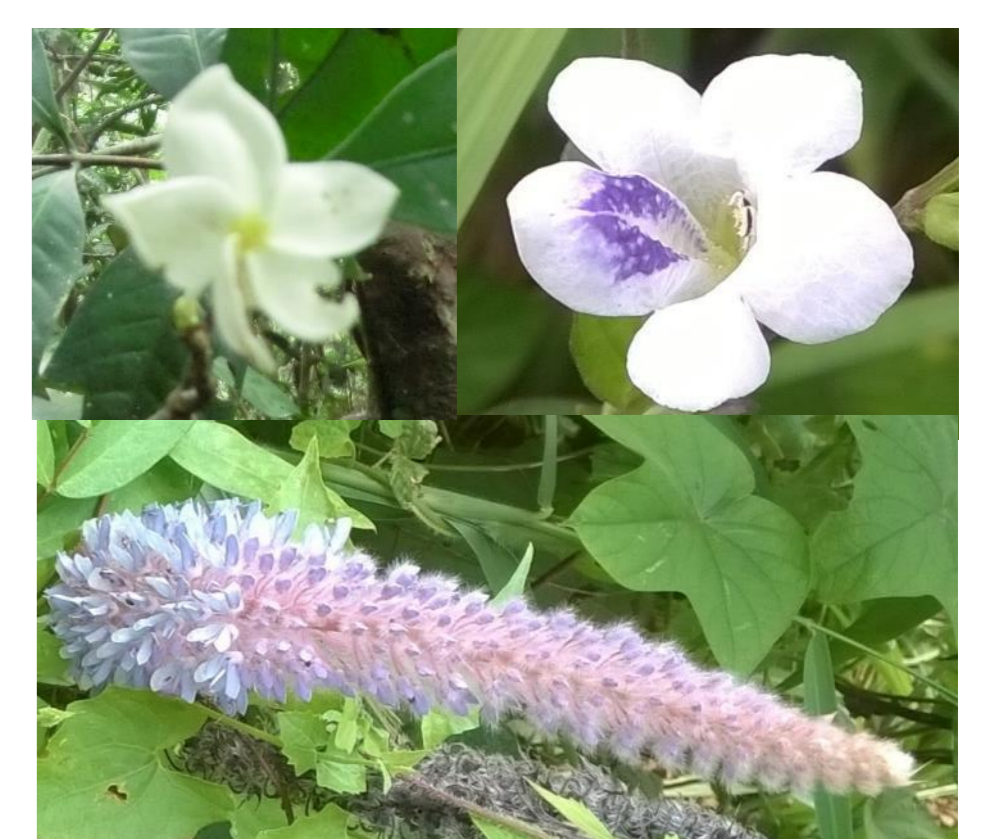
## Prospect and expected benefit
Eventually the establishment of the modern pollen reference collection in UNJA (the first one in Indonesia), will increase the quality of the investigations within the A01 project research. Additionally, opportunities will open for UNJA to be included in research projects at the national and international levels and put the bases for further developments of palynological research and related practical applications in Jambi and Indonesia