

Sedera Elie Fils NY AINA RANAIVOSON

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Madagascar

EDUCATION

- 2015 -2017** : **MSc.** Systematic and Sustainable Management of Plant Diversity -
Dpt. of Plant Biology and Ecology, University of Antananarivo.
Dissertation: Re-vegetation of abandoned sapphire mining sites of
Ilakaka.
- 2012-2013** : **Hons.** in Plant Biology and Ecology, University of Antananarivo.
- 2011-2012** : **BSc.** in Plant Biology and Ecology, University of Antananarivo.
- 2009-2011** : **DUES** University of Antananarivo.
- 2008-2009** : **Baccalauréat** D, Jules Ferry High School, Faravohitra-Antananarivo

WORK EXPERIENCES

- June 2017** : **Dept. Botany, University of Antananarivo:** Assessment of riparian forest
destruction in the sapphire mines of Ilakaka, Sakaraha District.
- Mapping and evolution of ecological niches of majesty palm (*Ravenia rivularis*)
 - Ethnobotanical survey of plants used by sapphire miners
- Nov 2016-May 2017** : **Dept. Botany, University of Antananarivo/Malagasy Cane and Sugar
Centre:** inventory of sugarcane varieties and diseases – Ambilobe and
Brickaville.
- Variety and pathology mapping
 - Technical supervision of 2 Master's students on systematic studies
of sugarcane
- Feb-Oct 2016** : **Animator, TITEM project (Tahiry Indraman'ny Tantsaha Eto
Madagasikara), Akadinondry-Sakay:** raising awareness about in
composting Reforestation and organic culture
- Nov-Dec 2015** : **Coordination of field teams, Climate Witness project, Amoron'
Onilahy Protected Areas, with WWF and UVVT (Univers Vintsy Tana):**
Supervision of investigators in Maninday, University of Toliara
- Sep-Oct 2015** : **Field assistant** of a PhD student on a Paleoecology of Baobab species in
the Menabe and Antsimo Andrefana Region:
- Baobab and surrounding waters coring's
 - Mapping of enchanting zones
 - Systematic sampling of baobab-associated species
- Apr 2015** : **Field assistant** on the impact of trade of the carnivorous plant "*Drosera
madagascariensis*", Manjakandriana:
- Ethnobotanical survey of stakeholders in the sector
 - Stock assessment

- Mar 2015** : **Consultant** in a private reforestation programme in Ankazomenavahatra, Ambohimandroso, Antanifotsy District.
- Establishment of a nursery
 - Guidance on reforestation methods
- Jan-Feb 2015** : **Field assistant** in a study of Malagasy aphyllous vanilla species in the Atsimo Andrefana, Anosy, Androy and Ihorombe Regions:
- Ethnobotanical survey on the use of aphyllous vanilla
 - Comprehensive inventory of associated species
- MSc. Field work** on the dynamic of pioneer species in the abandoned mining sites of Ilakaka
- Field assistant** in a study of Euphorbia geophytes in southwestern Madagascar
- Jul-Nov 2014** : **Vintsiala Organizer** during the World Festival of Lemurs with GERP Madagascar, October 25th to 31st, 2014 in Antananarivo.
- Apr-May 2013** : **Internship** on the conservation and enhancement of biodiversity in the Botanical and Zoological Park of Tsimbazaza.

Computing skills

Statistical	:	R, RStudio, Xlstat, ADE4
GIS	:	Qgis, ArcGis, Envi, SASPlanet, Google Earth
DTP	:	Adobe Photoshop, Adobe Illustrator, Sketchup

Languages

- Malagasy** : Mother tongue
- French** : Good
- English** : Average
- Japanese, German** : Notions

Others

Driving License AB

Hobbies: hiking

Association member: Vintsiala Club, IRC member (US Embassy Madagascar)

ABSTRACT

Spontaneous vegetation succession in disused sapphire artisanal mining sites at Ilakaka (Southern Madagascar).

More than 75% of the sapphires marketed worldwide come from small-scale mining operations. However, no efforts to rehabilitate the sites have been made so far, so the current flora would be a mixture of relict vegetation, remaining degradations of the existing flora before the beginning of exploitation, and natural recolonization of the disturbed land. This vegetation could provide several advantages comparable to those obtained during spontaneous succession: (i) species are better adapted to local conditions, (ii) the natural value of the site is generally higher than that of sites restored with technical support, (iii) the intermediate stages of plant succession are more frequently used as refuges for animals and (iv) the costs of site rehabilitation are lower.

The general objective of this work is to collect topographical, geographical, floristic, ethnobotanical and ecological data in order to establish a strategy for the rehabilitation of the sapphire mining sites in Ilakaka. The specific objectives are to (i) identify the different modes of exploitation and assess their impacts on the topography of the site, (ii) study the plant successions that have developed in a chronosequence of abandoned sites, (iii) identify plants useful for miners in order to determine the impacts of their harvesting on the flora and (iv) analyse the factors that contribute to the destruction of riparian forest along the Ilakaka River.

The following 4 hypotheses are tested as part of this work:

- (H1) Topographical alterations are mainly due to shallow and small-scale excavations due to rudimentary mining resources and low investment;
- (H2) Ruderal species and legumes are the pioneer species in early succession, as they can adapt to poor soil and disperse quickly;
- (H3) miners use vegetation for health care and fuelwood collection, as in most rural areas in Madagascar;
- (H4) riparian forest is destroyed by the removal of wood from mining activities and by silting up the river bed after cleaning gravel from wells.

In order to understand the spontaneous revegetation of sapphire post-mining sites at Ilakaka, floristic relevés were carried out on a chronosequence of abandoned sites at Ampandramitsivala, Mangarahara I and Mangatoka aged 7, 11 and 13 year-old, respectively. These data were supported by a characterization of the damage caused by the small-scale mining operations on the topography and supplemented by a list of the plants used by miners. In addition, the degradation of the riparian forest along the Ilakaka River was evaluated by an analysis of satellite images taken between 2002 and 2016

A STATEMENT OF INTEREST AND INTENT

Currently holding a Master's degree in Plant Biology and Ecology, more precisely in systematics and Sustainable Management of plant biodiversity, I would like to participate in your E2M2: Ecological and Epidemiological Modeling workshop.

This training will allow me to acquire the basics and strengthen my capacities as a future researcher that I intend to become, and it is also an essential step in the pursuit of my studies and my research project.

My recent interest in R software has made me understand my shortcomings in some areas such as choosing a powerful and appropriate test for my studies, projects and publications. This software as an open source software offers packages. It requires a good knowledge of its own data but above all a strong statistical capacity.

In the long term, I would like to strengthen my capacity in modelling for my doctorate focusing on post-mining restoration with different scenari depending on plant community succession.

I am very keen to participate in this workshop and share also my knowledge on plant ecology, data collection and analysis.

Thank you in advance for the attention you will give to my application. For further information you may consider useful, feel free to contact me. Please find my CV attached to this letter.

Aware of the work required to achieve this, I have the necessary skills and motivation to participate in this workshop.

I thank you in advance for the attention you will give to the study of my file, and I am at your disposal for any other information you may consider useful for the finalization of my admission and kindly ask you to find, attached, my CV and an abstract.

Please accept, Sir, the expression of my kind regards.

Sincerely
Sedera Elie Fils NY AINA RANAIVOSON