

# PACE Net SUVA 2013



**CNRT**  
**NICKEL**  
& son environnement

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# An agency to support research about Ni & its environment

**National label**

**GIP= Public/private governance**

## Background

Large mineral resource  
Biodiversity hot spot  
Multi-ethnic communities

## Objective

Better management of Ni mining resource compatible with the conservation and enhancement of natural and human environments

## Scientific approach

Miners and public authorities demands for research actions lead to scientific programming and calls for projects



## Running projects (2009-2012)

- After external & internal validation (CSI)
- 15 projects selected and financed
- Budget 2.7 M€ (1 to 4 years projects)
- > 150 senior researchers / 60 based in NC
- > 60 post-graduate students
- 34 scientific institutions / 6 foreign
- Balanced distribution in 3 thematic axis



# Nickel & technology

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## Regolith mapping

- Hyperspectral remote sensing mapping
- Radiometric signature of mining facies

## Lateritic ore

- Typology of lateritic weathering mantles
- Analysis of metal content (Ni and Co)
- Rheology of nickel ores in cargos
- In situ measurement of ore grades

## Restoration technics

- Management of top soils for restoration

## Geological CO2 storage

## Hydrogeology of UM massifs





# Nickel & society

## Nickel and health

Direct environmental toxicity of nickel  
Toxicity of mine lateritic dust  
Typology of asbestos minerals and  
outcrops in ultramafic massifs

## Nickel, governance & development

Mining activity and local governance  
Sites value on mining lands



# Nickel & environment

Dynamics of ecosystems on ultramafic soils

Ecologic corridors

Functioning of small mining catchment basins

Monitoring of the impact of mining

- New marine monitoring indicators

- A guide to monitor marine environments

- Mangrove monitoring system

- Protection of threatened animal species  
(Petrels, Reptiles)

Indicators for fresh water quality

Doline diagnosis and typology



# The next programming

6 new large themes are opened in working groups

- .Ecological restoration
- .Catchment basin: from mine to reef
- .Ophiolite : parent rocks to ores
- .Regulation & best practices
- .Mine & society: gender, youth, « small miners »
- .Wealth, toxicity and ecotoxicity of metals and asbestos

Program proposed by the Scientific Committee  
Validation by the board of members april 2013  
Call for projects mai-june 2013



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# Results & benefit



Scientific knowledge  
Innovative techniques  
Guides, atlas, handbook  
Transfert of technology  
Expert appraisalment

for miners : best practices

for public authorities : reinforce regulation

for scientists : contribution to sustainable development





# Prospects

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Scientific cooperation with leader mining countries (Australia, Canada..)

NC high level of expertise on all mining and environmental issues in tropical lateritic environments

Sharing experiences with developing countries especially with west pacific islands





Goro mine  
↓

↑  
Yate

Thank you for attention

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