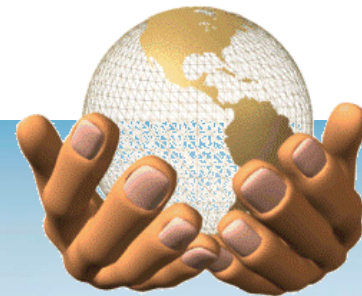


# The Vetiver Network International Awards (ICV6 : Danang Vietnam)

“Vetiver System : Empowering Sustainable Development”

5<sup>th</sup>-8<sup>th</sup> May 2015

Danang Technology University,  
Danang Vietnam



# **Vetiver for mine Rehabilitation :** **Padaeng Zinc Mine,** **Mae Sot District, Tak Province**



# Topic

- General Information of Zinc Mine Project
- Environmental Rehabilitation
- Vetiver for mine rehabilitation

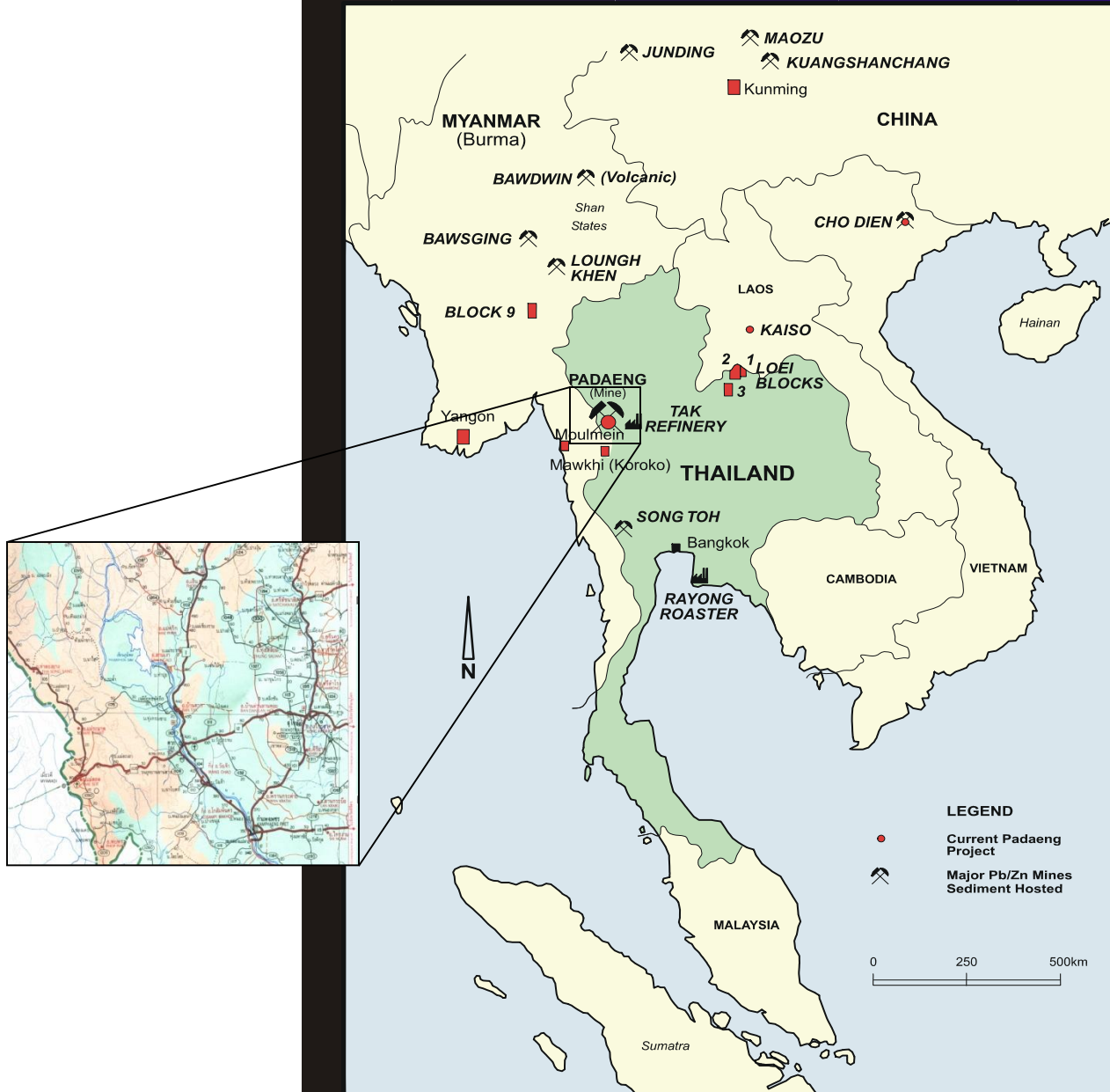
# **I. General Information of Zine Mine Project**



# Padaeng Mine

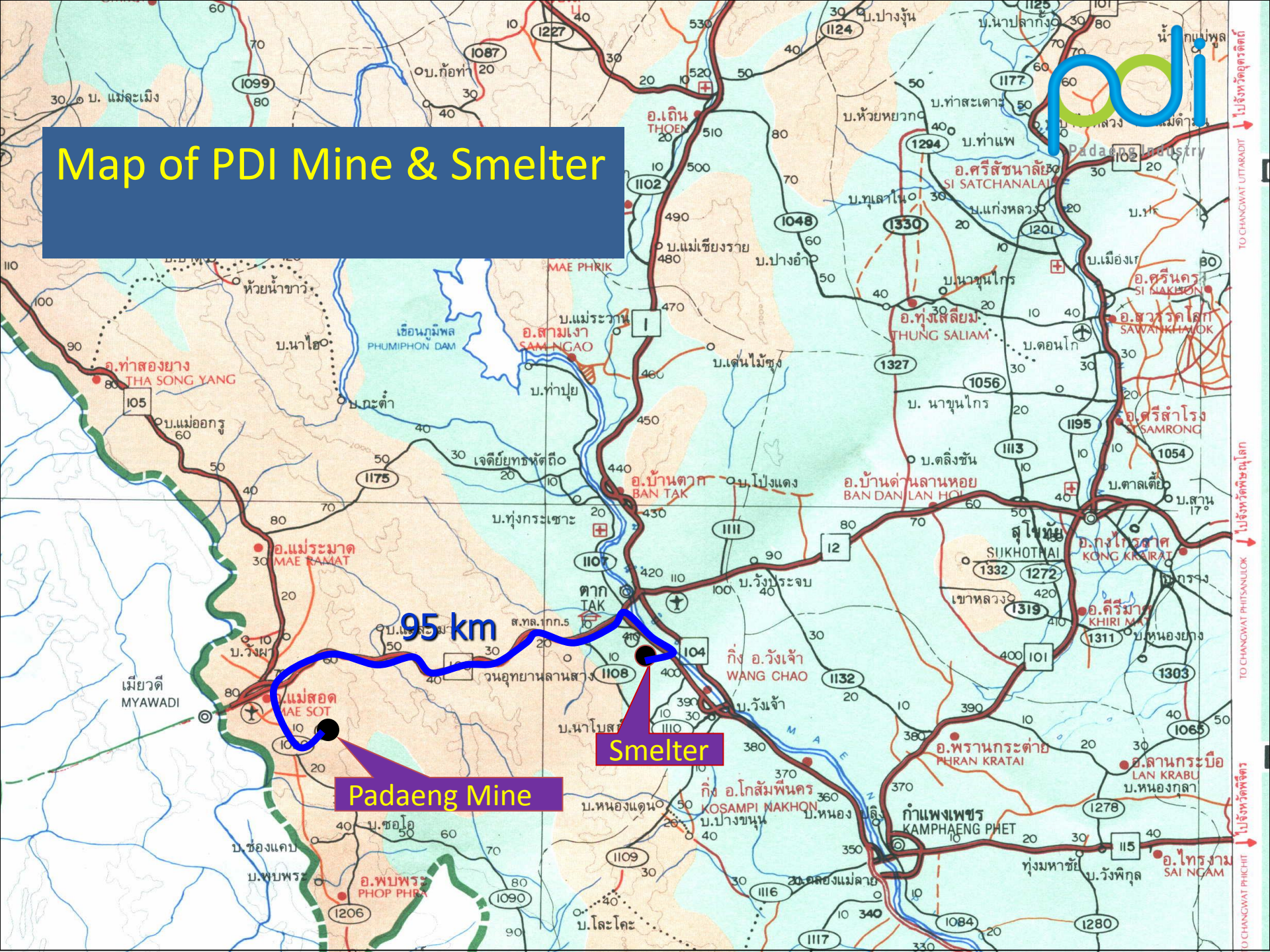
- Zinc Mine in Thailand
- Zinc oxide ore
- Started 1984
- Ore Production 150,000 MT/year
  - High grade ore 85,000 ton/year @20 %Zn
  - Concentrate ore 65,000 ton/year @25 %Zn

# PADAENG INDUSTRIES PROJECT LOCATION MAP





# Map of PDI Mine & Smelter



Padaeng Mine

Smelter

95 km

TO CHANGWAT UTTARADIT  
TO CHANGWAT PHITSANULOK  
TO CHANGWAT PHICHIT



# Open Pit Mining



# Overburden haulage by Trucks



To Overburden collecting area



# Overburden collecting area



# Ore haulage by heavy equipment



to crushing plant





# Crushing Plant



Low Grade Ore  
6-8 %Zn

High Grade Ore  
20 %Zn





# Low Grade Ore Feed to Flotation Plant

# Concentrate @ 25 %Zn

**Flotation Plant**



**Zinc concentrate Cake**

# Ore Transportation to Tak Smelter





## II. Environmental Rehabilitation

## Concept for Environmental Rehabilitation of Padaeng Mine

- Rehabilitation in-between Mining Activities
- Set Rehabilitation Fund
- Non-contaminated Topsoil Procurement
- Vetiver Grass Planting
- Local Tree Planting

2003



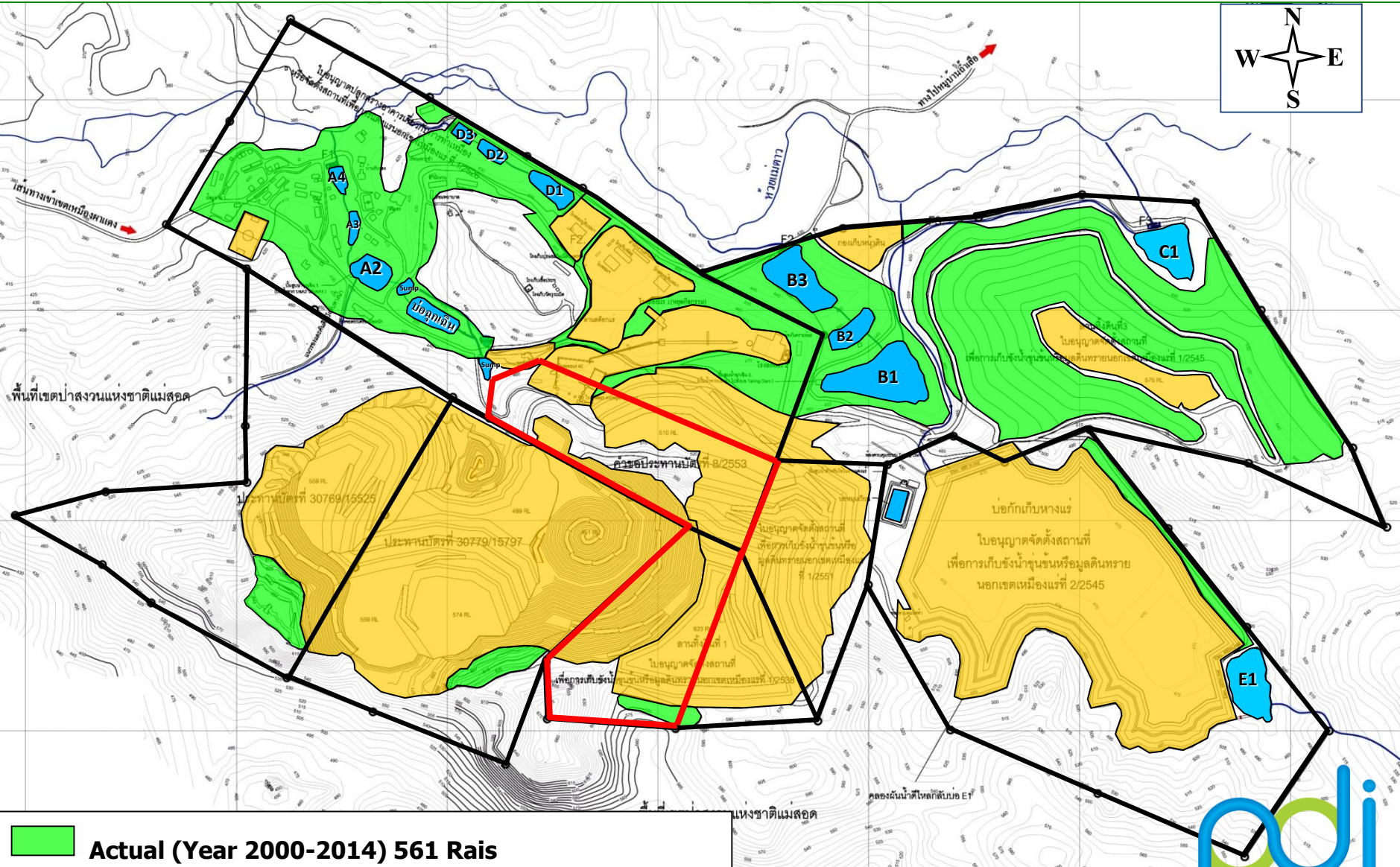
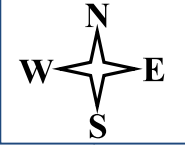
2013





2023

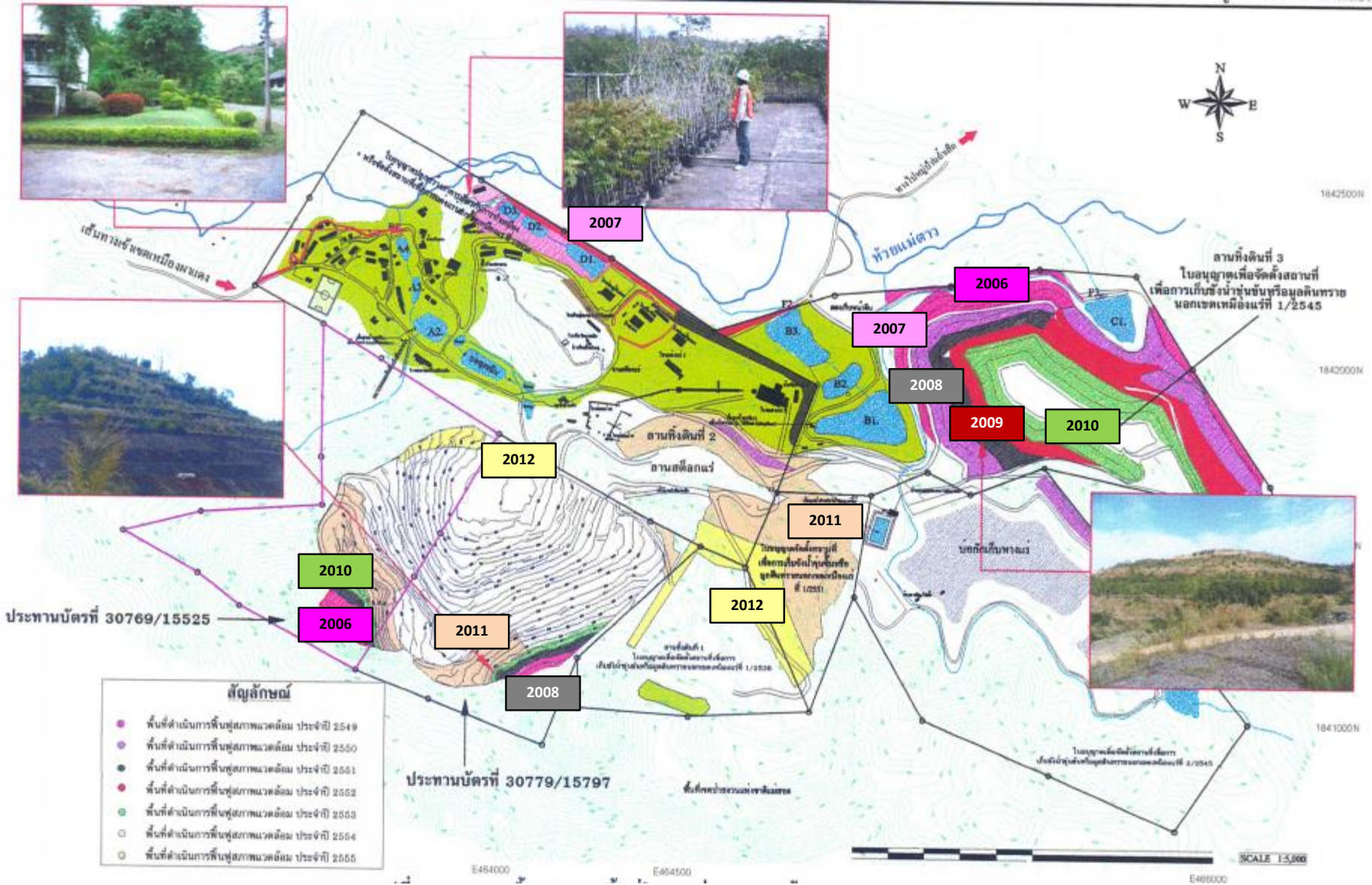


# Environmental Rehabilitation Plan



-  **Actual (Year 2000-2014) 561 Rais**
-  **Plan (2015-2018) 334 Rai**





ประทานบัตรที่ 30769/15525

ประทานบัตรที่ 30779/15797

- สัญลักษณ์**
- พื้นที่ดำเนินการฟื้นฟูสภาพแวดล้อม ประจำปี 2549
  - พื้นที่ดำเนินการฟื้นฟูสภาพแวดล้อม ประจำปี 2550
  - พื้นที่ดำเนินการฟื้นฟูสภาพแวดล้อม ประจำปี 2551
  - พื้นที่ดำเนินการฟื้นฟูสภาพแวดล้อม ประจำปี 2552
  - พื้นที่ดำเนินการฟื้นฟูสภาพแวดล้อม ประจำปี 2553
  - พื้นที่ดำเนินการฟื้นฟูสภาพแวดล้อม ประจำปี 2554
  - พื้นที่ดำเนินการฟื้นฟูสภาพแวดล้อม ประจำปี 2555

1842500N

1842000N

1841000N

E484000

E494500

E46000

SCALE 1:5,000

# Rehabilitation Fund

## Structure of the Fund

-Total	<u>MB 97</u>
-Top soil purchasing	MB 50
-Plantation	MB 22
-5 years monitoring after mining	MB 25

If any fund remains after rehabilitation, it will be donated to the community



# Topsoil Covering



# Topsoil Covering



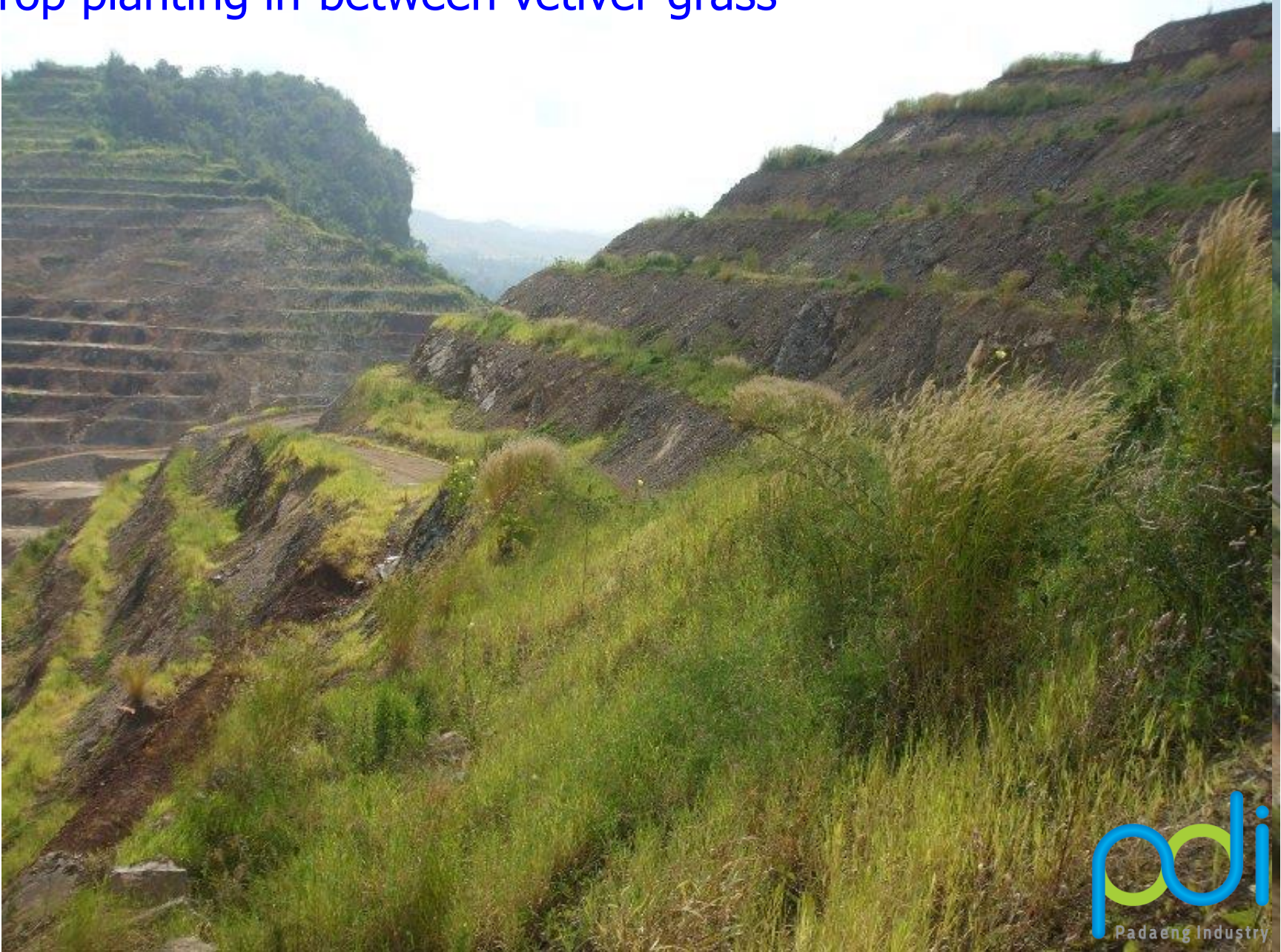


# Topsoil procurement





# Crop planting in-between vetiver grass





## Local trees planting





# Local trees plantation





# Rehabilitated area protection





# Animated Photo of Overburden Collecting Area after Mining



**Next 10 years**

# Animated Photo of Flotation Plant Area after Mining



**Next 10 years**



# III. Vetiver for mine Rehabilitation

# Vetiver grass species collection





# Vetiver grass planting by villagers around the mine





# Vetiver grass planting by villagers around the mine





# Present Padaeng mine, one of the biggest place of vetiver grass plantation in Thailand





# Slope stable by vetiver grass



Erosion if without vetiver grass





# Sediment reduction during raining by vetiver grass





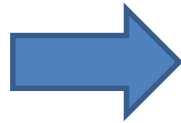


Princess Chakri Sirinthorn visit, 2009.





2009



2014



**Princess Chakri Sirinthorn last visit, 2013.**





# PADAENG INDUSTRY

หญ้าแฝกกับการฟื้นฟูสภาพแวดล้อมในเหมืองผาแดง



**Vetiver for mine Rehabilitation :**  
**Padaeng Zinc Mine, Mae Sot District, Tak Province**

# Zinc... essential for Life

[www.padaeng.com](http://www.padaeng.com)

