

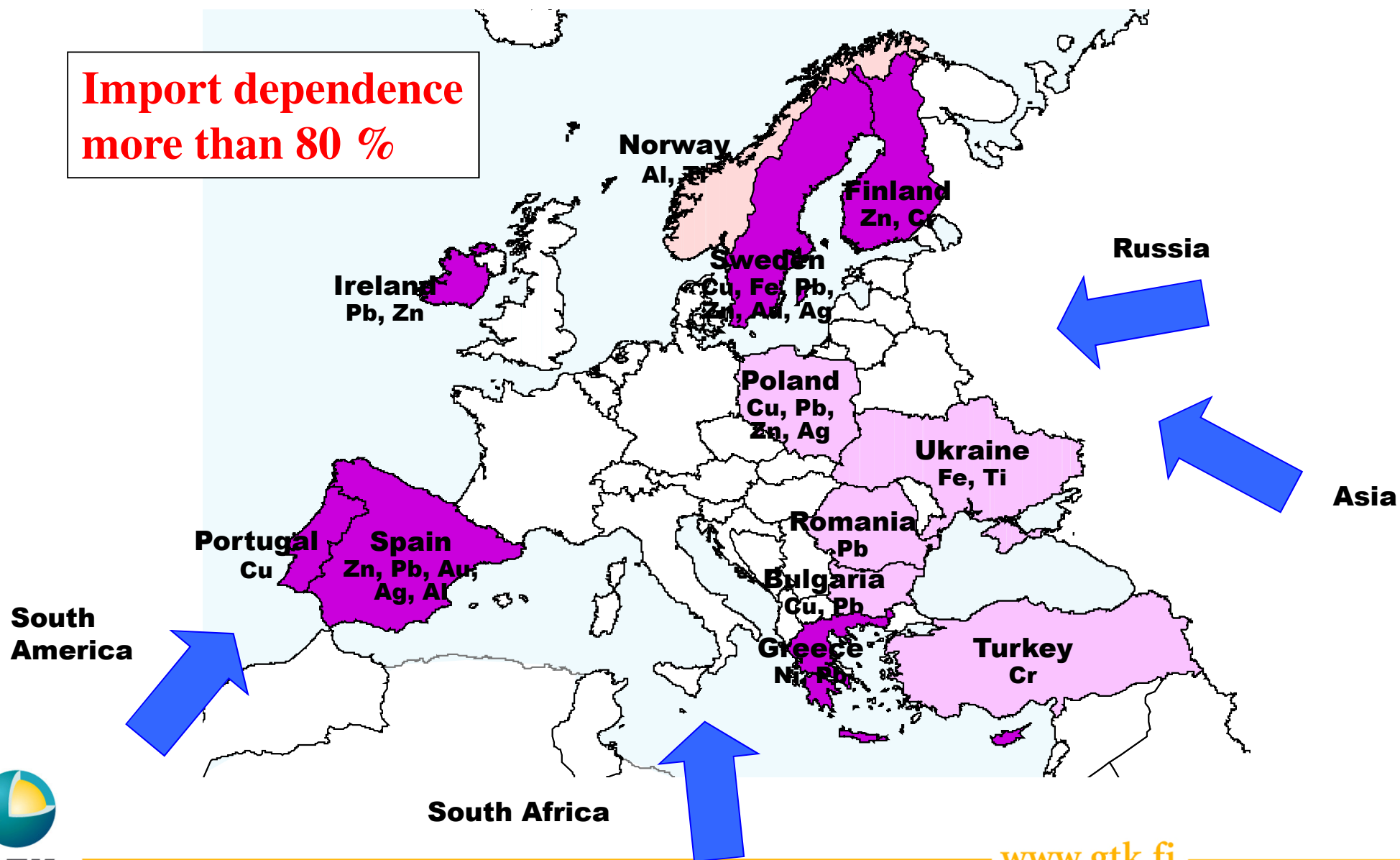


**Northern Sparsely Populated Areas (NSPA) Forum  
22 September 2011  
Kuopio, Eastern Finland**

**Geological Survey of Finland  
Northern Finland Office, Rovaniemi  
Kimmo Pietikäinen, Risto Pietilä**

# Raw materials imported to EU

**Import dependence  
more than 80 %**

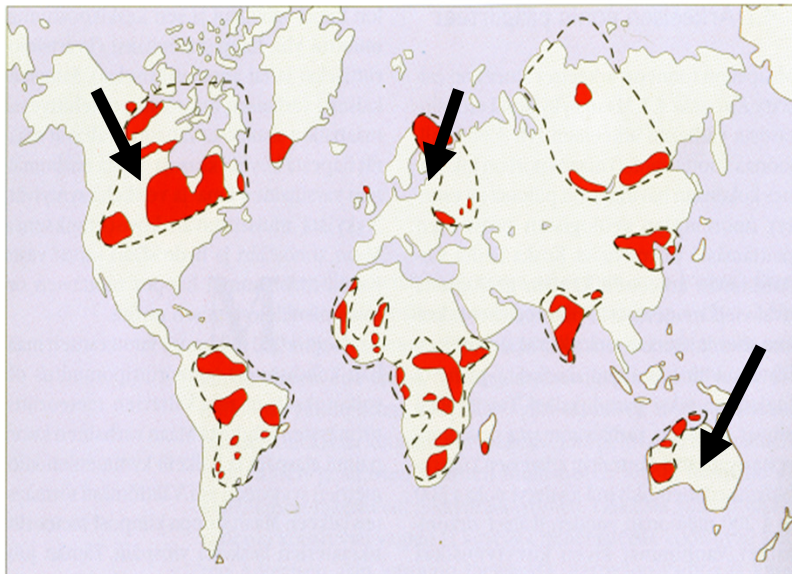


# GEOLOGY – Reason to explore

## Fennoscandian Shield

### EU's Major Prospective Region

- Similar to Canada & Australia
- Under-explored terrain
- Open to new entrants
- Metallic ores, industrial minerals



Highly prospective region



# Luckily, the problem has been recognised!

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN  
PARLIAMENT AND THE COUNCIL

The raw materials initiative — meeting our critical needs for growth and jobs in Europe

{SEC(2008) 2741}

Securing reliable and undistorted access to raw materials is increasingly becoming an important factor for the EU's competitiveness and, hence, crucial to the success of the Lisbon Partnership for growth and jobs. The critical dependence of the EU on certain raw materials underlines that a shift towards a more resource efficient economy and sustainable development<sup>1</sup> is becoming even more pressing. It is therefore appropriate to develop a more coherent EU policy response as suggested by the Council in May 2007.<sup>2</sup> This Communication

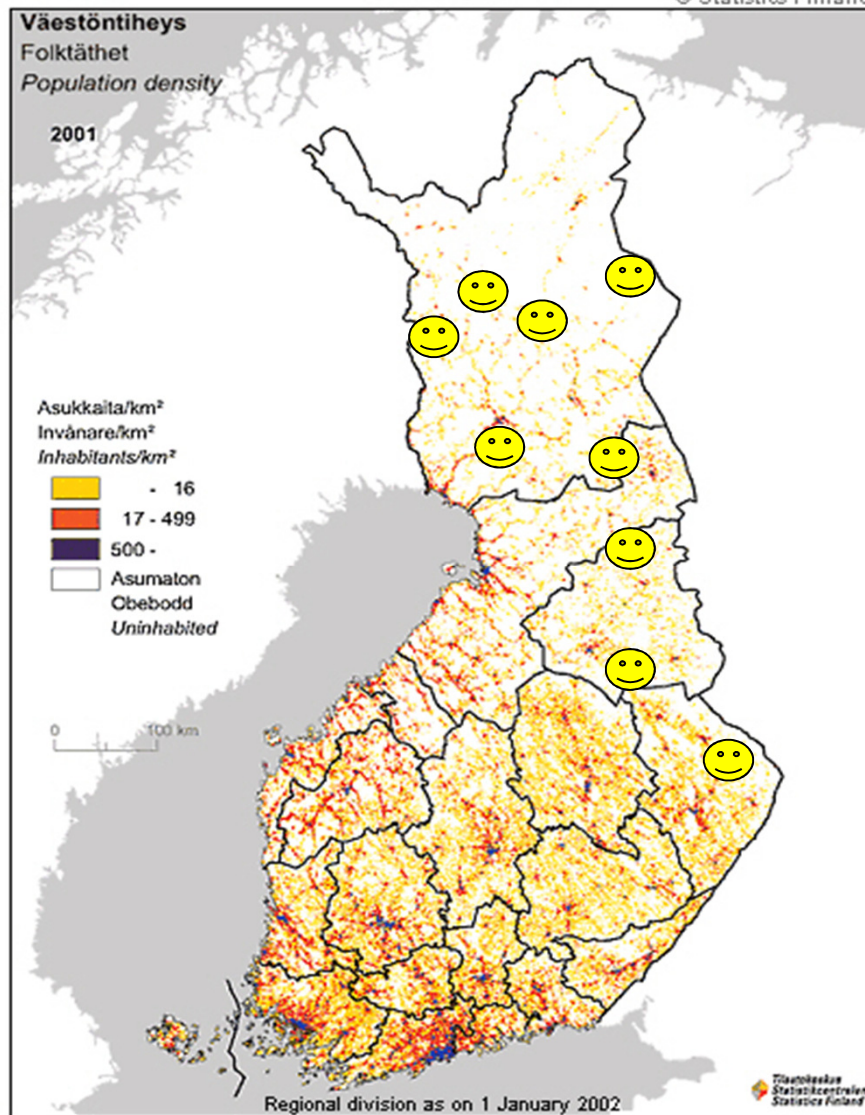
**CO-OPERATION AND CONSTRUCTIVE DISCUSSION  
BETWEEN ENVIRONMENTAL AUTHORITIES AND EXTRACTIVE INDUSTRY IS NECESSARY.**

# **WHAT can be done in order to improve EU's domestic raw material acquisition?**

- **Focus on EU's mineral policy. Commitment is needed. Finland's Mineral Strategy is a good example of governments will.**
- **The Commission and member states should think over the actions in order to avoid crucial conflicts towards the environment:**
- **On the other hand:**
  - **For example, national interests to be considered towards other interests in the society (like in Ontario, Canada where national interest is number one)**

**EU directives concerning nature conservation was set in 1990's when social and economic situation in Europe was "normal ". Also there was an excess production of metals.**

**This was due to good times. We have seen recently that good times won't last forever? Therefore we should not nail our future based on short term "feeling good" ideas.**



**Population density of Finland.  
Equals to the number of industrial jobs.**

### **Impact of mining to the regions:**

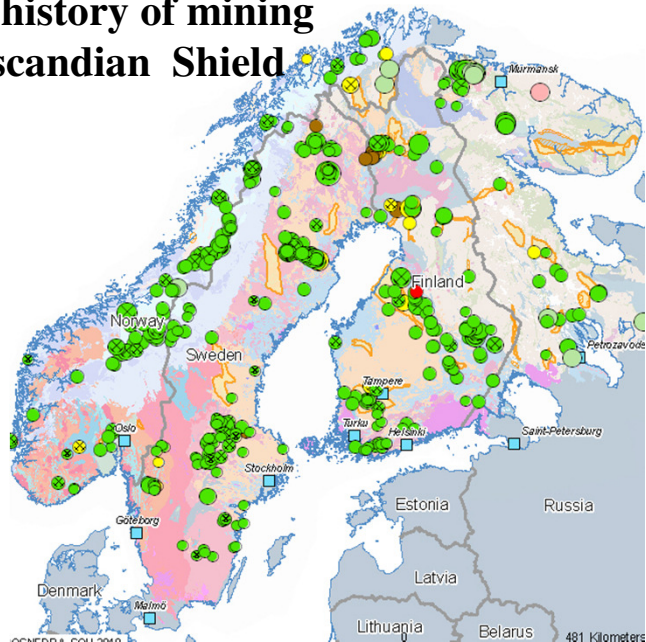
- **Most of the mining projects are in rural areas where the unemployment rate is high.**
- **Municipalities benefit of taxes and returnees**
- **Investments in infra**
  - roads
  - railways
  - electric grid
  - health
  - education

→ **Sustainable development**

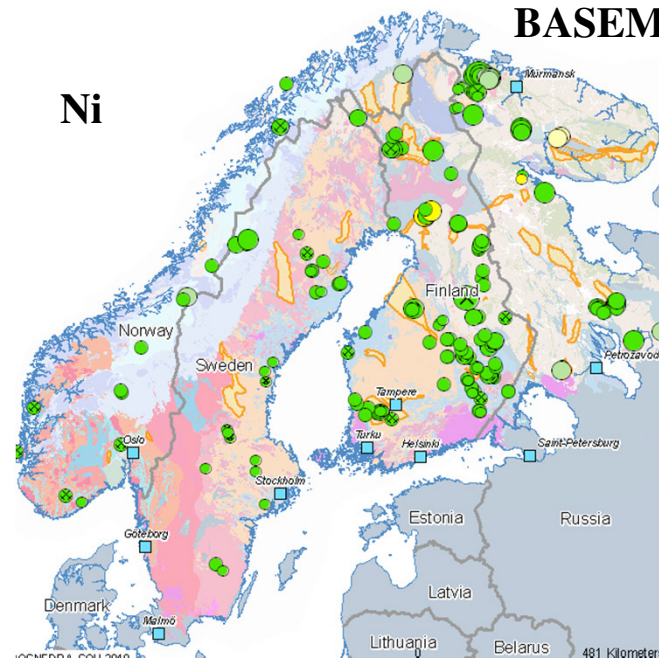


## Relevant history of mining in Fennoscandian Shield

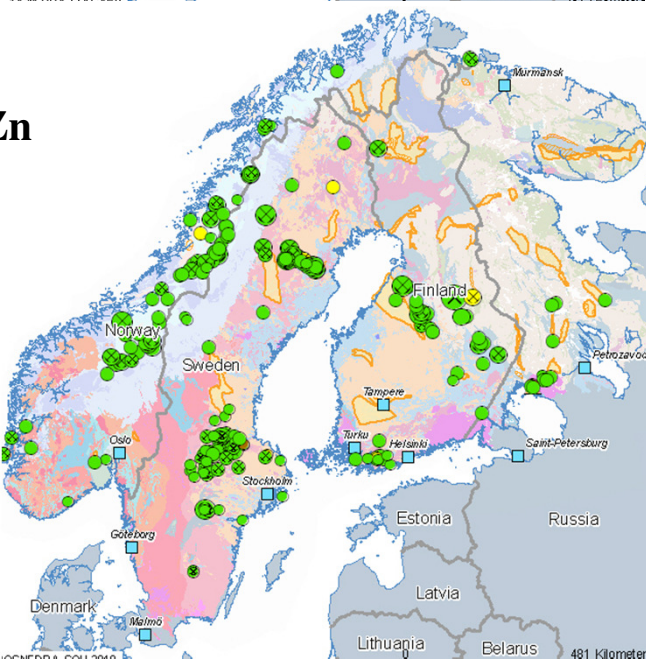
**Cu**



**Ni**



**Zn**



**Fe**



## BASEMETAL DEPOSITS



## Gold

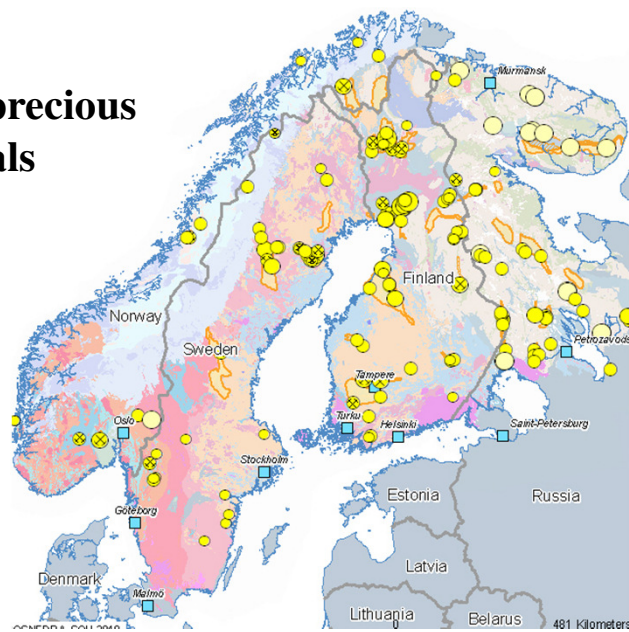


## PGE



## PRECIOUS METALS

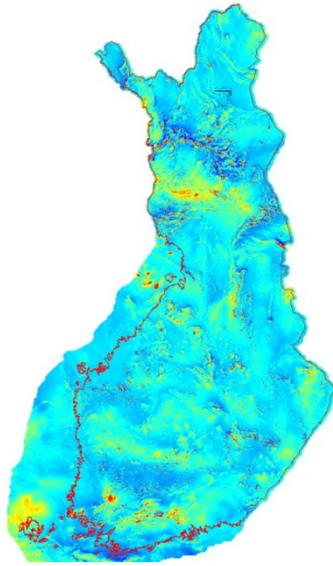
## All precious metals



## Hi-tech metals Li



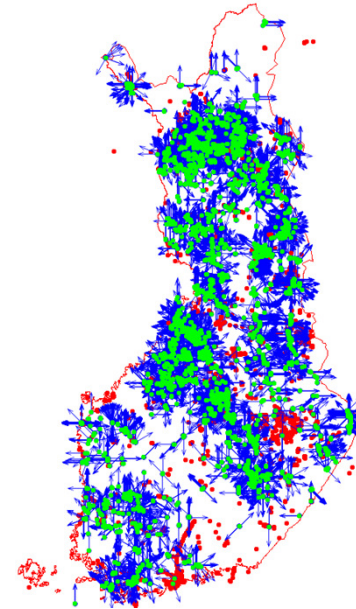
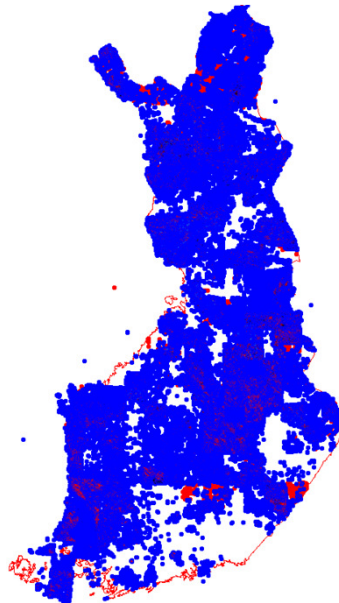
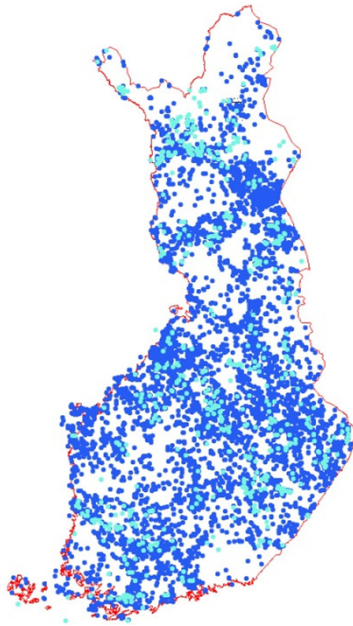




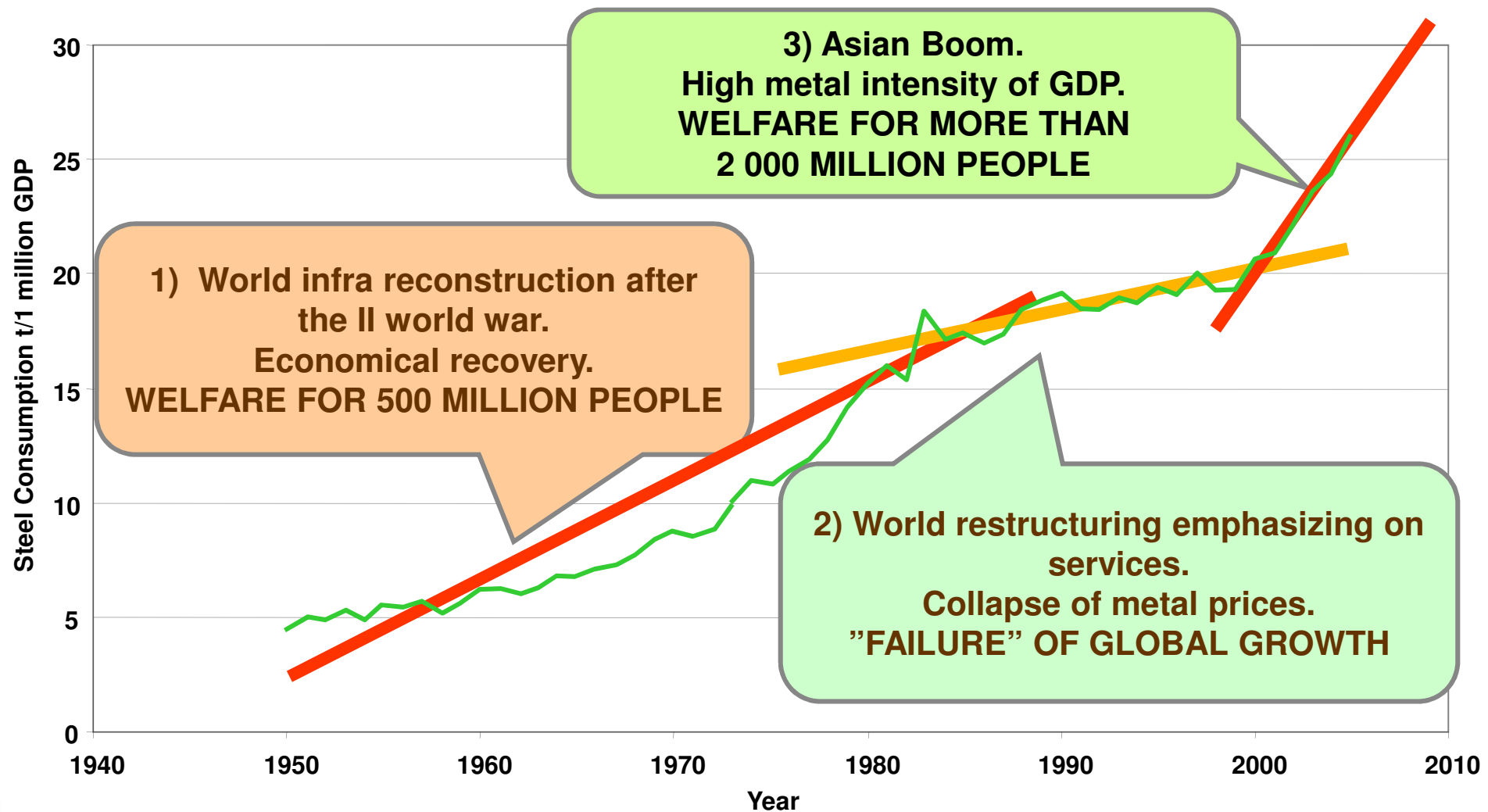
**For example in Finland there is a excellent exploration data coverage provided by Geological Survey of Finland:**

- **Geology**
- **Geochemistry**
- **Geophysics**
- **Drill core**

**INSPIRE** (is based on the infrastructures for spatial information established and operated by the 27 Member States of the European Union. The Directive addresses 34 spatial data themes needed for environmental applications, with key components specified through technical implementing rules. This makes INSPIRE a unique example of a legislative “regional” approach.)

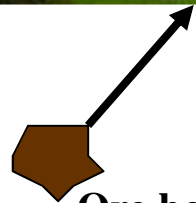


# Consumption of steel / capita (t / USD 1 milj. GNI)



## **GOOD EXAMPLE: OUTOKUMPU STEEL WORKS at TORNIO**

- approx. 8000 direct jobs**
- thousands of jobs in services and contracting**



**Ore boulder found in 1959  
led up to the discovery of  
Kemi chrome mine (world  
class).**





## Mining in the past



## Mining today



**By using the leading edge technology mining industry can be both efficient and environmentally sustainable.**

**It is quite usual that people do not think or they don't know that most of the modern brands are initially based on raw materials extracted from bedrock.**

## Gold Rush in California, in the mid 1800's.



Brannan keenly understood the laws of supply and demand. His wild run through San Francisco came just after he had purchased every pick axe, pan and shovel in the region. A metal pan that sold for twenty cents a few days earlier, was now available from Brannan for fifteen dollars. In just nine weeks he made thirty-six thousand dollars.

**”The impact of gold panning”**

**The first millionaire wasn't a gold prospector but a guy who first came up with the idea of selling shovels, wheelbarrow and panning gear!**

**Studebaker  
Levi-Strauss  
Wells-Fargo, for example.**

