

The Policy Laboratory



Policy Lab 1:

Exploration

Case 1: New geomodels - Panagiotis Zachariadis, Hellas Gold, GR

Case 2: Airborne geophysical methods - Benedikt Steiner, xpLORE.global, DE

Case 3: Drones - Ari Saartenoja, Radai, FI



Policy Lab 2:

Extraction

Case 1: Autonomous equipment - Eric Reiners, CAT, USA

Case 2: Process control & (big) data management - Markus Häupl, Strabag, AT

Case 3: Continuous processes and automation - Uwe Restner, Sandvik, SE



Policy Lab 3:

Deep sea mining

Case 1: Blue Mining Project: Innovation in deep sea mining, Robert Ketterij, IHC MTI B.V. , NL

Case 2: Impacts of deep sea mining - MIDAS Project, Ana Colaço, Uni Azores, PT

Case 3: Underwater exploration and mining, UNEXMIN project, Norbert Zajzon, Uni Miskolc, HU

Non-Policy Factors

① Economic

② Risk Assessment
Health & Safety
Environmental

Transferability Aspects


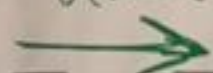
- Strategy
- Geopolitical issues
-
-

Supporting Policies

① Raw Material Initiative & Actions
Health & Safety Regulation

② Horizon 2020

Transferability Aspects

- 
- Global Export of European Standards 
-
-

Non-Policy Factors

MIDAS

①

PLUMES

IMPACTS ← Direct
SUBJECT

Mining

②

Strategy

Transferability Aspects

- MISC/SOME
- LAND BASED RULES ARE NOT APPLICABLE
- GREEN DSMTECH TO OTHER INDUSTRIES

Supporting Policies

①

- EFFECTIVE ENVIRONMENTAL LEGISLATION → DRIVER FOR INNOVATION

- GLOBAL

- ISA is LATE WITH LEGISLATION.

- SCIENTIFIC KNOWLEDGE IS LACKING.

- USE LICENCE FEE'S FOR PRESERVATION (ISA)

- POLICIES SCALABILITY/PREDICTABILITY

②

- POLICIES BASED ON BEST SCIENTIFIC KNOWLEDGE

Transferability Aspects

Act before impact

Can wait for all data before proceeding

With development

Scalability?

Non-Policy Factors



- ① Demand for metals drive exploration in general
- technical, economic, env. factors drive I
- ② - Social aspects - some opposition, but no NIMBY-factors
- "Easier" SLO (less complex)

Transferability Aspects

Every country need comply to UNCLoS/ISA
National legislation may go beyond that
↳ Ensures a minimum framework that is mandatory
↳ Legislation transferability between nations?

EIA

- All DSM-exploring entities need do EIA
↳ dots on ecosystem transferred to ISA
- "Adaptive" EIA - unified approach/^{more} clear toolbox
⇒ potential for knowledge transfer

Supporting Policies

- ① Land-based policies best driver towards deep sea mining
* RMI @ SIP on RM → H2020
Sometimes National Policies pro DSM
- ② Geopolitics/strategic agendas create policies friendly for DSM
↳ Research policy beneficial

Transferability Aspects

Governance transferability aspects
↳ Developing countries taken into account

Can land-based mining policy in some cases be beneficial to transfer to DSM?



Cases – deep sea mining

Non-Policy Factors driving Innovation

(1) Demand for metals

(1) **Economic**

(1) **Plumes impacts**

(2) Technical, **Economic**
Environmental

(2) Risk Assessment
Health & Safety
Environmental

(2) Mining strategy

(3) Social aspects
some opposition (NIMBY)



Cases – deep sea mining

Supporting Policies

- (1) **Raw Materials Initiative and Actions**
 - Health and Safety Regulations
- (2) **Horizon 2020**
 - (1) Effective Environmental Legislation
 - policies stability/predictability
 - Use license fees for preservation
 - (2) Policies based on best scientific knowledge (lack)
- (1) Land-based policies best driver for DSM
 - Raw Materials Initiative + Strategic Implementation Plan (SIP) on RM – H2020**
- (2) Geopolitic/strategic agendas create DSM friendly policies
 - Research policy beneficial

Act before impact

Cannot wait for „all“ data before proceeding



Cases – deep sea mining

Transferability aspects

- Legislation transferability between nations - National strategies
- Every country needs to comply with UNCLOS/ISA- Ensures min mandatory framework, but National Legislation may go beyond
- Geopolitical issues
- Global export of European standards
- Land-based regulations not always directly applicable to DSM
- Transfer of green technologies between DSM and other industries
- Common standards for EIA; Unified approach; more clear toolbox - „Adaptative“ EIA

THANK YOU!