



Extractive industries in Biosphere Reserves

4th World Congress of Biosphere Reserves (4WCBR)

2011: Man and the Biosphere (MAB) and International Geosciences Programme (IGCP) hold an Expert Meeting on “Biosphere Reserves and Earth Resources

Attended in Paris UNESCO Headquarters, by more than 30 invited experts in the fields of earth resource extraction and protected areas management, members of the International Advisory Committee for Biosphere Reserves, members of the IGCP Scientific Board, and members of the UNESCO-MAB and UNESCO-IGCP Secretariats



First conclusions of the expert meeting:

- 1 - Biosphere reserves could and should function as learning sites for sustainable mineral extraction;
- 2 – The expert group should collect and disseminate case studies showing sustainable practices of Earth resource extraction in BRs and alerting extractive industries to existing guidelines and conservation tools;
- 3 - The expert group should Improve communication and a transparent flow of information between stakeholders to ameliorate the co-ordination of open policy dialogue at all levels, stressing the role of biosphere reserves as places for dialogue.
- 4 –The International Council on Mining and Metals – ICMM’s 10 principles for sustainable development performance, could be use as a framework to implement sustainable mining in BRs



Artisanal mining

Large-scale mining – iron ore



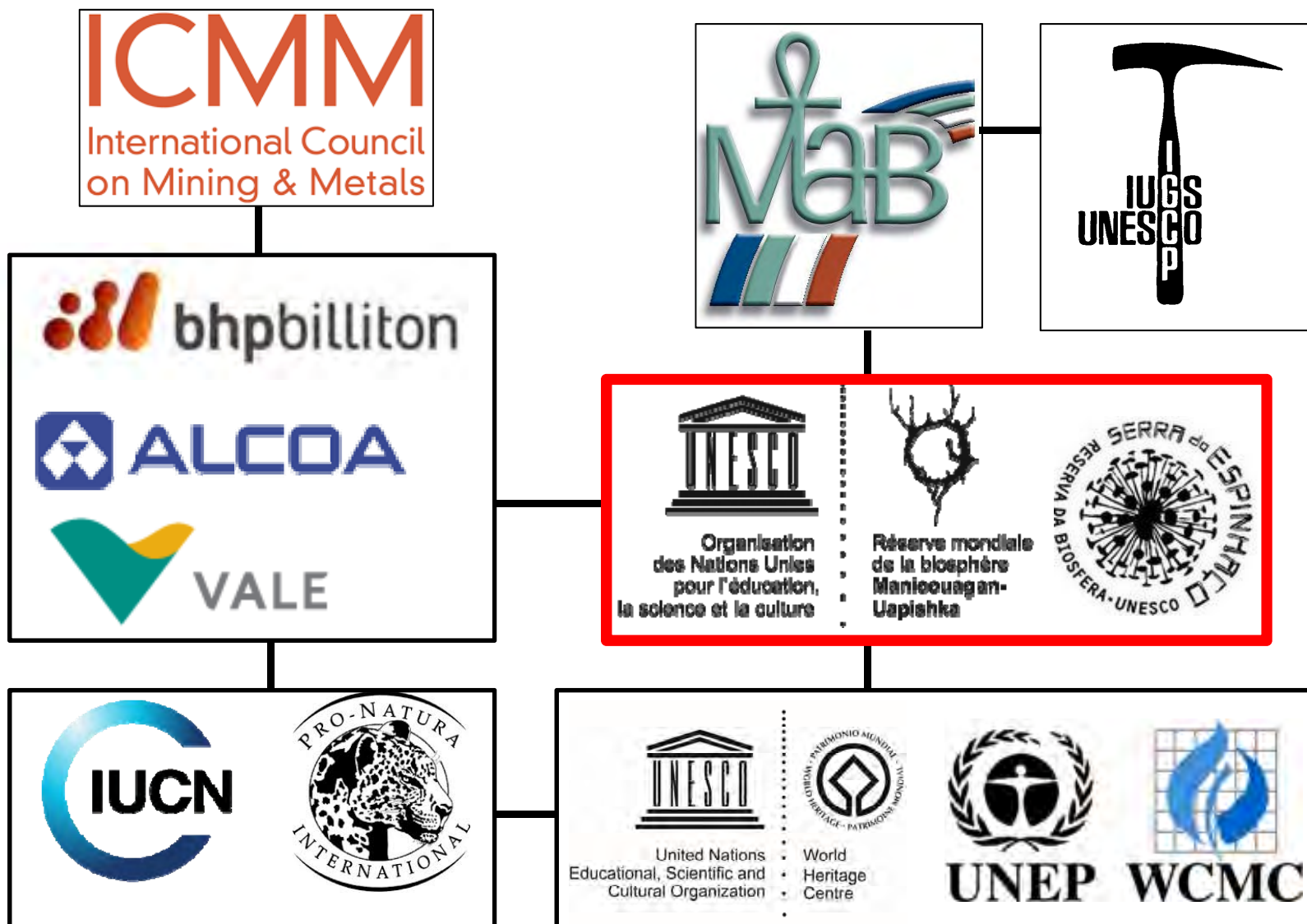
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Expert Meeting on “Biosphere Reserves and Earth Resources” – Paris (2011)



Expanding the working group: Biosphere Reserves



KRUGER TO CANYONS
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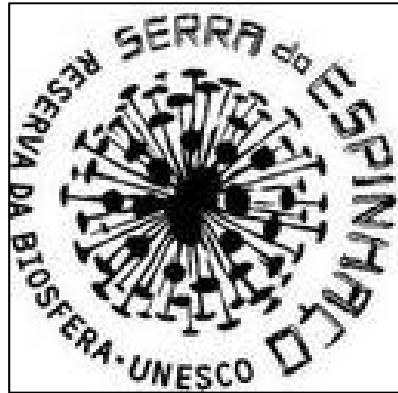
Réserve mondiale
de la biosphère
Manicouagan-
Uapishka



VBR
Vhembe
Biosphere
Reserve



Second Event (2013): Montevideo UNESCO Office and Espinhaço Range Biosphere Reserve

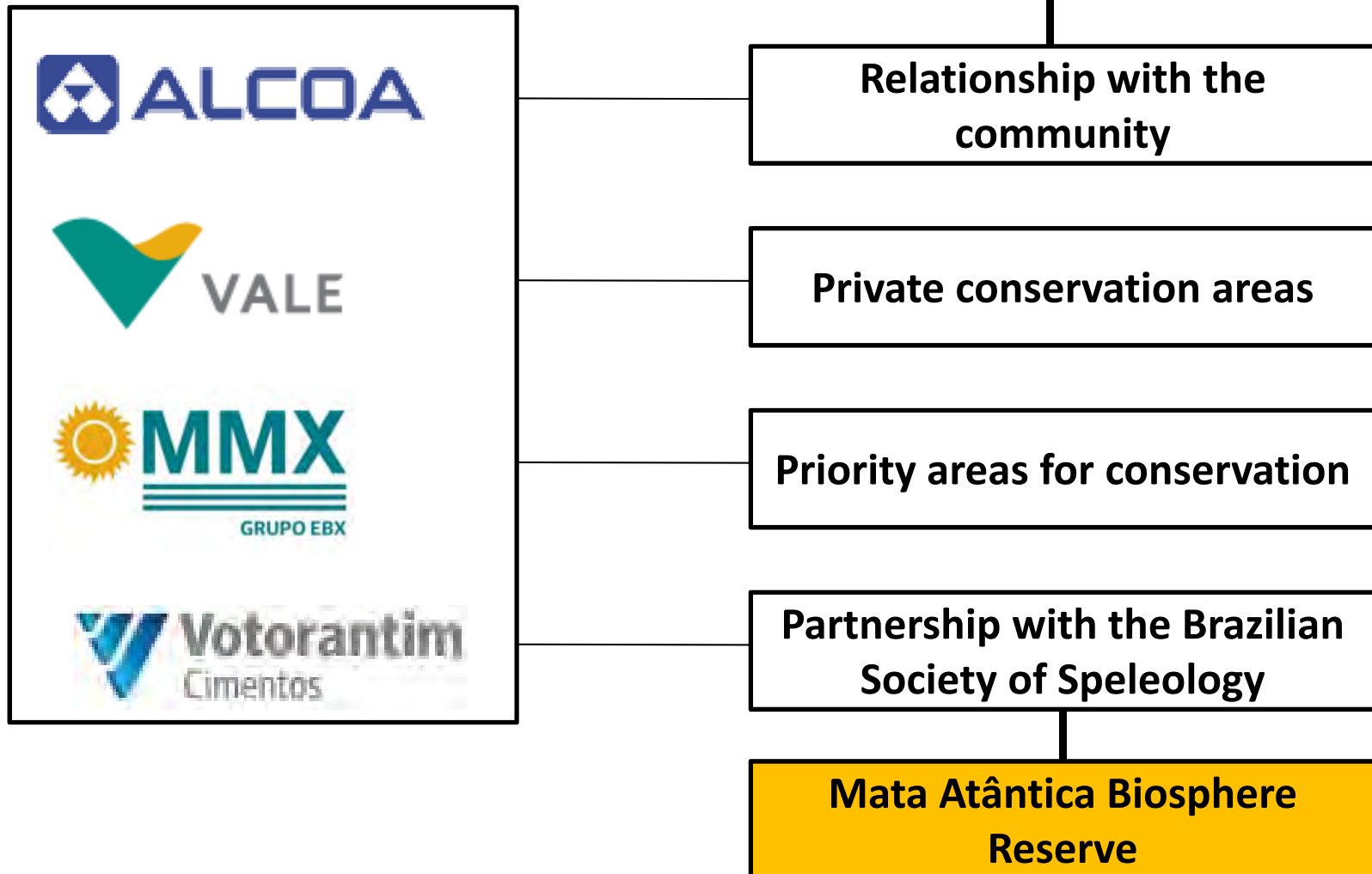


International Seminar - Mining and sustainability in Biosphere Reserves- Belo Horizonte, Brazil

Three moments:

- 1 - Mining in Biosphere Reserves territories: South America, North America, Africa and Asia.
- 2 - Mining Companies and their best practices: Brazil.
- 3 - Cooperation agreements between mining companies and Biosphere Reserves Committees: Canada and Brazil.

Seminário 2013 em Belo Horizonte sobre boas práticas: Cases



Large-scale mining - Biosphere Reserves Network

Goal: Building a Working Group



Iron ore, aluminium, nickel, uranium and gold.

Mining development and problems of the biospheric territory Kyrgyzstan, Issyk-Kul BR

Uranium



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The Mining Industry Within the Spectrum of a Local Sustainable Development Policy

Philippines, Palawan Biosphere Reserve

Nickel



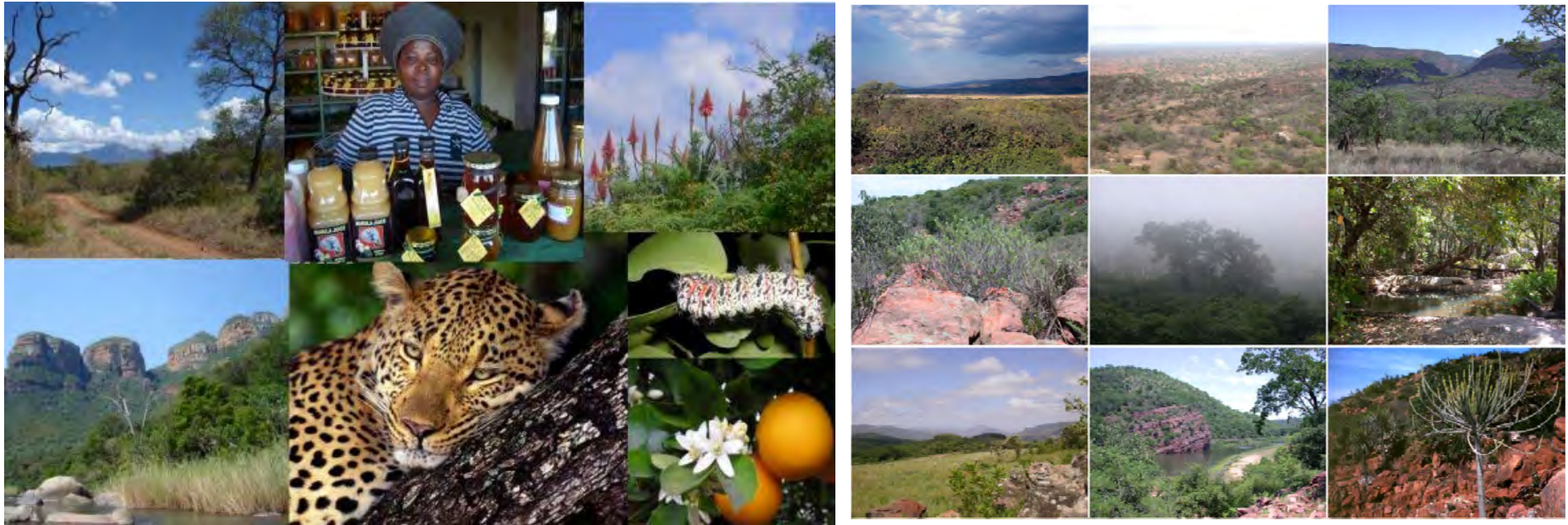
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Mining and Socio-environmental Sustainability in Limpopo Biosphere Reserves

South Africa, Kruger to Canyons Biosphere Reserve, Waterberg Biosphere Reserve, Vhembe Biosphere Reserve.

Platinum, coal, red granite, diamond, Vermiculite, iron ore, Antimony, copper, phosphate and mica.



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Mining, under the cooperation. Brazil, Mata Atlântica Biosphere Reserve

Limestone



Clayton Ferreira LINO

President of the National Council of Mata Atlântica Biosphere Reserve

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Proposal for a social dialogue integrating mining and actions for sustainability in the Espinhaço Range Biosphere Reserve Brazil, Espinhaço Range Biosphere Reserve

Iron



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Biosphere Reserves and Sustainable Mining, How to Make Industrial Private Sector Part of the Solution.

Canada, Manicouagan - Uapishka Biosphere Reserve

Aluminium



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Case study 1

**4th World Congress of Biosphere Reserves (4WCBR) 'A New Vision for the Decade
2016-2025 - UNESCO Biosphere Reserves for Sustainable Development'**

Sérgio Augusto Domingues

Miguel Ângelo Andrade

Espinhaço Range Biosphere Reserve Comitee - Brazil

**Biosphere reserve and mining activities:
learning experiences and commitments**

Working Group on "Biosphere Reserves and Earth Resources"

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Large-scale mining – Dam disaster

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Samantha Pearson in São Paulo

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Nasdaq 4,486.39 -17.85 (-0.40%)

Home Business Finance Politics Stocks Tech

Published On: Thu, Mar 3rd, 2016 Business | By Sylvia Delisi

BHP Billiton Agrees To Compensation Agreement For Samarco Dam Failure

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'É crime, uma pá de lama no rio Doce', diz líder indígena sobre tragédia

EL PAÍS

CONTAMINACIÓN

El tsunami de barro tóxico, el mayor desastre medioambiental de Brasil

- Un vertido minero hace estragos por el río Dulce y pone en riesgo todo un ecosistema
- Miles de personas no saben si están consumiendo agua contaminada con metales pesados
- FOTOGALERÍA [Peces muertos en Río Dulce](#)

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Mining Firms Samarco, Vale and BHP Billiton Settle With Brazil Over Dam Disaster

Agreement could allow them to pay far less than government lawyers originally sought

By PAUL KIERNAN

Updated March 2, 2016 5:09 p.m. ET

RIO DE JANEIRO—Mining companies responsible for a disastrous dam failure in Brazil last year signed an agreement with authorities Wednesday that could allow them to pay far less than the 20.2 billion Brazilian reais (\$5.2 billion) originally sought by government.

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Brazil's slow-motion environmental catastrophe unfolds

Toxic mudslide from collapse of dams spreads as BHP Billiton fined \$66m



Accident of Mariana/ SAMARCO - 2015



17 deaths
2 persons disappeared
1270 unsheltered

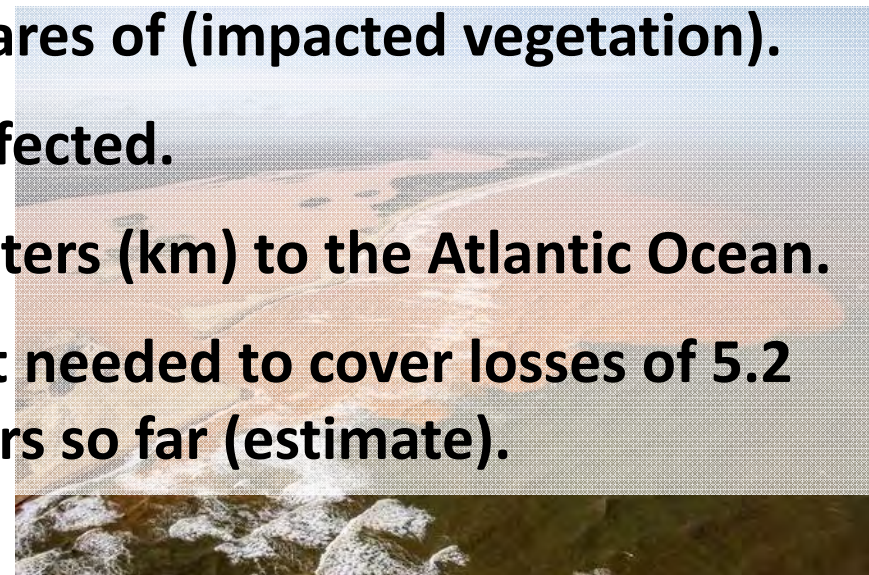




- 50 to 60 million t of tailings released an important Brazil's watershed.
- Shortage of water for human consumption.
- Standstill of the economy: fishing, agriculture, industry and tourism.



- 2.000 hectares of (impacted vegetation).
- 37 cities affected.
- 600 kilometers (km) to the Atlantic Ocean.
- Investment needed to cover losses of 5.2 billion dollars so far (estimate).



**Community
interests and
social control
representative to
participative**

**Guarantees and
security**

**Municipalities
with greater
preparation for
economic
alternatives**

**Mining waste
management**

**Ecosystem
conservation**

**Traditional Culture
and People**



FINAL REPORT (p. 40)
International Advisory Committee for Biosphere Reserves
25-28 January 2016

254. **Espinhaço Range Biosphere Reserve (Brazil)** The Advisory Committee welcomed the first periodic review report for this biosphere reserve, designated in 2005 and congratulated the national authorities for the high quality of the information provided. The Advisory Committee noted with satisfaction the work done in this biosphere reserve for the last ten years in order to promote conservation and sustainable development (training courses, seminars, and development of educational and information material) in line with the principle of the Biosphere Reserve.

255. The Advisory Committee considered that the site meets the criteria of the Statutory Framework of the World Network of Biosphere Reserves, however, recommended to put more attention on mining activities developed in the Biosphere Reserve and explore how to better manage them.



Proposal:

1 - Platform for dialogue

2 - Call for other Biosphere Reserves

3 - References

4 - Schedule of events

5 - Database

6 - Cooperation plans

7 - Guidelines (best practices) for Mining in BRs

1. Build of a dialogue platform: conformation of WG (Working Group) international in the framework of UNESCO MaB-IGCP.

- Mapping of actors and partners considering the events already carried out: "Biosphere Reserves & Earth Resources Expert Meeting" (Paris/2011), "Seminário Internacional sobre Mineração e Sustentabilidade Socioambiental em Reservas da Biosfera" (Brazil/2013).
- Organization of infrastructure and agenda of virtual and present events.
- Implementation of a communication system amongst participants.



2. Documents of reference: Gathering of main documents and guidelines produced by UNESCO programmes and by mining sector.

- Set up an Observatory of Mining Good Practices and BRs
- Bibliographic Research.
- Discussion about ICMM guides and other.
- Proceedings of Belo Horizonte Seminar (2013).
- Letter of Lima/Peru 2016: Agreement and recommendations.
- ODS.
- Mining Code.
- Environmental compensation.
- Social-environmental Licensing.
- Documents of BR (Recognition and Periodic Review)



3. Events and working meetings: Mapping of the situation of mining activities in BRs territories including all continents and ecosystems and integrating the managers and experts.

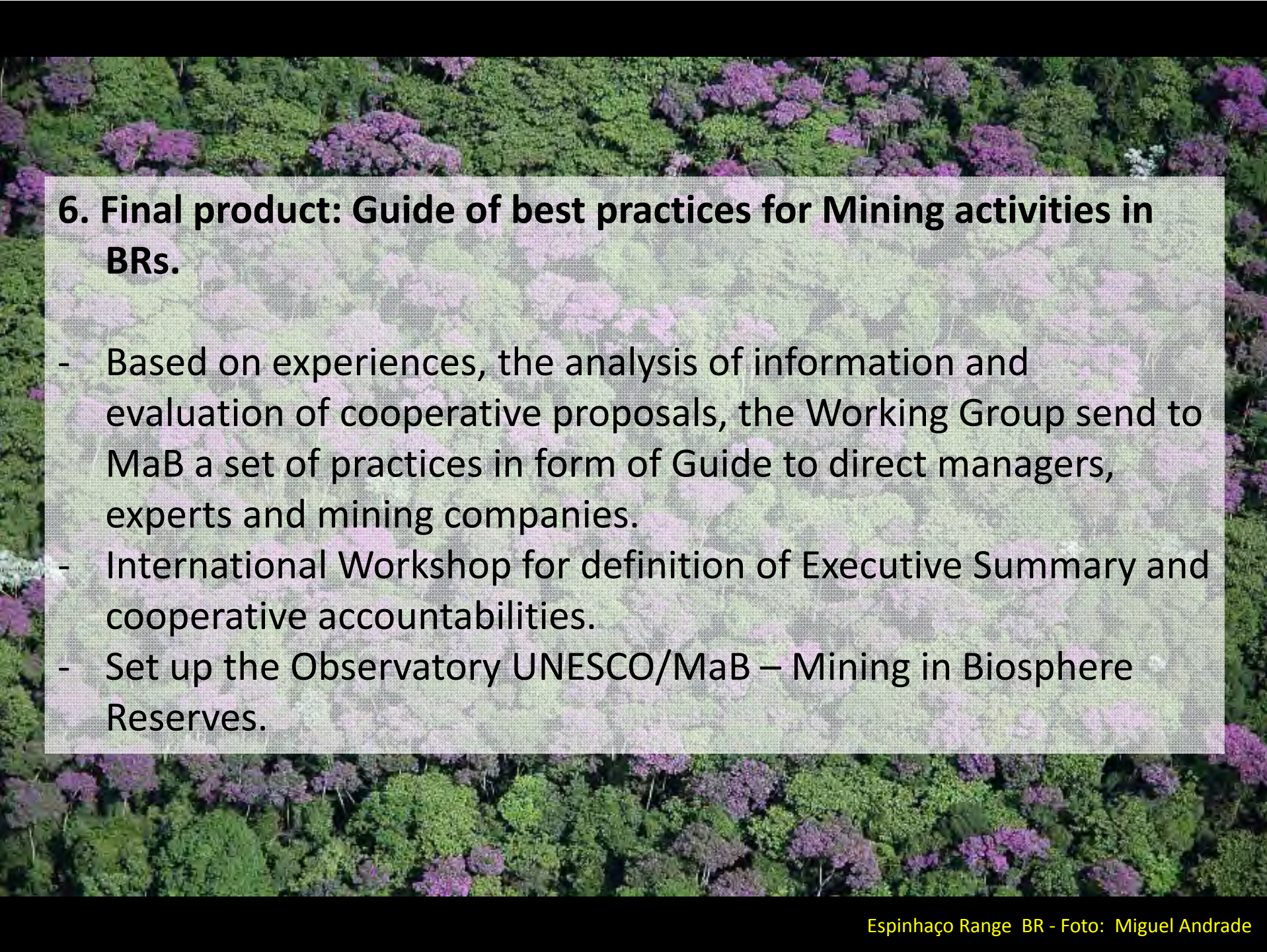
- Organization of seminars, workshops and virtual meetings.
- Expand the group of participants.
- Exchange of information.
- Identification of good practices and initiatives of mining companies, government, NGOs, MaB Committees in BRs territories.
- Evaluation of initiative , practice and operation convergences of mining companies toward guides of UNESCO MaB programme.

4. Data Base: Systematization of information

- Information collection.
- Information treatment
- Data crossing and integration.
- Georeferencing.
- Organization of thematic groups related to divers stages of mining activities.
- Data availability and management.
- Data evaluation, monitoring and periodic review.

5. Proposals for cooperation: Development of cooperative between mining sector and BRs committees.

- Undertake practical actions integrating the companies initiatives and management of BRs.
- Evaluate the feasibility of financing proposals of the World Network of BRs.
- Promote the integration of on-going and future actions amongst the divers involving actors.



6. Final product: Guide of best practices for Mining activities in BRs.

- Based on experiences, the analysis of information and evaluation of cooperative proposals, the Working Group send to MaB a set of practices in form of Guide to direct managers, experts and mining companies.
- International Workshop for definition of Executive Summary and cooperative accountabilities.
- Set up the Observatory UNESCO/MaB – Mining in Biosphere Reserves.

Case study 3