Critical Raw Materials
Capacity Building in Supplying Countries: What is Needed?
China is the largest producer of over 20 materials that have been identified as critical. It is also the largest refiner of copper, aluminum and gold. Canada has resources of most critical materials but is not a major producer.
Chinese Government Hands-on Approach:

- Control of resource companies (partially owned by government)
- Offer aid (e.g., grants, low interest loans) to industry
- Support companies along the supply chain (miners, refineries/processors, end-users (e.g., technology companies), etc.)
- Implement production quotas
- Implement export quotas
- Support R&D along the supply chain (e.g., resource and technology hubs)
EU Following Aid Model for the Automotive Industry Supply Chain

EU approves more state aid to boost car batteries industry

BRUSSELS (AP) — The European Union has approved 2.9 billion euros in subsidies from 12 member countries for a second pan-European project to develop the electric battery industry and move away from its reliance on Asian imports.

2. Investment channel for raw materials projects:
   - Select and prioritize cases to secure primary and secondary raw materials supply for European industrial ecosystems
   - Assess EU funding opportunities and financing sources for investment opportunities inside and outside Europe
EV Demand for Critical Materials

The Crisis Ahead

Significant demand growth expected for lithium and nickel from the EV sector.
Resource Companies Also Need Government Support

Critical materials attract less than 5% of the global exploration budget

Projects usually financed through Capital Markets

Projects have low success rate

Source: S&P Global, 2019

Number of Critical Materials Mining Companies

Canada has the highest number of listed companies exploring or mining critical materials

Source: Tahuti Global
The Market Size of Critical Materials is Small

Strategic metals markets are small in volume and market size; and the projects’ technical risk is higher compared to precious and base metals.
Governments should collaborate to increase discovery of critical materials around the world (e.g., US Energy Resource Governance Initiative (ERGI)).

Governments should collectively invest in infrastructure – large resources of critical materials are in remote areas, e.g., Northern Canada and in Africa.

Governments should collaborate to invest in mineral projects via low interest loans, equity investment, grants, lower taxes, JVs, PPPs, etc. (e.g., EU Raw Materials Alliance (ERMA)).

Support Global Supply Chains - offer aid to resource companies, refiners/processors, metal makers, fabricators, etc.

Resource rich countries should avoid resource nationalism, but more effort should be made to bring benefits to minerals supply countries.

Invest in R&D and skills training centers.
Thank you!

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