

PanAfGeo+

Partnerships and Capacity Building

The Pan-African Support to Geological Sciences and Technology

Snježana Miletić, Geological Survey of Slovenia / ICE-SRM EU

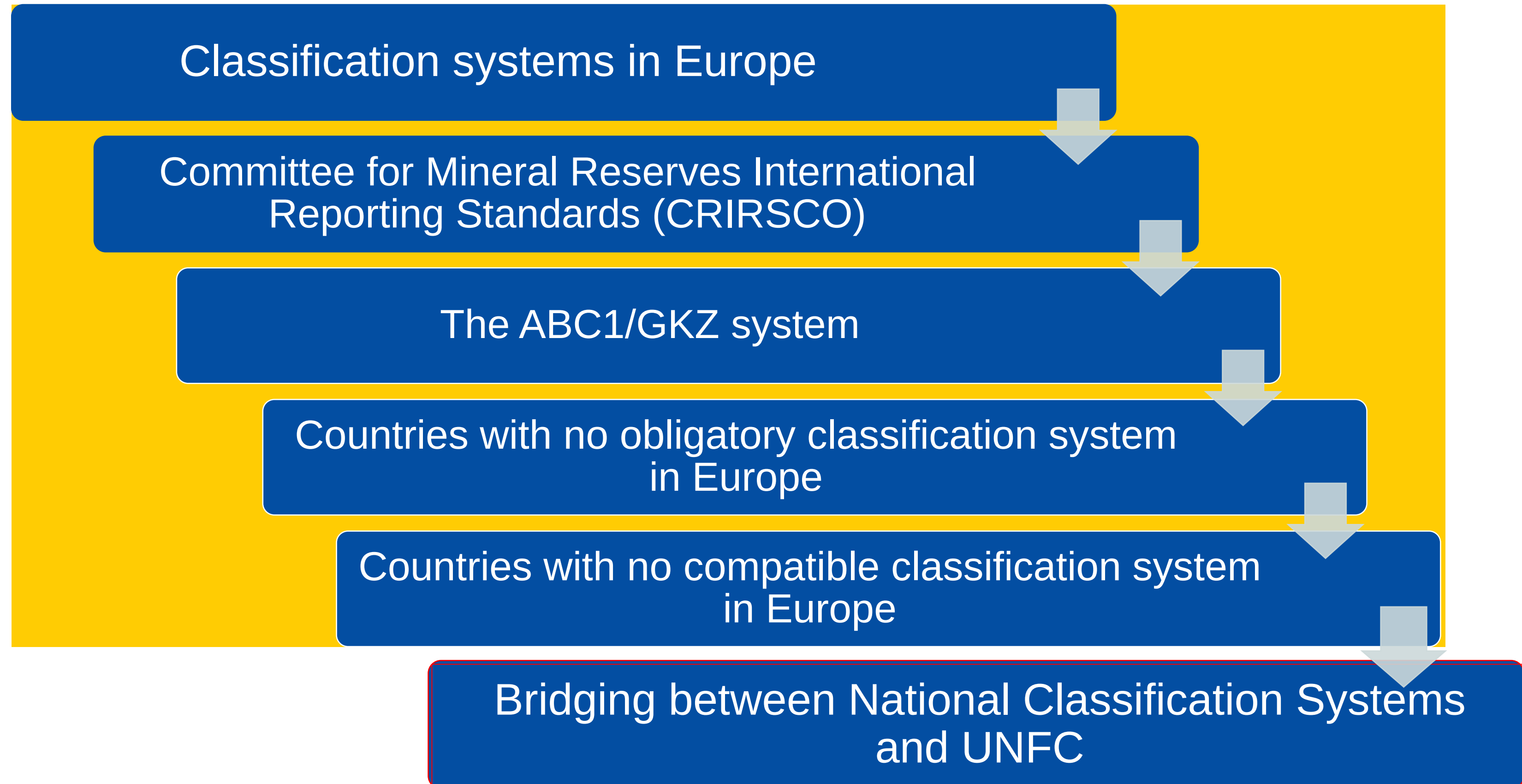
National AMREC/PARC – UNFC Workshop

Southern Sun Hotel, Pretoria, South Africa

12-13 May 2026

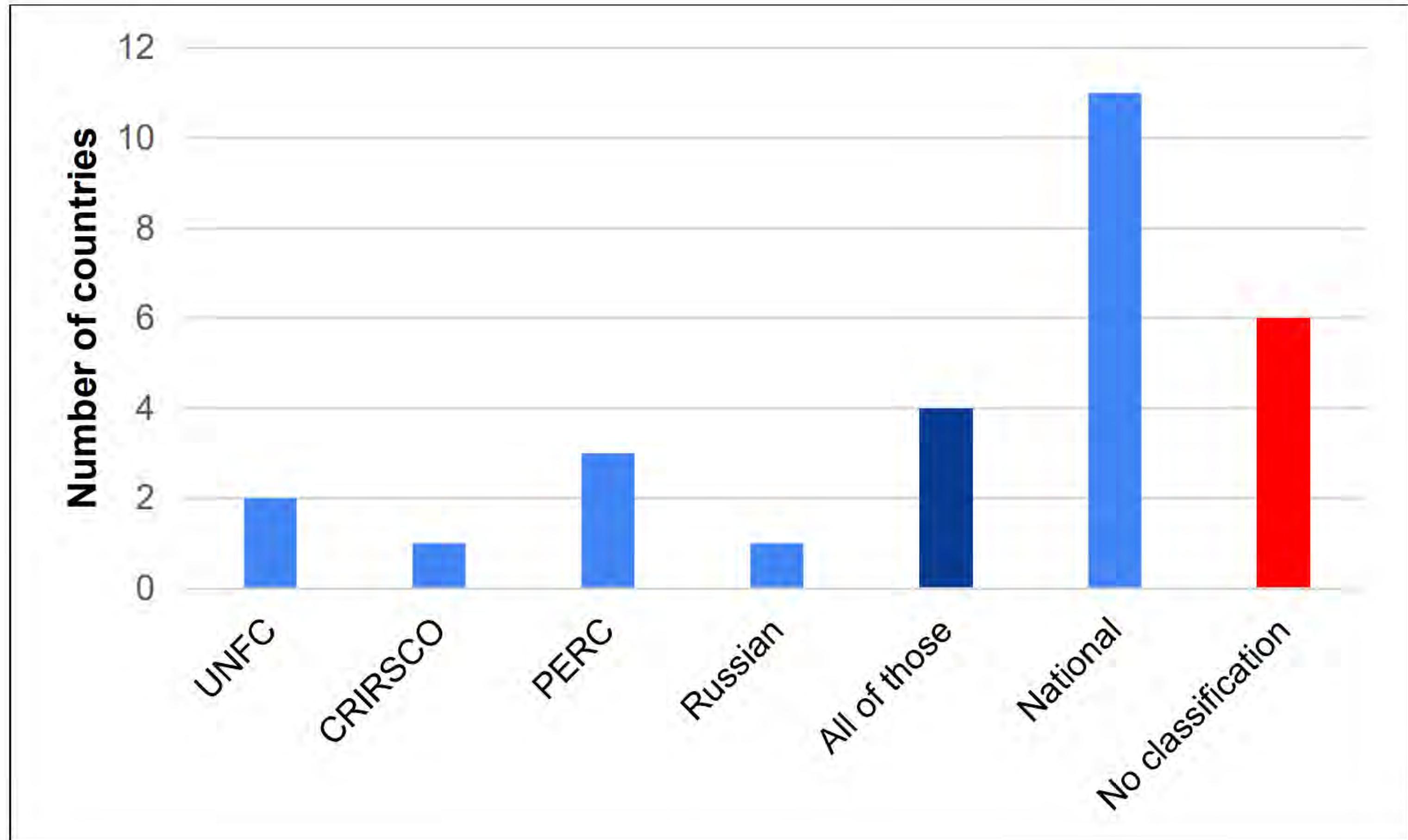
Country specific classification systems in Europe

Content



Classification systems in Europe

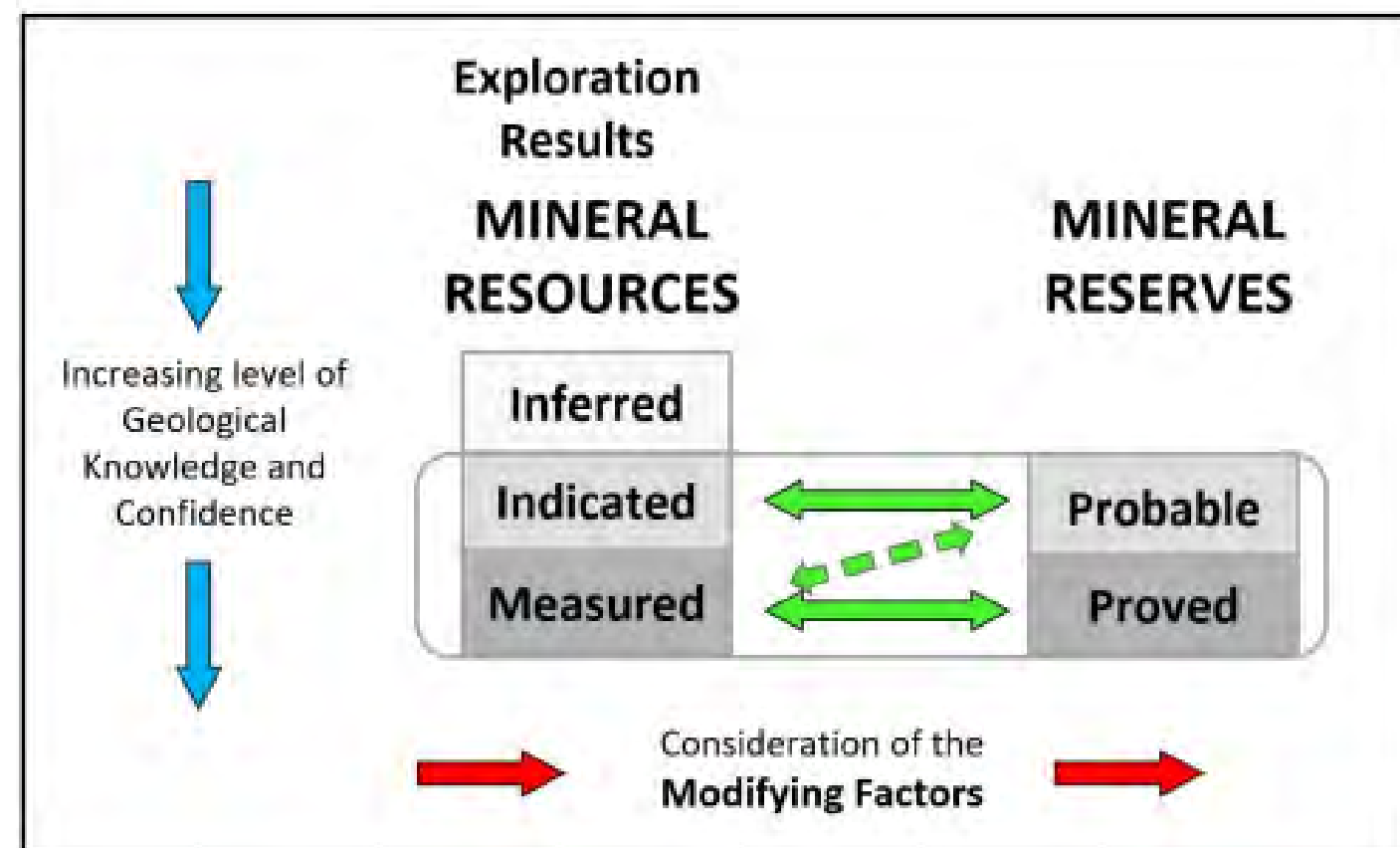
(based on the GSEU questionnaire)



Committee for Mineral Reserves International Reporting Standards (CRIRSCO)

CRIRSCO was formed in 1994 and it currently representing fifteen national reporting organisations (NROs) around the world.

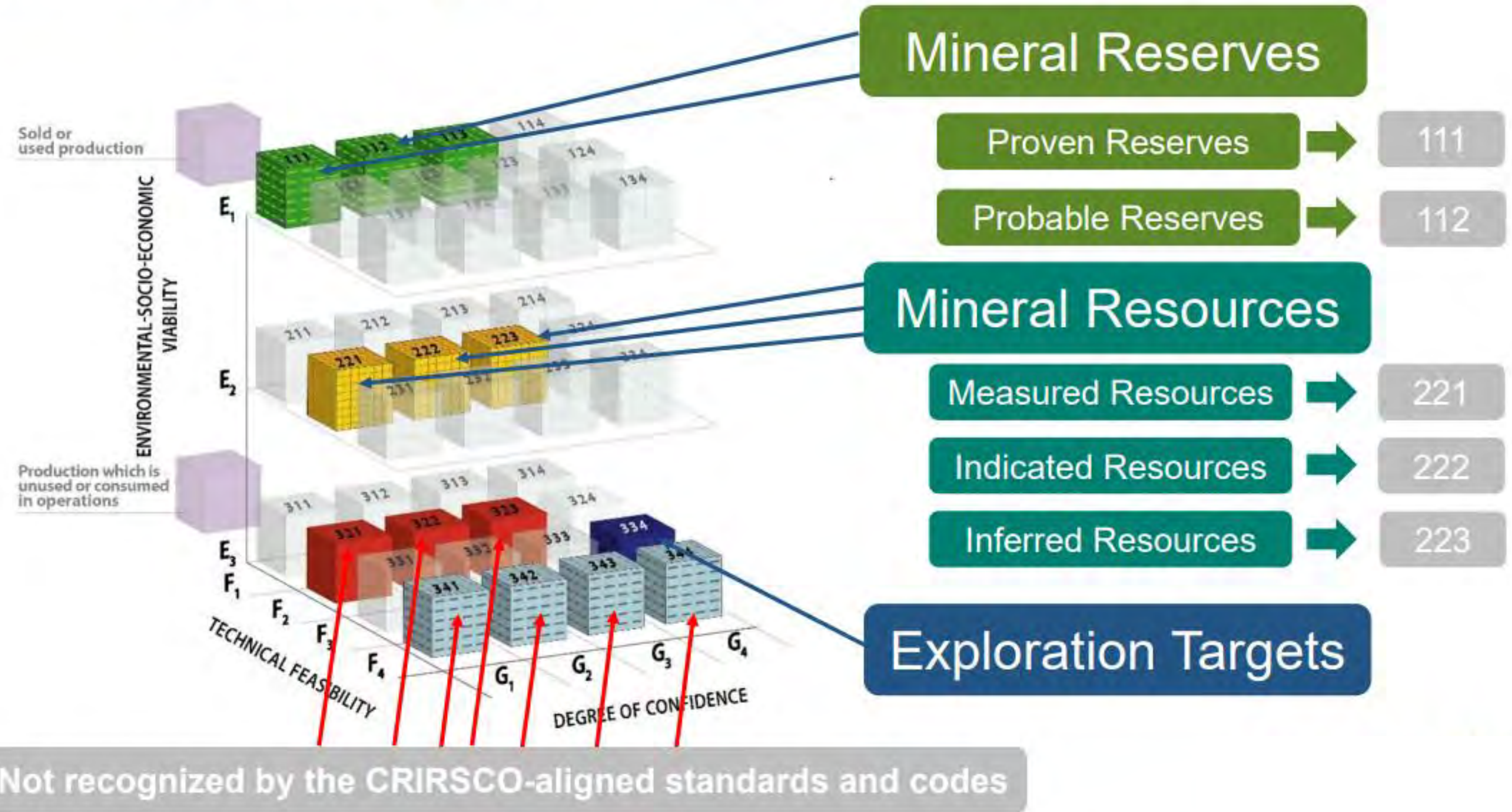
CRIRSCO Classification



General Relationships between Exploration Results, Mineral Resources and Mineral Reserves, as set out in the CRIRSCO Template (CRIRSCO, 2019)

- The CRIRSCO Standard Definitions include the terms **Mineral**, **Public Reports**, **Competent Person**, **Exploration Target** and three types of technical study, namely: **Scoping Study**, **Pre-Feasibility Study**, and **Feasibility Study**.
- Preliminary consideration of the **Modifying Factors** is necessary to confirm that mineralisation included in a Mineral Resource estimate has **reasonable prospects for eventual economic extraction (RPEEE)** based on the relevant Modifying Factors.
- Modifying Factors are considerations which must be accounted for when converting Mineral Resources to Mineral Reserves.

General relationship between the CRIRSCO and UNFC



The ABC1/GKZ system

- The ABC1/GKZ system of mineral deposit classification is common to most **Eastern and some Central European countries**
- Brief general description:

Classification is ranking of mineral reserves on the basis of technical-economic circumstances of future mining, into following classes: economic (*balanced*), potential economic (*conditionally balanced*) and non-economic (*out-of-balanced*) reserves;

Categorisation is ranking of mineral reserves (within classes) on the basis of level of geol. exploration of deposit and knowledge of quantity and quality of mineral commodity, into following categories: *A, B, C1* for reserves and *C2, D1 in D2* for resources.

- Mapping and Guidance documents, considering Europe, have been prepared in Hungary, Ukraine, Romania, Poland, and Croatia, Serbia and Slovenia
- The mapping methodology was slightly different in each country
- Some countries have included UNFC into their legislation.

The ABC1/GKZ system

Example of mapping: ABC1 classification into UNFC (harmonised in Slovenia, Serbia, Croatia)

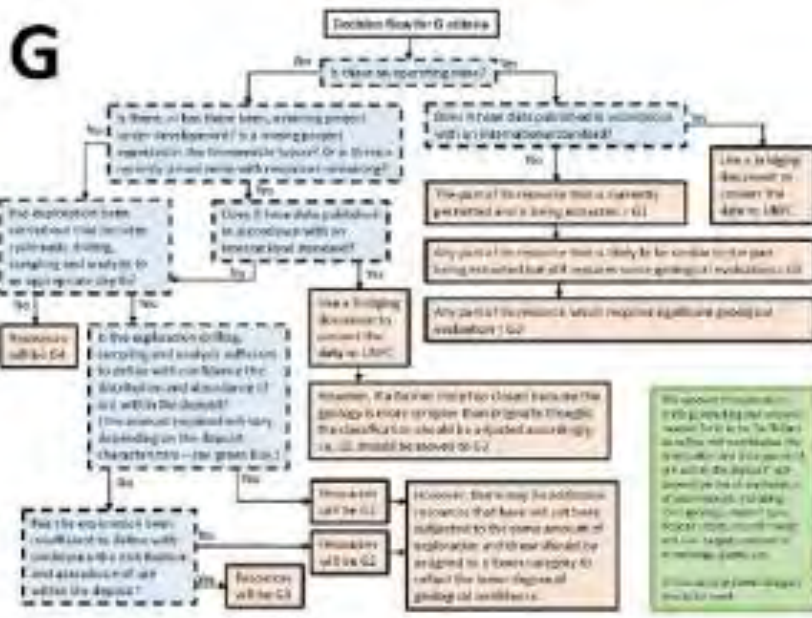
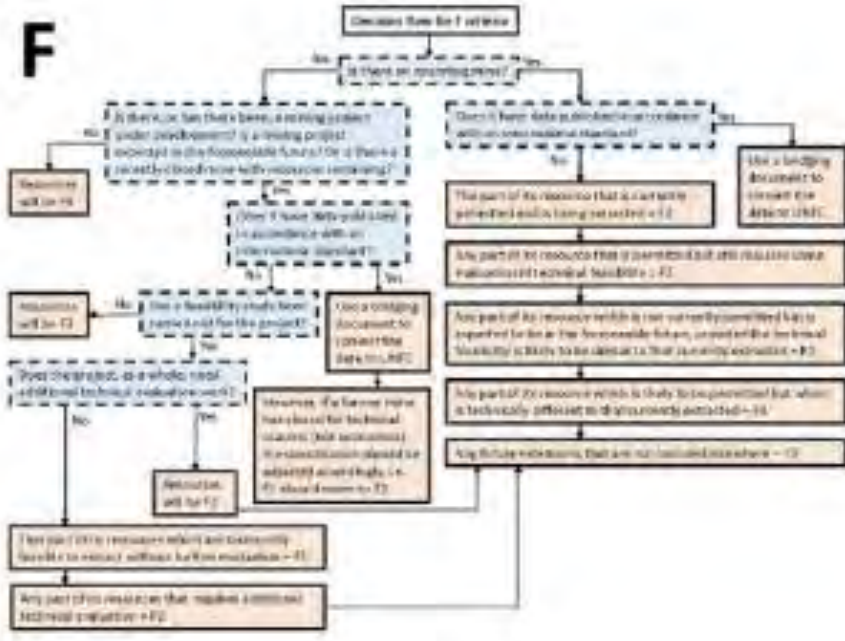
NATIONAL CLASSIFICATION			UNFC CLASSIFICATION			CRIRSCO Template			INSPIRE
Area	Viability Classification Feasibility Balance of reserves ⁴	National class Categorization	E ¹	F ²	G ³	Class Project	Sub-Class Project	Reserves / Resources	Code list
EMA ⁵	Active operation	A, B, C ₁ (BR/ER) ⁴	1 1	1 1.1	1,2 1,2	Viable	On production	G1 = Proved Reserves G2 = Probable Reserves	operating
EMA ⁵	Mine development is underway or due to start	A, B, C ₁ (BR) ⁴	1 1	1 1.2	1,2 1,2	Viable	Approved for Development	G1 = Proved Reserves G2 = Probable Reserves	under development
EMA ⁵ / RMA ⁶	Proven viability	A, B, C ₁ (BR) ⁴	1 1	1 1.3	1,2 1,2	Viable	Justified for Development	G1 = Proved Reserves G2 = Probable Reserves	pending approvals
EMA ⁵ / RMA ⁶ / NMA ⁸	Potential development Viability to be proven	A, B, C ₁ (BR/PBR/NBR) ⁴	2 2	2 2.1	1,2,3 1,2,3	Potentially ⁸ Viable	Development Pending	G1 = Proved Reserves / Measured Resources G2 = Probable Reserves / Indicated Resources G3 = Inferred Resources	feasibility evaluation
EMA ⁵	No active operation Potential Development	A, B, C ₁ (BR/PBR/NBR) ⁴	2 2	2 2.2	1,2,3 1,2,3	Potentially ⁸ Viable	Development On Hold	G1 = Proved reserves / Measured Resources G2 = Probable reserves / Indicated Resources G3 = Inferred Resources	care & maintenance
RMA ⁶ / NMA ⁸ /	Early stage of viability process ⁷	A, B, C ₁ (NBR) ⁴	3 3.2	2 2.2	1,2,3 1,2,3	Non-Viable	Development Unclassified	G1 = Measured Resources G2 = Indicated Resources G3 = Inferred Resources	resource assessment
RMA ⁶ / NMA ⁸ /	Technically feasible, but Insufficient potential closed, historic mines	A, B, C ₁ , C ₂ (NBR) ⁴	3 3.3	2 2.3	1,2,3 1,2,3	Non-Viable	Development Not Viable	G1 = Measured Resources G2 = Indicated Resources G3 = Inferred Resources	not operating closed, abandoned historic mines
NMA ⁸	closed, historic mines	A, B, C ₁ , C ₂ (NBR+PR) ⁴	3 3.3	4 4	1,2,3,4 1,2,3,4	Remaining products ⁹		not applicable	closed, abandoned, historic mines
EEA ⁹ REA ⁹ NEA ⁹	prospection reconnaissance	C ₂ , D ₁ , D ₂ (NBR+PR) ⁴	3 3.2	3 3	4 4	Prospective Project		G4 Exploration Target G4 Exploration Results	
NEA ⁹		C ₂ , D ₁ , D ₂ Resources (PR) ⁴				Remaining products ¹⁰		not applicable (?)	

Countries with no obligatory national classification system

No obligatory classification. However, obligatory system of authorizations, permits and practices.

Facilitation of direct application of UNFC through guidance documents to ensure compatibility.

Application using decision trees. With caution could be used for national systems guidelines.



Example: UK

Countries with non-compatible national classification system

Countries with obligatory national system of mineral deposit classification which is non-compatible with any other system



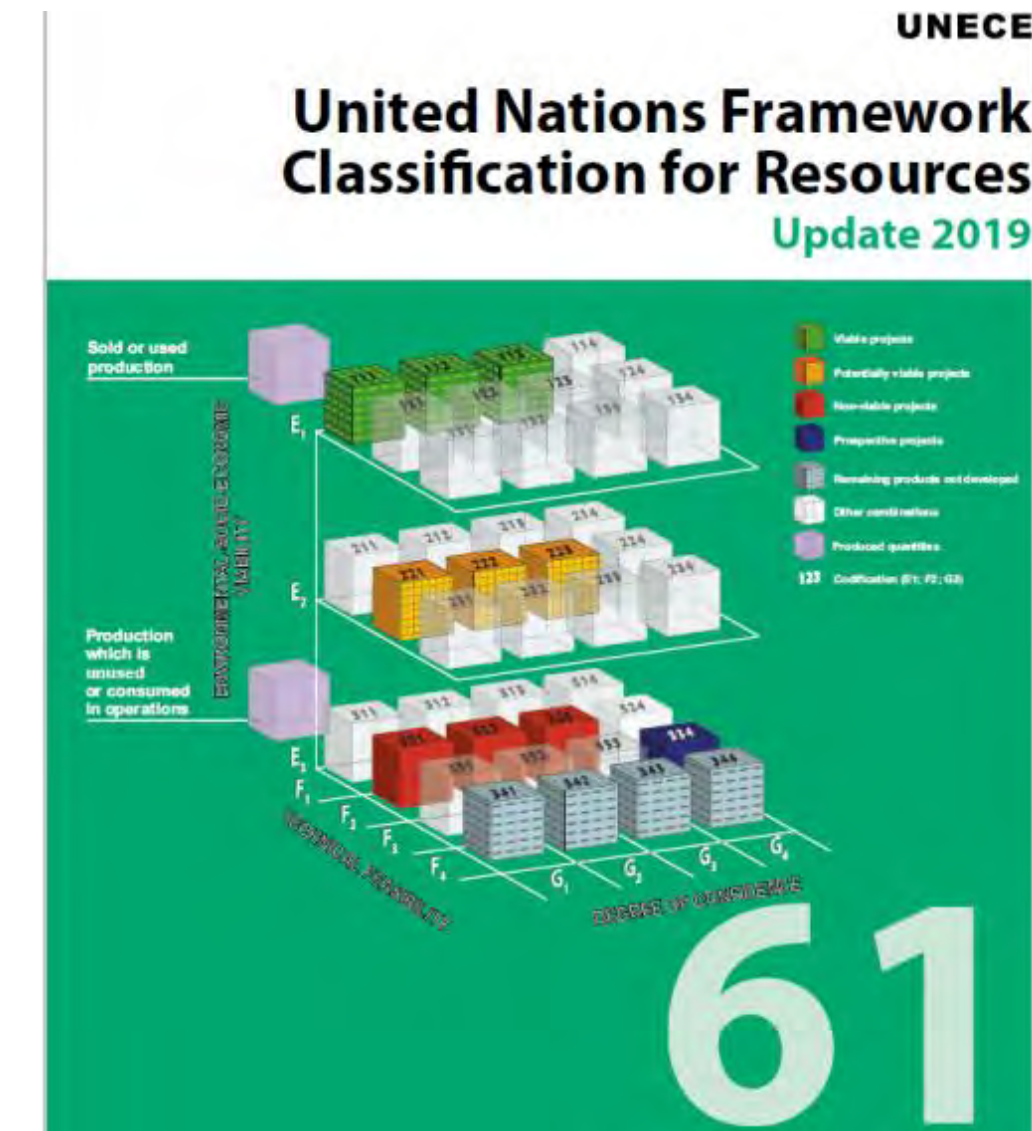
Bridging between National Classification Systems and UNFC

Mapping

- To generate a Mapping Document by **comparing** the definitions and specifications of each **Category/Class** of one classification system to the definitions and specification of each of the Categories/Classes in another system in order to identify the **similarities and differences between them**.

Harmonization

- ... and then, if necessary, to **adjust definitions** and/or specifications of one system so that they lead to **comparable results**.
- A system that is harmonized with UNFC can become an **Aligned System** through the development and endorsement (by the EGRM) of a **Bridging Document**.



UNFC Update 2019, Part II

Looking for best fit between definitions



Best fit
mapping



Within the hierarchy, documents at higher levels consistently **override** those at lower levels.

Thank you
Merci
Obrigada



*In this presentation, the **ICE-SRM EU Training materials** has been used:*

<https://ice-srm.eu/temp-e-learning>

“ICE-SRM EU Training materials were prepared in the framework of GSEU - Geological Service for Europe project, which has received funding from the European Union’s Horizon Europe research & innovation programme under Grant Agreement No. 101075609.”



ICE-SRM EU

A EuroGeoSurveys Initiative

E: euicesrm@geologicalservice.eu