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**Economic Commission for Europe****Committee on Sustainable Energy****Twenty-ninth session**

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**Report of the Committee on Sustainable Energy  
on its twenty-ninth session****Addendum****United Nations Framework Classification for Resources and  
United Nations Resource Management System: Supporting  
building back better from the COVID-19 crisis****I. Introduction**

1. Crises such as droughts, floods, hurricanes, forest fires and the current and ongoing COVID-19 pandemic are putting severe pressure on the planet. These crises are having a significant and immediate bearing on how resources are produced, distributed and consumed, revealing significant stresses on supply chains and the industries they serve when the personnel that service them get sick or incapacitated. Such extreme events are difficult to predict through traditional methods. A new paradigm for managing over stretched human and technical resources during complex acute events is needed.

2. A new paradigm could enhance the effectiveness of our immediate responses but should also offer the prospect of better enabling us to limit the exposure to such events in the future through better planning and preparedness.

**II. Sustainable resource management**

3. The availability of natural resources is at the core of attaining the Sustainable Development Goals (SDGs). Growth in resource use cannot continue inexorably given associated environmental impacts, waste challenges and carbon emissions.

- Since 1970, global production of natural resources has tripled to about 90 billion tonnes in 2018;
- Population and economic growth have decelerated, but the use of resources has accelerated.

4. The social and environmental impacts of the so-called "extractive industries" were not sufficiently addressed in the past, which has caused a significant breach in public trust. Under significant pressure from public sentiment, investment funds have begun withdrawing from activities such as minerals and petroleum production.

5. These limitations also put on pressure on the supply of the critical raw materials required for the future energy system. There is an urgent imperative to frame resource management in the context of social, environmental and economic viability to assure sustainable outcomes. There currently is no natural resource management system that can support this goal. Such a need was only identified in 2015 when the 2030 Agenda for Sustainable Development called for "bold and transformative" action in the way natural resources are managed – in effect a step-change in the resource management paradigm and reimagining resource management.

6. The United Nations Economic Commission for Europe (ECE) has recognized the resource implications of the 2030 Agenda and has engaged actively with all stakeholders to strengthen and widen application of the United Nations Framework Classification for Resources (UNFC) as the basis for a United Nations Resource Management System (UNRMS). The social license to operate is an important issue, so social and environmental guidelines have been developed and the scope of UNFC has been extended to include all primary and secondary (anthropogenic) resources.

7. Together, UNFC and UNRMS provide a unified, comparable, interoperable and harmonized approach to resource assessment and management that can be used for governmental, statistical, social, corporate and financial purposes. They provide a robust set of standards, guidelines, protocols and best practices for putting attainment of the 2030 Agenda at the core of sustainable resource management. Rebuilding economies after the pandemic will require massive amounts of critical raw materials for green energies.

8. The materials required for a green energy transition such as copper, cobalt, lithium or rare earth elements are not sufficiently accessible, and metals and minerals required for technologies such as solar photovoltaics, batteries, electric vehicle motors, wind turbines, and fuel cells face key sustainability challenges. The pandemic has only served to increase the pressure on supply chains. Application of UNFC and UNRMS can provide reliable and coherent data on the availability and sourcing of these critical raw materials (conventional, unconventional, recycling, waste, etc.). They also contribute to the development of circular economy strategies and improves the long-term resilience of supply-chains.

9. Support for a comprehensive resource management system is intended to address risks such as:

- Inadequate or inaccurate inventories of national resources if data are not accessible to government administrations (planners, policy- or decision-makers)
- Lack of harmonized resource statistics
- Misaligned or unrealistic expectations from governments and stakeholders as to the contribution natural resources can make to socio-economic development
- Poor communication that leads to lack of awareness, acceptance and trust between government, companies and host communities in many natural resource development projects
- Loss of trust from local communities hampers policies and practices with regard to social and environmental outcomes.

10. Countries and companies adopting sustainable resource management aligned to UNFC and UNRMS will improve the socio-economic viability and technological readiness of resource development projects and ensure responsiveness and resilience to regional and global challenges. The action will trigger opportunities for governments, industry and financiers to reimagine their businesses and put themselves firmly in the sustainable development discourse.

- This transformation will include improved environmental management of the projects, for example, a vastly reduced impact on land, soil, water and air and significant waste reduction
- The projects will be socially responsible and will increase local community impact that would deliver higher benefits to the local communities, including indigenous populations.

### III. Building back better

11. The economic downturn the COVID-19 has triggered is requiring a massive fiscal response. Many such measures have been announced by numerous countries and multilateral financial institutions. If the world is to attain the 2030 Agenda, it is crucial that the related massive investments be directed towards a "green", and not a "brown" recovery. Sustainable management of the planet's natural resources is fundamental to the attainment of the 2030 Agenda.

12. A build back better strategy, in relation to the use of natural resources, should:

(a) **Embrace a Food-Water-Energy nexus approach:** Integrating the security, accessibility and affordability of energy underpins sustainable development;

(b) **Secure the critical raw materials required for sustainable energy:** The metals and minerals required for technologies such as solar photovoltaics, batteries, electric vehicle motors, wind turbines, and fuel cells face key sustainability challenges, and the strain put on supply chains by the COVID-19 pandemic has increased the challenges;

(c) **Adopt circular economy principles:** Energy use based on closed-loop systems ensure that resources are conserved within given product life cycles. Unhindered production and consumption patterns will not be an option for the future. Cutting down on waste and reducing carbon emissions should be the basis for resource use;

(d) **Obtain social license to operate:** Respect for human rights and the interests, cultures, customs and values of employees and communities is an integral part of sustainable development and is stressed in the United Nations Guiding Principles on Business and Human Rights. Such an approach will need continual improvement to contribute to social, economic and institutional development;

(e) **Build resilience through Micro, Small and Medium Sized Enterprises:** Micro, Small, and Medium Enterprises (MSMEs) are drivers of economic development in most countries yet are particularly severely affected by the pandemic. Supporting MSMEs to extend their networks, embrace digitalization and access international supply chains will be crucial to allow them to play their role in improving countries' resilience;<sup>1</sup>

(f) **Extending sustainable resource management:** Resource production, transformation and use, if properly managed, can ensure beneficial social and environmental outcomes. Extending UNFC to a full-fledged management system for resources will align investment frameworks with the needs of a sustainable world, notably in the development of critical raw materials to support efforts in health, decarbonization, and the like.

13. COVID-19 has highlighted the weaknesses of a globalized manufacturing system. To respond to these weaknesses, there is an urgent need to fundamentally rethink supply chains. The medium-term goals should be to identify alternative local or regional sources, to modify the supply chain as a key factor in business success, and to put human capital back as an essential factor in the success of an agile economy.

### VI. Fundamental Principles of Sustainable Resource Management

14. If the objectives of the 2030 Agenda are to be achieved in time, and at a reasonable cost, then there has to be a change in the fundamental principles we use to manage resources. The core principles also need to be associative. They should connect to all sectors of development and the ecosystem by weaving a network of activities that lead to beneficial outcomes for people, planet and prosperity.

<sup>1</sup> See also ECE/ENERGY/133/Add 10 - Guidelines and best practices for MSMEs to assure resiliency and progress towards a circular economy in sustainable resource management and critical raw material supply chain solutions

15. The twelve fundamental principles of sustainable resource management are listed below.<sup>2</sup> These principles are provisional at this stage and will be firmed up as UNRMS is developed through pilot studies.

(a) **Responsibility to the planet.** The primary responsibility of sustainable resource management shall be the continued well-being of the earth, its inhabitants, and the environment;

(b) **Integrated, indivisible management of resources.** Sustainable resource management shall be undertaken within the framework of public, public-private and civil society partnerships, in an integrated and indivisible manner consistent with its social, environmental and economic viability;

(c) **Systems view.** Sustainable resource management shall integrate a systems view at all stages;

(d) **Social license to operate.** Sustainable resource management shall ensure obtaining and keeping the social license to operate;

(e) **Full life cycle view.** Resources shall be managed with a life cycle view encompassing resource discovery to production, final use, reuse, and recycling;

(f) **Service orientation.** Resources shall be produced primarily as a service to society;

(g) **Comprehensive resource recovery.** Sustainable resource management shall facilitate and support the knowledge-base and systems for comprehensive recovery of value at all stages of operation;

(h) **Circularity.** Sustainable resource management shall facilitate and support the knowledge-base and systems for responsible design, use, reuse and recycling;

(i) **Zero waste.** Sustainable resource management shall facilitate and support the knowledge-base and systems that promote the target of eliminating all wastes as reasonably achievable;

(j) **Zero harm.** Sustainable resource management shall facilitate and support the knowledge-base and systems that pursue continual improvement in health and safety performance with the ultimate goal of zero harm as reasonably achievable;

(k) **Hybridization.** Sustainable resource management shall facilitate and support the knowledge-base and systems that promote the uptake of hybrid technologies and diversification in production and use;

(l) **Continuous strengthening of core competencies and capabilities.** Sustainable resource management shall ensure continuous strengthening of core competencies and capabilities that are required for cross-disciplinary research, development, demonstration, deployment and operations.

## V. Further information

16. For further information on ECE's work on UNFC and UNRMS, visit the ECE Sustainable Resource Management website<sup>3</sup> and/or contact: [reserves.energy@un.org](mailto:reserves.energy@un.org).

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<sup>2</sup> Expert Group on Resource Management (2020) United Nations Resource Management System Concept Note: Objectives, requirements, outline and way forward (ECE/ENERGY/GE.3/2020 [https://www.unece.org/fileadmin/DAM/energy/se/pdfs/egrm/egrm11\\_apr2020/ECE\\_ENERGY\\_GE.3\\_2020\\_4.pdf](https://www.unece.org/fileadmin/DAM/energy/se/pdfs/egrm/egrm11_apr2020/ECE_ENERGY_GE.3_2020_4.pdf))

<sup>3</sup> <https://www.unece.org/energy/se/reserves.html>