

LUMEN TECHNICAL BRIEF 2

Conceptual framework, measurement and governance

A reflexive, multi-level system linking viability, value and lived experience

TECHNICAL BRIEF

Prepared for the United Nations Beyond GDP consultation · 11 pages · English contribution

EXPLORE THE INTERACTIVE DEMONSTRATORS

https://ccop.world/data/files/un/lumen_beyondgdp.html

Live LUMEN minisite: architecture, OBI, NLPI, CEDI and implementation modules.

SUBMITTED BY	Citizen Conference Of Parties (CCOP)
AUTHOR	Nicolas Gros de Seta
PROGRAMME	LUMEN

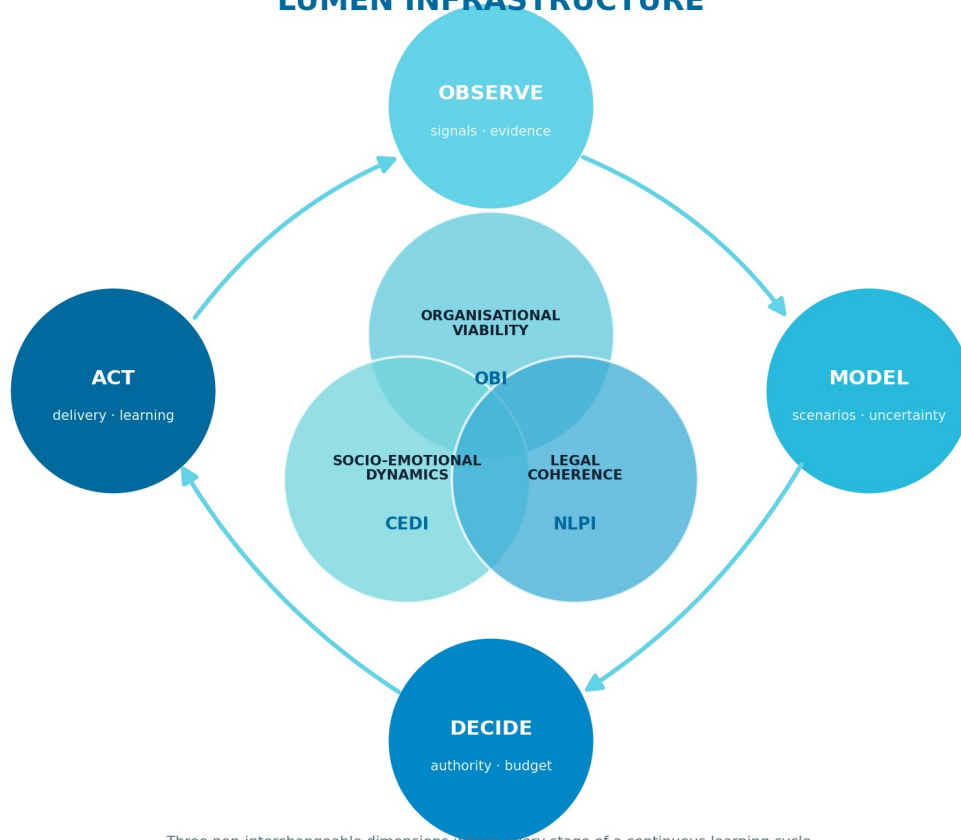
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EXECUTIVE ANSWER

The HLEG compass needs an operating system

The HLEG framework is appropriate as the global measurement reference. LUMEN does not propose a competing universal dashboard. It adds a modular operating architecture that links observation, modelling, legitimate decision and delivery.

LUMEN INFRASTRUCTURE



Three non-interchangeable dimensions inform every stage of a continuous learning cycle.

CORE DISTINCTION

Indicators describe conditions; governance changes them. LUMEN connects the two while keeping evidence, authority and implementation institutionally distinct.

- The Organisational Biomimicry Index (OBI) observes organisational viability through seven biomimetic principles.
- The Net Legal Production Index (NLPI) traces value, impacts, contributions, legal coherence and capturable gains.
- The Collective Emotional Dynamics Index (CEDI) observes lived experience, needs, recognition, support and motivation.
- The decision module applies floors, public authority, deliberation and budget choices.
- The operation module delivers, learns and returns observed results to the next cycle.

CONCEPTUAL FIT

Refine the HLEG framework through decision rules

HLEG component	Suggested refinement	Reason
Foundational principles	Define a limited set of non-substitutable ecological, rights and legal floors.	Prevent a sustainability mirage created by compensating averages.
Current well-being	Preserve the domain dashboard and add clear decision-use metadata.	Avoid a headline score detached from policy levers.
Equity and inclusion	Require distribution, procedural voice and intergenerational effects.	Outcomes and agency are both material.
Sustainability and resilience	Track capital stocks, thresholds, dependencies and recovery capacity.	Stocks and system viability matter beyond annual flows.

LUMEN's "intercapital fusion" means integrated decision visibility across financial, human, natural and institutional/social capitals. It does not mean unlimited substitutability or forced monetary conversion.

HOMOMIMICRY AND THE GLOBAL BRAIN

Use living-system metaphors with scientific discipline

Homomimicry translates functional lessons from living systems — sensing, feedback, diversity, modularity, circularity and distributed coordination — into organisational design. The analogy is heuristic: societies are not organisms in a literal biological sense, and political persons retain rights that cells do not.

The global-brain literature describes intelligence emerging from interconnected human and technological agents. LUMEN adopts the decentralised interpretation: observation and knowledge are distributed; diversity and autonomy improve collective intelligence; no central algorithm commands the whole.

Metaphor	Useful design insight	Boundary
Nervous system	Timely, distributed sensing and feedback.	No universal surveillance or central controller.
Metabolism	Track resources, waste, dependencies and regenerative loops.	Do not naturalise political inequality.
Immune system	Detect systemic risk and preserve adaptive capacity.	Do not label dissent as pathology.
Learning organism	Use outcomes to revise models and institutions.	Keep authority, rights and accountability explicit.

SCIENTIFIC STATUS

These are organising metaphors and design hypotheses to be tested, not proof that humanity is literally one organism.

METACYBERNETICS

A reflexive observation–decision–operation architecture

Yolles' metacybernetics models living-system agency through interacting ontological domains and operative, figurative and cognitive systems. LUMEN draws an operational analogy: an observation module gathers and interprets signals; a decision module applies authority and judgement; an operation module acts and learns.



LUMEN operational translation inspired by metacybernetics; terminology remains explicitly attributed and contestable.

- First-order feedback asks whether action achieves a target.
- Second-order reflection asks how the observer and model shape what is seen.
- Higher-order reflexivity asks how values, culture, institutions and environment co-evolve.
- LUMEN's cycle retains logs of assumptions, dissent, revisions and outcomes so learning is auditable.

ATTRIBUTION

Observation–decision–operation is LUMEN's policy translation inspired by metacybernetics; it should not be presented as Yolles' exact terminology.

ORGANISATIONAL BIOMIMICRY INDEX (OBI)

Measure the capacity to remain viable and adaptive

OBI principle	Policy meaning
1 · Sustainable energy flows	Reduce dependence on depleting or destabilising energy and material inputs.
2 · Optimise rather than maximise	Seek sufficiency, efficiency and system balance rather than one-variable growth.
3 · Locally attuned and responsive	Sense place-specific conditions and shorten feedback loops.
4 · Integrate diversity	Use redundancy, plural knowledge and portfolio diversity for resilience.
5 · Close loops	Reuse materials and information; prevent leakage and unmanaged externalities.
6 · Build through evolution	Experiment, learn and adapt through modular change.
7 · Cooperate and self-organise	Distribute agency while maintaining shared purpose and accountability.

The existing OBI instrument contains 63 indicators, nine per principle. For UN use, responses should be stored at indicator level; averages should include only answered items; missing data must never generate a zero or division error; and each score should carry evidence and uncertainty.

NET LEGAL PRODUCTION INDEX (NLPI)

Trace potential and capturable value without hiding law

EQUATIONS

Potential = $\sum_i [(V_i - I_i + C_i) \times P_i]$. Capturable value at horizon T = $\sum_i [(V_i - I_i + C_i) \times P_i \times \tau_i(T) - M_i(T)]$.

Term	Meaning	Method rule
V_i	Gross value produced or protected by unit i.	Declare units and beneficiaries.
I_i	Negative impacts, hidden costs, externalities and risks associated with unit i.	Show incidence, uncertainty and irreversibility.
C_i	Positive contribution from unit i beyond direct output.	Avoid double counting with V_i .
P_i	Normative factor for unit i, derived from law and authorised priorities.	Publish rationale; treat binding floors separately.
$\tau_i(T)$	Realistic capture rate for unit i at horizon T.	Base on capability, incentives and evidence.
$M_i(T)$	Implementation and transition cost for unit i at horizon T.	Include administration, data and distributional mitigation.
$i \cdot \sum_i \cdot T$	i is the evaluated action, policy, impact or unit; $\sum_i$ sums all units; T is the stated time horizon.	Define the unit of analysis and horizon before calculation.

Financial value is one useful expression, especially for budgets, but physical and indexed units should be retained where conversion would be misleading. Potential and observed result must always be reported separately.

BEYOND GDP INDICATOR INTAKE

The HLEG and future Beyond GDP indicators are included in NLPI as a governed evidence layer. NLPI records their source, unit, quality, uncertainty, normative link and authorised decision use; inclusion does not give every indicator legal status or require monetisation. Relevant evidence may also inform OBI or CEDI.

COLLECTIVE EMOTIONAL DYNAMICS INDEX (CEDI)

Prevent technocracy through governed lived experience

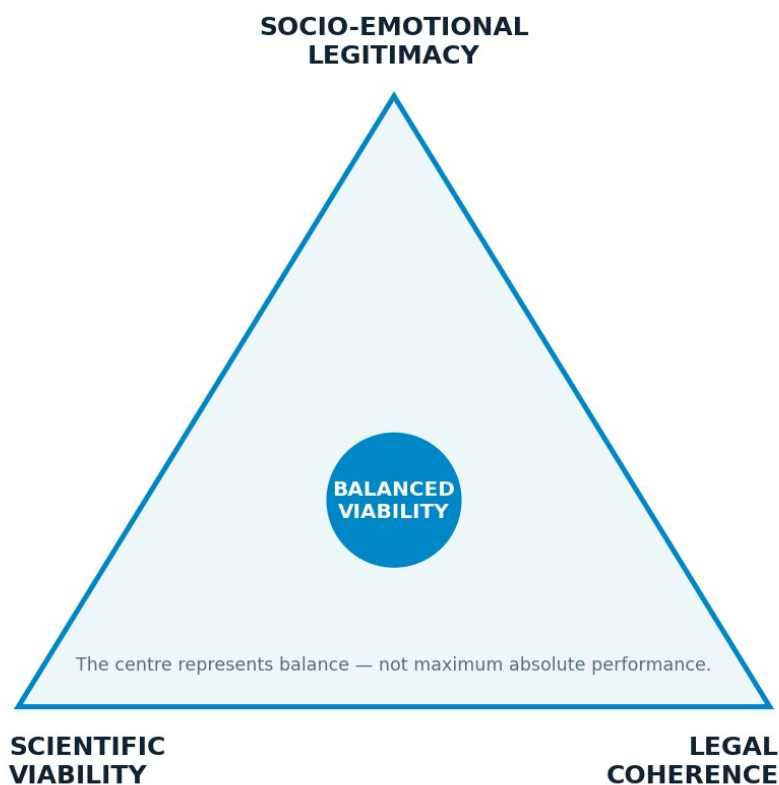
CEDI question	Signal
How do people feel about the option?	Vitality, affect and subjective appraisal.
Which needs are met or left unmet?	Needs satisfaction and distribution.
Do people feel heard, respected and fairly treated?	Recognition, procedural justice and trust.
Are resources and support sufficient?	Capability and implementation readiness.
Are people willing and motivated to act?	Collective evolution and sustained agency.

CEDI can draw on official surveys, deliberative processes and citizen data. Under the Copenhagen Framework, citizen data require meaningful engagement in design or collection and an enabling environment for quality, ethics, interoperability, capacity and sustainable funding.

- Publish who was invited, who participated, who was missing and how data were weighted.
- Protect consent, privacy, security and the right not to participate.
- Keep qualitative testimony available alongside derived scores.
- Use independent stewardship where power asymmetries are high.

VALUE TRIANGLE

Balance is not maximum performance



The triangle is a decision-space visual. Each vertex represents dominance by one dimension; the centre represents balance among scientific viability, legal coherence and socio-emotional legitimacy. Absolute scores are displayed separately. A central point with three low scores is balanced but weak.

Sequence	Question
1 · Floors	Does any non-substitutable ecological, rights or legal constraint fail?
2 · Absolute profile	How strong is performance within each dimension and sub-indicator?
3 · Balance	Is one dimension dominating or being neglected?
4 · Decision	What authority, evidence, dissent and uncertainty justify the chosen action?
5 · Learning	What observed results should change the next model and decision?

NO SCALAR SHORTCUT

A composite may support communication, but it cannot replace the profile, floors or public reasoning.

GOVERNANCE AND GLOBAL–NATIONAL BALANCE

Common metadata, flexible dashboards

- Create a UN technical group under existing statistical governance to define minimum metadata, not a new supra-national decision authority.
- Use tiered indicators based on conceptual clarity, data availability and decision relevance.
- Require annual or decision-cycle frequency where feasible, with trend, disaggregation and confidence information.
- Allow national modules and culturally appropriate questions while preserving a small common core.
- Establish independent scientific review, public consultation, conflict-of-interest rules and appeal routes.
- Evaluate headline indicators against robustness, relevance, interpretability, comparability, timeliness and resistance to gaming.

Global coherence should apply most strongly to definitions, metadata, safeguards and audit trails. National flexibility should apply to priorities, additional indicators, institutional pathways and implementation sequencing.

GOVERNANCE RULE

Experts validate methods; legitimate authorities decide; affected people can contest; implementers report results.

RECOMMENDATIONS AND SOURCES

A four-part measurement compact

1. Adopt the HLEG dashboard and establish non-substitutable floors.
2. Pilot OBI, NLPI and CEDI as modular diagnostics rather than mandatory global indices.
3. Require a complete evidence trail from raw data to indicator, scenario, decision and result.
4. Standardise metadata and safeguards before standardising weights or composite measures.
5. Use citizen data through the Copenhagen Framework and official-statistics stewardship.
6. Make every pilot evaluate decision usefulness, cost, equity, legitimacy and learning.

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