Ministry of the Economy
Luxembourg Strategy
HINDSIGHT. INSIGHT. FORESIGHT.

Organisation's name

Luxembourg Strategy

Website

Luxembourg Strategy's website: https://luxstrategie.gouvernement.lu/fr.html

Strategic, prospective Vision ECO2050 for a resilient, inclusive and competitive Luxembourg economy by 2050. ECO2050 webpage: https://luxstrategie.gouvernement.lu/fr/eco2050.html

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Chapeau

Luxembourg Strategy, the strategic foresight directorate of the Luxembourg ministry of the Economy, recommends the following in the subsequent pages. More recommendations can be found in the Vision ECO2050 published in September 2023.[1] :

Chapter I:

- Redefine the notion of "development"
- Adopt the UNDP planetary boundaries and inequality adjusted Human Development Index
- Transition away from "sustainable development" towards multicriteria, context-specific "resilience"
- "Do something big", from many small incremental changes to a few large jumps

Chapter II:

- Regulate the global commons
- Give more precedence to natural adaptation to climate change, behavioural change and reduced consumption in the global North
- Invest in critical infrastructure redundancy, strategic storage (food, energy, water, materials) and duplicated solutions
- Business adaptation and contingency plans

Chapter III:

- Digitalisation should reduce ecological footprints and strengthen society and democracy

Chapter IV:

- Give Sense: put people to meaningful work, which contributes to the habitability of the planet
- Reverse reality blindness

[1] https://luxstrategie.gouvernement.lu/fr/publicationsbis/rapport-vision-eco2050.html

- Build a new generation of workers capable of **leading the transitions**
- Combine old and new knowledge, promote scientific culture and cultivate excellence
- Promote new business and management models (organisational innovation)

Chapter V:

- Economic performance not to be assessed via GDP growth only
- Increase expectation from Boards of Directors
- Limit tenureship of leaders in time
- Institutionalise Foresight

Chapter I. Sustainable development and financing for development

With the notion of "sustainable development" we start on a wrong footing.

"Sustainable development" (Bruntland, 1987) has not convinced since the 3 components have rarely been translated into equally weighting facts and actions. Mostly economic considerations prevail avec social and environmental ones. A lot has been achieved in terms of poverty alleviation since the SDGs. However, these advances are stalling. The SDGs are not internally consistent and compatible with the Laws of physics[2]: they are based on economic growth, weak sustainability (substitution of capitals) and equal levels of consumption for an ever-increasing world population and its material aspirations, with no consideration for planetary boundaries or the "crises of meaning-loneliness-mental health" (Iain McGilchrist, John Vervaeke). Betting everything on renewable energy only, without a guarantee with regards to their financial, material and technical feasibility, without a clear understanding of what the residual possibilities of a world without fossil fuels are, without a position on the role nuclear energy could play, is too short and too risky. Considering the magnitude of the crises humanity faces, SDGs are too timid, too linear (irreversible damages from geo-engineering or carbon capture and storage technics, existential risks, a climate endgame are not anticipated), too conservative and too slow to urgently fill in the expanding gap in the quest for ensuring the planet's habitability.

The notion of "development", just like that of "progress", need also to be revised. It cannot be that countries with, generally and on average, low carbon and resources footprints are deemed "underdeveloped", whereas those with high per capita and absolute footprints are considered "developed". Such a definition of development to which all people and countries should aspire, would ruin the world. The direction of development seems to be one-way, from the South and the low financial revenue countries to the North and the high revenue countries.

However, it is often the poorer countries that are better prepared to withstand hardship and recover from disasters or to live through black outs and resources scarcity. The social solidarity reflexes, psychological stability, resources frugality and technical ingenuity are often higher in materially and financially deprived places and communities than in the technology, machines, and digital processes dominated ones.

Contrary to intuition, countries with a less sophisticated technosphere may also face lower physical destruction, lower vulnerability to cyberattacks and lower financial loss&damage in the event of disasters or disruptions, than countries with vast built-up areas of high economic value, composed of complex and interconnected technological and digital systems.[3]

Recommendations:

[2] https://jancovici.com/en/energy-transition/societal-choices/is-sustainable-development-of-any-use-to-save-the-world/
[3] It's Getting Physical - EDHEC Infra & Private Assets, https://edhec.infrastructure.institute/paper/its-getting-physical/

- **Redefine the notion of "development"** to incorporate resources sufficiency, carbon efficiency, risk preparedness in the face of adverse events, societal cohesion and empathy, knowledge intensity (low tech, repair and ancient skills, self-help capacity, …);
- **Adopt the UNDP planetary boundaries and inequality adjusted Human Development Index** as a indicator for "development";
- Transition away from "sustainable development" towards multicriteria, **context-specific "resilience"**[4]
- "**Do something big**", from many small incremental changes to a few large jumps: instead of mobilising forever more funding, of adding forever more assets, constructions, technologies, apps and investments (ex. renewables add on top of fossil energy and do not displace them), make a list of what humanity (and especially the high-consuming North) can forego to develop (inefficient H2, more airports, …), what can be saved (food waste, water leakages, energy and materials inefficiencies, digital sufficiency, idle transport movements …) and then move from accumulation over substitution towards renunciation.

Chapter II. International peace and security

An important factor for securing international peace and security will be the successful international governance and management of public common goods, in the interest of all human and non-human life-forms.

This could concern for example the access to **critical raw materials including via deep sea mining, the recourse to geoengineering and carbon capture and storage technologies, the regulation of AI, machine learning, surveillance and the metaverse, the harvesting of space resources and the elimination of space debris, or the alignment on green shipping and aviation**. **Adaptation to climate change**, and the combined and mutually beneficial natural-behavioural and technological means to get there, should be given more precedence. Investing in critical infrastructure redundancy, strategic storage (food, energy, water, materials) and duplicated solutions are vital steps in ensuring peace and security. Reducing excessive energy and material consumptions in the global North and building intermittent **energy storage** capacity also become a global peace and security issue.

The Luxembourg Strategy RISK2050 study showed that business actors tend to underestimate certain future physical environmental risks such as the impact of flash floods, soil erosions, heat waves, droughts, deteriorating water ecosystems or a decline in animal or plant species on their business activities. In a highly connected economy, partial disruptions caused by such effects could quickly lead to severe global issues and endanger international peace and security. **Business adaptation and contingency plans** could mitigate these risks.

Chapter III. Science, technology and innovation and digital cooperation

Make education in STEM - Science (incl. natural and social), Technology, Engineering and Mathematics popular.

How to make digital and "green" mutually beneficial, knowing that digitalisation is a heavy energy and materials consumer and boosts consumption? Make sure twinning the digital and "green" transition is more than a lip service: To be effective, "we need to ensure that digital technologies do not consume more energy than they save." (European Commission, 2022). The twinning should aim to :

- reduce rather than increase our footprints,
- reduce rather than increase our vulnerabilities.

[4] Luxembourg Strategy's work on resilience: https://luxstrategie.gouvernement.lu/fr/publicationsbis/etude-resilience.html
https://luxstrategie.gouvernement.lu/dam-assets/documents/etude-sur-la-resilience/Chapitre-Resilience-2021.pdf
Video explaining the notion of resilience: https://www.youtube.com/watch?v=aEE3ND0yJ9M

For ECO2050, we need a responsible digitalisation which reconciles the digital, ecological and social transitions by

- reducing our ecological footprint and promoting virtuous practices
- strengthening society, reducing costs and consolidating democracy
- ensuring national sovereignty

A deeper analysis and more recommendations concerning the digital and green transition can be found here.

Chapter IV. Youth and future generations

The social contract is broken, at least in the global North. It is broken within and between generations. Adults have stopped transmitting knowledge and educating their offspring to become responsible, caring, cultivated. "Digitalise everything" creates distance and dehumanises. Education is being outsourced to internet, algorithms, netflix and social media. Many young people feel alone, without perspectives, without a vocation. It is as if we have stopped knowing how to life and enjoy nature, beauty, companionship.

Climate change, loss of biodiversity, scarcity of natural resources, pollution, degradation of adaptive, productive and regenerative capacities of soils and ecosystems leave humans more and more vulnerable and anxious. However, rather than causes of our misfortune, these phenomena seem to be symptoms of a society adrift. We indulge in compulsive or greedy behaviours, obsessive consumption, fear of others or of other opinions, fear of missing out. Many studies show a decrease in mental and physical health status or emotional and intellectual intelligence in young people. Society as a whole mistrusts science, governments, parties, the establishment. Participation in social life and elections goes down whereas radical opinion and aggression go up (Uncertain times, unsettled lives, UNDP Human Development report 2021/2022)

Recommendations:

- Give Sense: put people to meaningful work, in the sense that this work contributes to the habitability of the planet and the collective survival of humanity and is recognised and stimulated by a supportive and altruistic management. Cultivate individual knowledge and skills. Make people feel responsible and not assisted. Make education in STEM - Science (incl. natural and social), Technology, Engineering and Mathematics popular.
- Reverse reality blindness: Many vital things are taken for granted, without attaching the proper value to them: we don't care where our energy, food or waters supply come from, we consider low cost flying a right, we don't see biodiversity vanishing etc. The education system has an enormous task ahead to reverse this blindness. Never before had humanity so easy access to such an extensive body of knowledge. It is a societal mission to make all generations everywhere understand the human predicament.

Luxembourg Strategy's Vision ECO2050 proposed the following levers for societal change

Putting people, knowledge and wellbeing at the heart of the economy can be achieved by building a new generation of workers capable of leading the climate-energy-environmental-societal transitions. This would mean:

- Building a new generation of workers capable of leading the transitions
- Combining old and new knowledge, promoting scientific culture and cultivating excellence
- Promoting new business and management models (organisational innovation)

Chapter V. Transforming global governance

- Economic performance should not only be assessed via GDP growth. It is important to include measuring resilience and wellbeing as well as double materiality. More prominence should be given to the planetary boundaries and inequality adjusted Human Development Index (UNDP).

- In governance, corporate and public company **Boards of Directors** are often overlooked as an important governance level. More stringent criteria for incorporating the above performance indicators should be set and board members' remuneration be tied to effective impact with regards "sustainability" (see chapter I)
- For public institutions, companies, administrations or entities, the management **leadership** should rotate latest after 10 years in office, in order to avoid monopolisation of the function, abuse of power, nepotism or personalisation of the position
- **Foresight** should be institutionalised in the public service, in the legislative process, in international institutions, in corporate organisations, in the finance sector and in educational and academic practice

Luxembourg Strategy ECO2050 – Anticipation reads:

"Foresight is a fundamentally optimistic act. Given that traditional approaches to public policy are no longer sufficient in an environment of great complexity, uncertainty and rapid change influenced by a variety of stakeholders – many of which are found outside the public sector – it is desirable to pursue widespread, innovative anticipation and risk management for public services.

Strategic foresight helps to prepare for and respond to futures that require radically different approaches to public services. Anticipatory innovation refers to the ability of organisations to perceive, understand and act coherently on the future as it emerges in the present. The public sector must prepare for what is to come, continuously identifying, testing and implementing innovative solutions to take advantage of future opportunities while reducing risk through increased resilience of public systems."

In a world where everything is moving ever faster, the focus of attention needs to be on both the long term and the 'slow term'. Planning gives predictability and security to investments. In times of uncertainty and crisis, it is prudent to have a plan B and not simply expect the future to be identical to the past. Resilience must be learnt and external shocks must be built into plans for the future."