Annex 3: Collecting signals template

Module / Exercise 2 Scanning and Collecting signals (Collecting signals)

Using the suggested guiding questions and information sources (or other reliable ones) collect the signals relevant to your ecosystem. Each person works independently using the template provided. You can write or draw to illustrate your signal idea. You can use pre-defined categories when ideating your signals. The categories include: society, technology, science, business, governance, habitat, Earth resources, etc.

General guiding questions

- What is new and emerging?
- What have I not heard anywhere else?
- Is no one talking about this yet?
- Does this challenge a commonly held assumption about the world or ecosystem?
- Are decision-makers and other stakeholders ready for this?
- Would this have interesting implications or consequences in fields beyond my own?
- What could be found only in one particular place but - when scaled could transform the ecosystem significantly?
- What is so unexpected that gives you an "a-ha!" moment when you come to notice it as a strange future of an ecosystem?

Specific guiding questions:

- What new scientific or technological breakthroughs might be underway? Does this discovery break previous ways of doing things?
- What new intellectual ideas, beliefs, worldviews are emerging?
- How is a way of living/ culture starting to change?
- Are societal roles / models starting to change? How? Why?
- What are some emerging changes in relation to social media & Internet?
- Are consumption models starting to change? How? Why?
- Are there any emerging shifts in business models or the way we work?
- Are there any new emerging shifts in global norms, practices or regulations (e.g. related to trade, taxes, IP, environment)?

SOCIETY	**Signal 1:** *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*
TECHNOLOGY	**Signal 1:** *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*

SCIENCE	**Signal 1:** *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*
BUSINESS	**Signal 1:** *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*
GOVERNANCE	**Signal 1:** *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*

HABITAT	**Signal 1:** *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*
EARTH RESOURCES	**Signal 1:** *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*
OTHER	**Signal 1:** *(Write down the name or draw the*	**Signal 2:** *(Write down the name or draw the*	**Signal 3:** *(Write down the name or draw the*	**Signal 4:** *(Write down the name or draw the*

	signal here)	*signal here)*	*signal here)*	*signal here)*

Signal 1: *(Write down the name or draw the signal here)*	**Signal 2:** *(Write down the name or draw the signal here)*	**Signal 3:** *(Write down the name or draw the signal here)*	**Signal 4:** *(Write down the name or draw the signal here)*
Signal 5: *(Write down the name or draw the signal here)*	**Signal 6:** *(Write down the name or draw the signal here)*	**Signal 7:** *(Write down the name or draw the signal here)*	**Signal 8:** *(Write down the name or draw the signal here)*
Signal 9: *(Write down the name or draw the signal here)*	**Signal 10:** *(Write down the name or draw the signal here)*	**Signal 11:** *(Write down the name or draw the signal here)*	**Signal 12:** *(Write down the name or draw the signal here)*

Recommended information sources for collecting signals

1. ESPAS: https://espas.eu/horizon.html
2. European Commission, Critical materials for strategic technologies and sectors in the EU - a foresight study, 2020: https://rmis.jrc.ec.europa.eu/uploads/CRMs_for_Strategic_Technologies_and_Sectors_in_the_EU_2020.pdf
3. European Commission, Joint Research Centre, Muench, S., Stoermer, E., Jensen, K. et al., Towards a green & digital future – Key requirements for successful twin transitions in the European Union, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2760/977331: https://op.europa.eu/en/publication-detail/-/publication/58c3af16-f692-11ec-b976-01aa75ed71a1
4. European Commission, Directorate-General for Research and Innovation, Scaling up innovative technologies for climate neutrality – Mapping of EU demonstration projects in energy-intensive industries, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2777/926968: https://op.europa.eu/en/publication-detail/-/publication/2f1ec1d2-1173-11ee-b12e-01aa75ed71a1
5. European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Hafner-Zimmermann, S., Jagaciak, M., Kołos, N. et al., Chem4EU – Foresight for chemicals – Final report, Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2873/574731: https://op.europa.eu/en/publication-detail/-/publication/39f5014f-ed5e-11ed-a05c-01aa75ed71a1
6. Frontiers: https://www.frontiersin.org/
7. Futurism: https://futurism.com/
8. Migali S., Natale F., – (eds.), *Population exposure and migrations linked to climate change in Africa*, EUR 30881 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-43305-7, doi:10.2760/77546, JRC126594: https://drive.google.com/file/d/1nmI0fu4LeWn51Lq_6eCU0zaSOfX7SM0T/view
9. Millennium Project: https://www.millennium-project.org/scanning/
10. MIT Technology Review: https://www.technologyreview.com/
11. Monitoring European industrial ecosystems. Conceptual, Monitoring and Indicator Framework: https://monitor-industrial-ecosystems.ec.europa.eu/sites/default/files/2023-12/EMI%20Methodological%20Report.pdf
12. New Scientist: https://www.newscientist.com/
13. OpenAIRE: https://www.openaire.eu/
14. Quantumrun: https://quantumrun.substack.com/
15. SciTech Daily: https://scitechdaily.com/
16. Singularity Hub: https://singularityhub.com/
17. Strategic dependencies and capacities: https://commission.europa.eu/system/files/2021-05/swd-strategic-dependencies-capacities_en.pdf

18. Technology: https://www.technology.org/
19. UNDP (2023). UNDP Signals Spotlight 2023. New York, New York: https://www.undp.org/future-development/signals-spotlight/publications/undp-signals-spotlight-2023-insights-undps-futures-network
20. Visual network map of MegaTrends to 2050: https://rossdawson.com/visual-network-map-megatrends-2050/
21. Wired: https://www.wired.com/