

Goal 15: Earth Applications



Ensure that activities on the Moon improve life on Earth through scientific advancements and spin-offs.

Goal 15 seeks to address the benefits that establishing a lunar base may have for Earth, with associated targets and drivers listed in Table 4.16. Many of the proposed activities to be carried out on the Moon could benefit Earth directly, and these should be prioritized until the lunar activity can generate its own revenue and becomes self-sustaining. These activities include the economic benefits created by multipliers, spin-offs, and spin-ins described in Section 2.1, all of which could assist activity on Earth and should therefore be prioritized to ensure a sustainable level of interest and investment amongst relevant stakeholders.

- Space science and technology have successful histories in developing spin-offs for Earth from the research and investment carried out to fulfill space missions. Well known examples include the Image Sensors now found in almost all Digital Single-Lens Reflex cameras and phones; the cardiac pump and light-emitting diode (LED) lights (Lockney, 2018).
- Space agencies, such as NASA and ESA, have departments specifically focused on tracking the spin-offs developed, leading to new commercial products in areas such as consumer goods, medical care, energy, transport and public safety as illustrated in Figure 4.18.
- Every year, NASA publishes its spin-off report which sets out all the products derived from NASA technology.



Figure 4.18. The different categories of NASA spin-offs in 2018 (NASA Spinoff, 2018).

Table 4.16. Targets and drivers for Goal 15: Earth Applications

Targets		Drivers	
15.1	Encourage spin-offs from the technology developed for lunar missions.	15.11	Focus on developing technology and products that can benefit life on Earth.
		15.12	Communicate the spin-offs to further increase public awareness and support of space activities and programs.
15.2	Use the practices, technologies, and governance created for the Moon as an opportunity for improving sustainability on Earth.	15.21	Promote the use of the Sustainability Goals for the Moon in synergy with the UN Sustainable Development Goals for Earth.