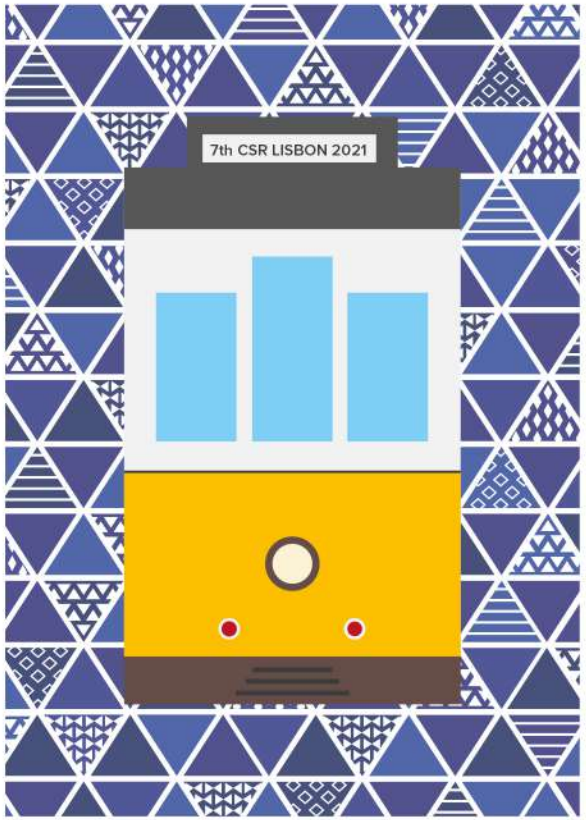


7th International Conference

# Corporate Social Responsability, Sustainability, Ethics & Governance

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# The role of fire intelligence in climate change mitigation and adaptation

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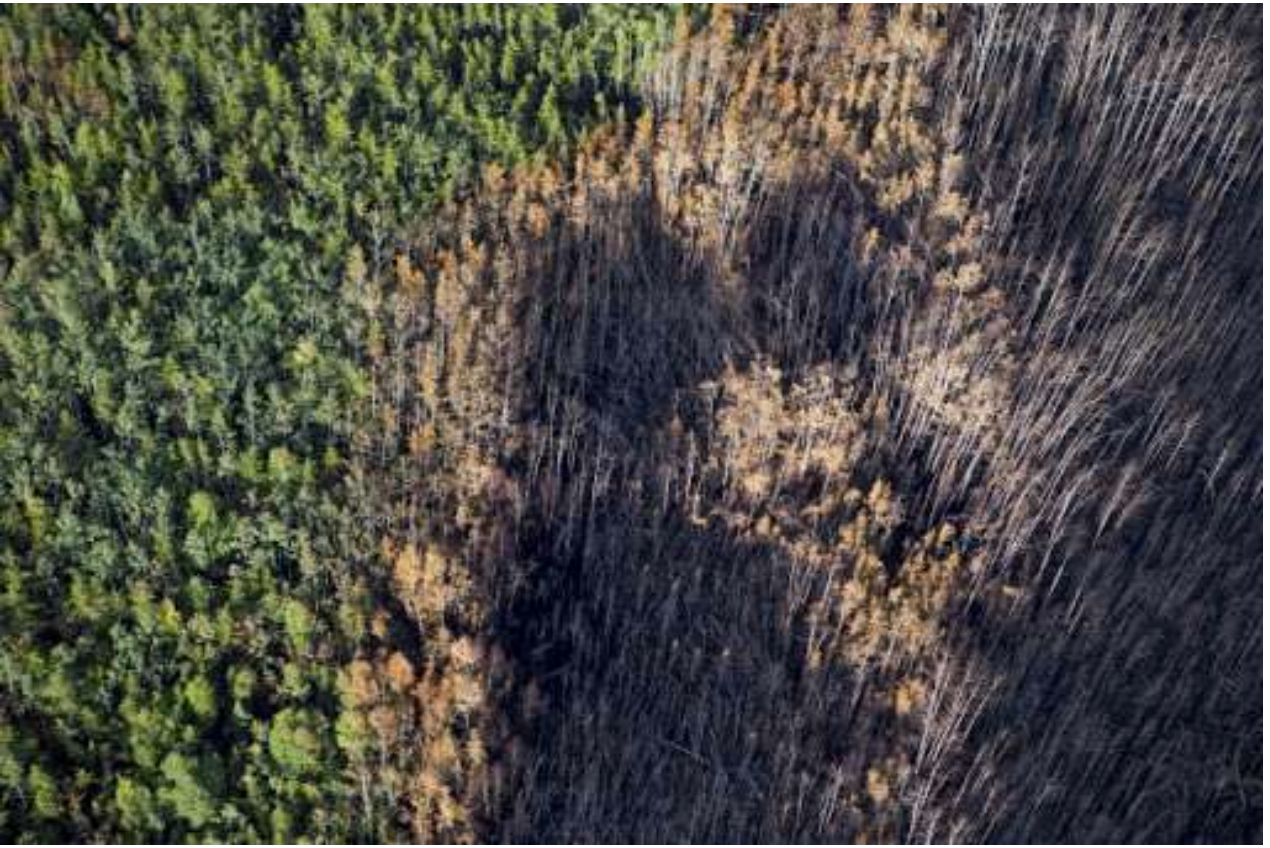
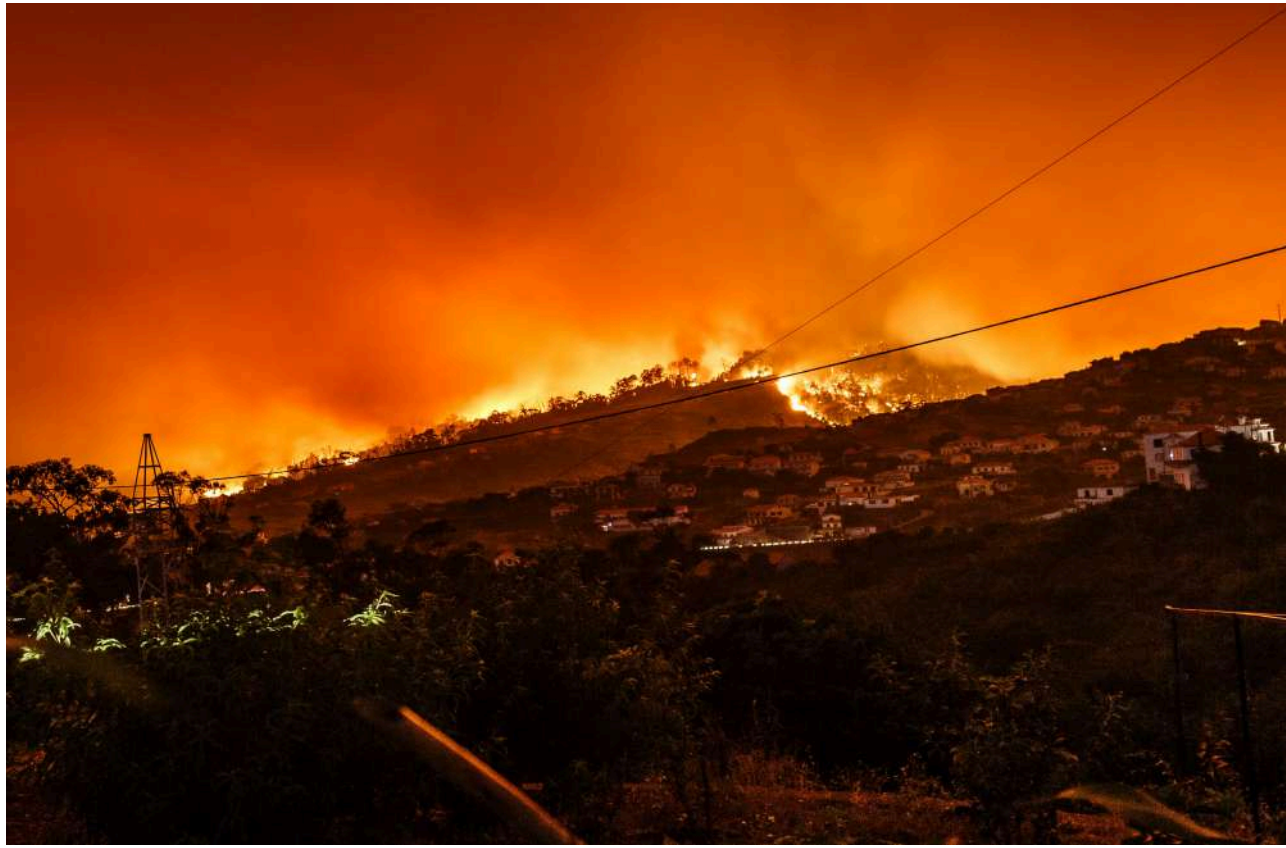
# Motivation





# Climate change **mitigation**

Actions that **reduce the rate** of climate change:

- by limiting or preventing **greenhouse gas emissions**, and
- by enhancing activities that remove these gases from the atmosphere.

Important to assess fire risk and deploy **prevention** and **preparedness** strategies to:

- avoid the occurrence of large burnt areas and the associated emission of greenhouse gases;
- preventing the loss of natural ecosystems responsible for climate regulation through carbon sequestration.

# Climate change **adaptation**

Actions to prepare for and adjust to both the **current effects** of climate change and the **predicted impacts** in the future:

- by increasing resilience to natural hazards and extreme events;
- by enhancing disaster response to minimize social, cultural, environmental and economic effects associated with wildfires

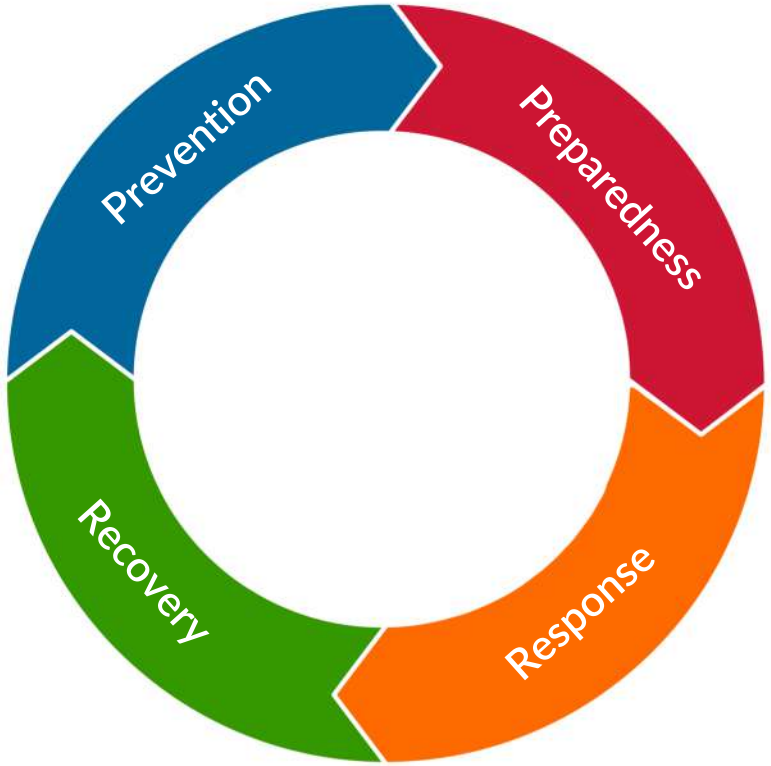
Important to improve emergency **response** and **recovery** stages to:

- protect safety and well-being of communities and preserve ecosystems by enhancing decision support systems for wildfire management, firefighting and civil protection;

# Fire Intelligence in Wildfire Management

- vegetation management to reduce fire severity such as: fuel mapping, or tracking of vegetation fuel moisture content.

- post-event analyses, e.g. burned area mapping,
- evaluation of cascading effects, e.g. erosion risks and air-quality estimation;




- risk assessment concerning environmental conditions;
- risk mapping based on land-use and social patterns;

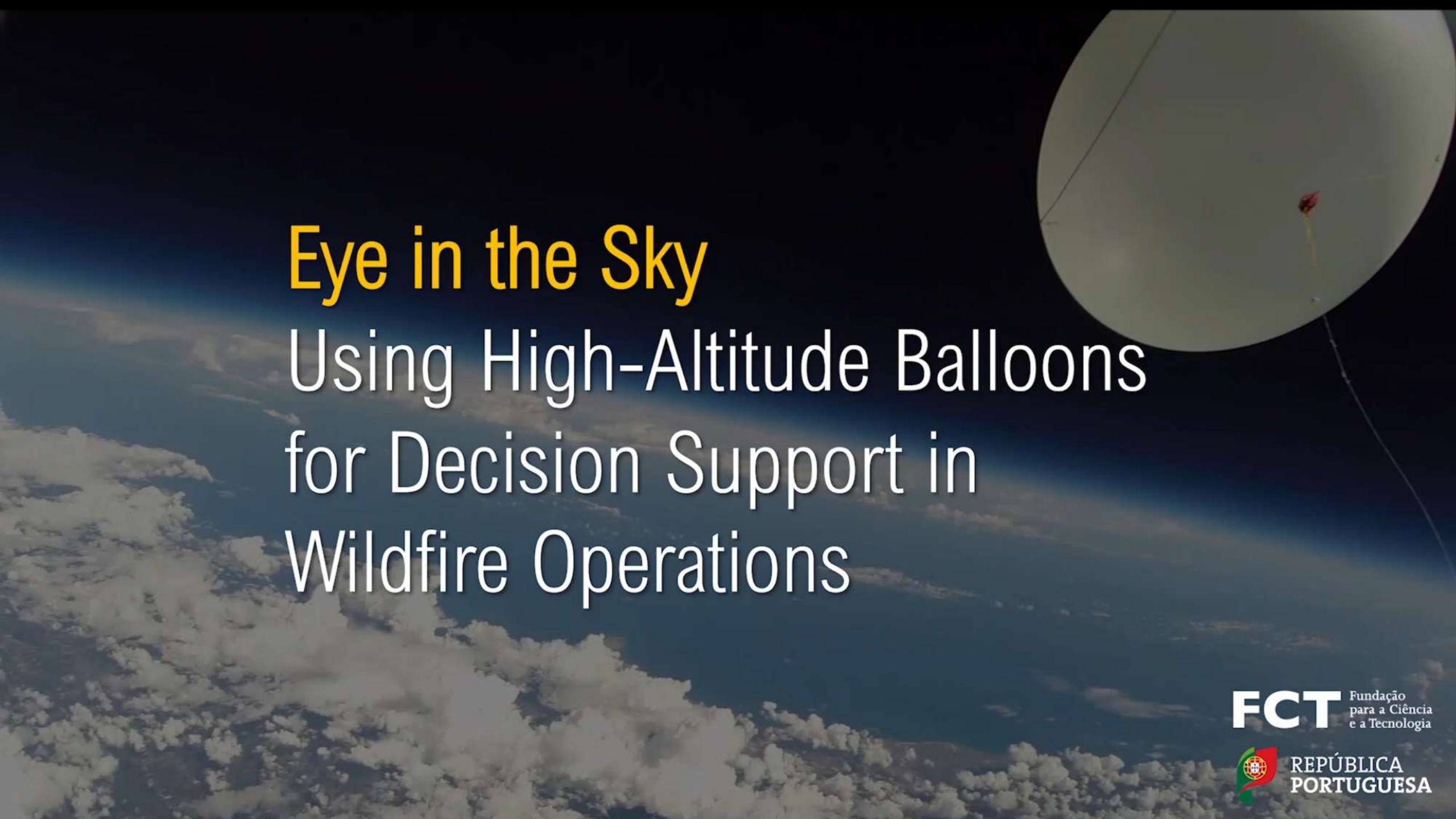
- wildfire detection and monitoring, e.g., early identification of flames and smoke plume, mapping of the fire front(s), detection of spot fires and identification of hot spots;

# Emerging Solutions for Real-time Fire Intelligence

Environmental monitoring applications require increased levels of **automation** in **data acquisition** and **data processing** to be systematic and sustainable.

Key enabling technologies towards advanced applications for decision support systems:

- **Autonomous robotics** (e.g., sensor networks, ground robots, drones, high-altitude balloons)
- Leveraging current and future **satellite data** streams
- Harnessing the advances in **artificial intelligence** and **machine learning**


Eye in the Sky
Using High-Altitude Balloons
for Decision Support in
Wildfire Operations
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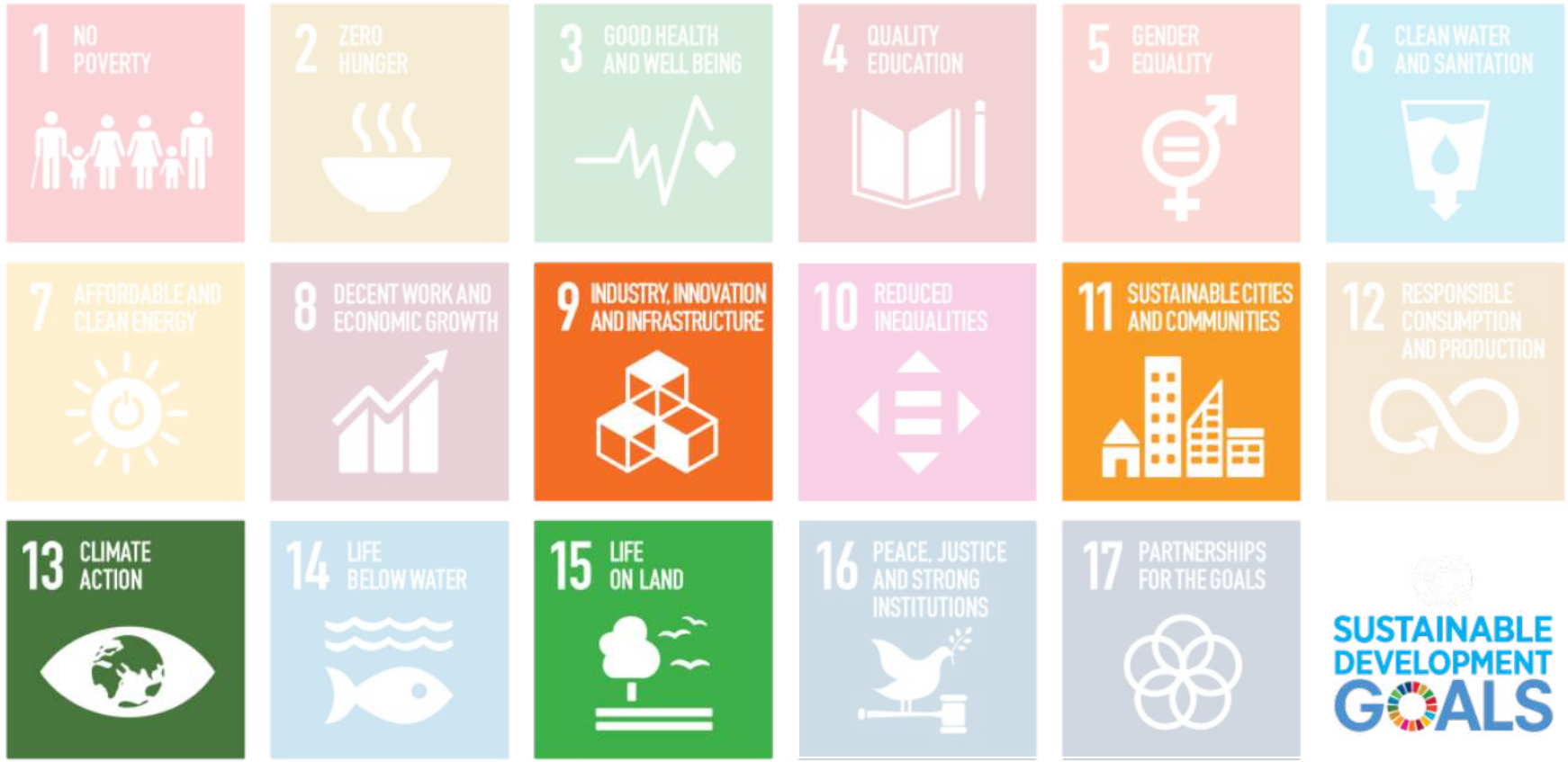
# Pathways to Impact

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To know more about this research, check out the Eye in the Sky project @ adai.pt/eyeinthesky

EYE in the SKY

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