

## WATER (SDG 6), ENERGY (SDG 7), AND DECENT WORK AND ECONOMIC GROWTH (SDG 8) Projects, research, synergies, and trade-offs with the 17 SDGs

**AGATHÓN** is an international, open-access journal of Architecture, Art, and Design, indexed in SCOPUS and listed by ANVUR (areas 08 and 10) as a Scientific and Class A Journal, as well as numerous other international databases. Building on the themes explored in Volume 17 | 2025, the International Scientific Committee has launched a new call for submissions on **Water (SDG 6), Energy (SDG 7), and Decent Work and Economic Growth (SDG 8) | Projects, research, synergies, and trade-offs with the 17 SDGs**, to select contributions which will be published in Volume 18 in December 2025. The three themes are part of the 17 Sustainable Development Goals (SDGs), adopted in September 2015 by the member states of the United Nations (UN, 2015) and promoted as a call for urgent action capable of combining prosperity, equitable development and protection of our Planet, all of which emphasise cooperation and partnerships between different countries, national and local governments, public institutions and private businesses, and civil society and individuals. However, with only five years remaining before the SDG deadline, progress has been uneven and at times overlooked or disregarded. Therefore, the scientific community has a responsibility to reflect on ‘where we stand’, ‘where we are headed’, and ‘what we may yet achieve’.

An assessment of progress based on data was conducted by the Global Sustainable Development Report, which called for appropriate adjustments and an urgent acceleration of implementation policies in two subsequent documents (IGS 2019, 2023): without these adjustments, humanity will face prolonged periods of crisis and uncertainty, further endangering the global principle of ‘leaving no one behind’ and safeguarding the entire ecosystem. While the 2019 Report noted that, for some goals, the international community would need to speed up, and for many others, it confirmed that the world was on the right path, the situation portrayed in the 2023 Report is significantly different, as it reveals that for some goals, progress has not accelerated enough, and for others – such as food security, climate action, and biodiversity protection – the world is still moving in the wrong direction.

In light of this scenario, it is more urgent than ever to evaluate ‘what needs to be done and how it can be done strategically’, considering that, as stated by the United Nations during the definition of the SDGs (UN, 2015) and confirmed in the 2019 Report, most goals are synergistic. Social and environmental goals, in particular, have systemic impacts

that drive overall progress toward achieving all other SDGs. Despite the rapid growth in scientific literature on the interconnections between the SDGs and the fact that numerous studies suggest synergies outweigh trade-offs, there is still significant potential, yet to be fully explored and leveraged, to make simultaneous progress on multiple goals through integrated planning and appropriate strategies. Specifically, Goals 1 (No Poverty), 2 (Zero Hunger), 3 (Good Health and Well-being), 4 (Quality Education), 5 (Gender Equality), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), and 17 (Partnership for the Goals) are identified as strategic, as they are capable of generating benefits for many other goals.

Nevertheless, achieving the SDGs also necessarily imposes trade-offs that often result in critical issues not resolved by current practices. Examples of this are the actions and strategies promoting Goal 2 (Zero Hunger), where land cultivation and intensive agricultural practices generate soil degradation, pollution and loss of biodiversity, or those related to Goal 8 (Decent Work and Economic Growth) when uncontrolled growth and development result in exploitation of natural resources beyond sustainable limits. These critical issues are confirmed by the recent Global Sustainable Development Report (IGS, 2023), according to which progress on Goals 14 (Life Below Water) and 15 (Life on Land) is more negatively affected by progress in other areas than positively by specific actions.

It is important to recognise that the nature of connections in terms of synergies and trade-offs between different goals can vary significantly based on the dimensions of ‘space’ and ‘time’, as well as among different income levels and population groups. For instance, scientific literature shows that poverty reduction has overall positive effects on the 2030 Agenda in low-income countries, while integrated strategies addressing climate change and inequalities are more decisive in achieving goals in high-income countries. However, the latter appear to face more trade-offs than others, which may partly explain their slow progress in reaching the SDGs. Additionally, many interconnections have a transboundary nature: according to the OECD (2019, 2024), 57% of the 169 targets achievable in one country can have repercussions in other regions or countries, crossing national borders through flows of capital, goods, and human and natural resources, thus positively or negatively influencing their future and development prospects. In this sense, while we cannot afford to generate negative and costly impacts elsewhere, failing to recognise potential pos-

itive spillovers in 'distant' places should be seen as a lost opportunity.

Given all these variables, it is essential to carefully understand the interconnections in terms of synergies and trade-offs, both to guide scientific research and define methods and tools that can effectively reduce compromises, address uncertainties, and capitalise on specific context opportunities. This understanding also supports strategic decision-making processes and promotes 'revolutionary' interventions. Many tools and methods are currently available for an integrated analysis of the Goals, for decision support, and for progress monitoring, such as the toolbox with guidelines for ex-ante impact assessment promoted by the European Commission (2023). However, considering the systemic effects of policies, pathways, measures, and actions, a greater capacity to think in systems is required, representing the best approach to optimise interactions among SDGs. Integrating the theme of the SDGs with Digital Humanities (DH) also opens innovative perspectives that can enhance synergies between fields of knowledge and limit trade-offs among the SDGs. DH promote a systemic and integrated approach to tackling global challenges and analysing the complex dynamics among different objectives by providing a new framework in which digital tools and methodologies are applied to the study of the humanities. This involves new ways to monitor, understand, and improve the interaction between SDGs and their relationship with strategies and actions.

Expanding on these reflections, **AGATHÓN** explores the fields of Landscape, Urban Planning, Architectural and Urban Design, Engineering, Architectural Technology, Design, Restoration and Recovery, and Representation, and proposes the theme **Water (SDG 6), Energy (SDG 7), and Decent Work and Economic Growth (SDG 8) | Projects, Research, Synergies, and Trade-offs with the 17 SDGs**. The goal is to foster debate by gathering essays, critical reflections, research, experiments, projects, and interventions that adopt an innovative, multidisciplinary, and multi-scalar approach. Contributions should adopt a systemic perspective, addressing process dynamics – from design and production to implementation and management – while incorporating ex-ante and ex-post evaluation methodologies and models.

The focus is on overcoming limitations, bridging gaps, breaking barriers, enhancing synergies, and minimizing trade-offs to better align with the broader SDG framework, as the Built Environment interacts with every SDG while also representing a critical challenge. On one hand, it is a major consumer of energy and natural resources, as well as a relentless producer of harmful emissions and waste. On the other hand, the way we intervene in the built environment can worsen inequalities and impact human health. This is especially significant in cities, whose vulnerability and po-

tential for growth are embedded across all SDGs. By 2050, approximately 70% of the global population is expected to live in urban areas, making strategic action even more urgent. There is the need, now more than ever, for a deliberate and well-planned human intervention – one that is designed and implemented in alignment with as many SDGs as possible, to enhance overall quality of life, sustainability, social equity, public health, and community resilience.

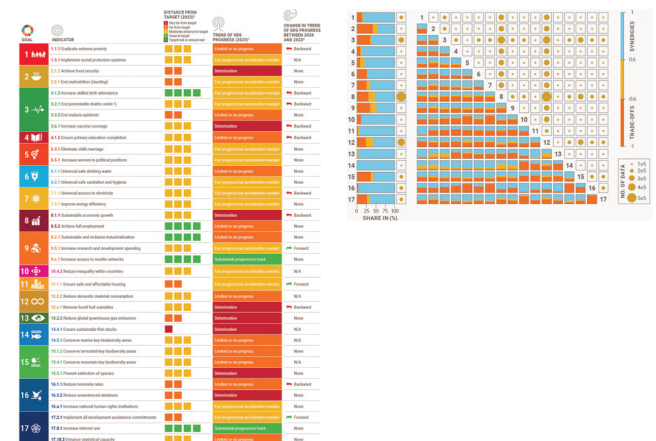
**SDG 6 | Clean Water and Sanitation** | Water is a primary good not only for humans but for all forms of life on Earth: it is a right and a valuable resource for the entire ecosystem endangered by climate change, land occupation, extensive cultivation, and indiscriminate exploitation of the resource. Water represents the critical link between society and the environment as it is central to sustainable socio-economic development and the achievement of many SDGs, particularly those related to health, education, the economy, the environment, energy and food production, and the resilience of territories and communities. Architectural disciplines can play a key role in addressing the challenge of reducing, reusing, recycling, regenerating, and recovering water by intervening at different scales to enhance its circularity. This approach can eliminate pressure on existing water resources and promote the concept of 'multiple water', sourced from both conventional and alternative supplies, through integrated design, engineering, and technological solutions across various sectors. Such strategies create opportunities for innovation, governance, and resource management, improving resilience to extreme rainfall, droughts, and flooding while restoring water-related ecosystems, protecting biodiversity, and reducing water pollution. Effective interventions can include controlling urban expansion, preserving or restoring soil permeability in both private and public spaces – such as parking lots, courtyards, and plazas – to mitigate the urban heat island effect. Additionally, designing infrastructures like water squares, rain gardens, stormwater tree trenches, and bioswales can help regulate stormwater runoff, while enhancing the role of natural and artificial wetlands. Further measures involve optimizing water use in agriculture, livestock, and industry through innovative processes and technologies, such as hydroponics, permaculture, precision farming, and soil moisture sensors. Net-zero water buildings also offer a sustainable solution by managing water within closed-loop systems, sometimes operating independently from municipal supplies. In these cases, water can be reused in green roofs and walls, or purified through phytoremediation systems. The integration of digital tools can further enhance efficiency and performance, particularly in interconnected water-energy systems designed for sustainability and resilience.

**SDG 7 | Clean and Accessible Energy** | Energy is essential not only for individual well-being but also for the devel-

opment and inclusive growth of societies. The implementation of sustainable energy production systems is a central focus of both national and international policies, representing one of the greatest challenges but also a significant opportunity in humanitarian, social, environmental, and economic terms. Energy influences fundamental aspects of life, including food security, poverty, employment, safety, healthcare, education, water supply, industrial production, climate change, communication, and access to the internet and digital technologies. Architectural disciplines can play a key role in addressing energy challenges in construction, transportation, industry, and agriculture by adopting cross-sectoral, multi-scalar, and interdisciplinary approaches and tools (both material and immaterial), as well as nature-based solutions. A systemic approach can integrate strategies that promote, for both new and existing contexts, by way of example: the production of energy from renewable sources with wind, photovoltaic, geothermal and hydrogen plants (but also with sustainable forests), their integration in built and natural contexts (of historical-cultural and environmental-landscape value) and strategies for their recovery, reuse and recycling at the end of their life; an urban planning and regeneration based on the '15-minute city', Positive Energy Districts, Energy Communities, soft mobility, accessible routes, implementation of public transport in integrated modes and green areas to limit the heat island phenomenon; agricultural production based on low-energy paradigms such as Low-Tech, Permaculture, Solar Planck and hydroponics; site-specific design solutions and architectural typologies, as well as materials, elements, components, technologies, construction techniques, off-grid and passive systems capable of improving the energy efficiency of the building envelope; processes for optimizing and reducing embedded and operational energy consumption; the promotion of natural-based materials, local or zero-kilometre supply chains; strategies and actions to raise public awareness and literacy regarding energy conservation.

**SDG 8 | Decent Work and Economic Growth** | Employment and economic growth play a crucial role in combating poverty, as they are closely linked to all other SDGs in both developing countries and industrialized economies. The built environment interacts with Goal 8 at every scale, from territorial planning to individual objects, and throughout all stages of the construction process. This impact is maximized when supported by policies that incentivize productive activities, promote the creation of skilled jobs – thus ensuring equal opportunities and inclusion for disadvantaged groups – encourage the development of micro, small, and medium-sized enterprises, and promote creativity and innovation, and as guiding values in corporate policies. However, sustainable and inclusive development cannot disregard knowledge of the planet's limits and must be able

to separate economic growth from indiscriminate use of non-renewable resources, preferring actions of recovery, recycling, reuse and upcycling. Various approaches and numerous strategies contribute to achieving this goal: the regeneration of degraded urban areas with the creation of green infrastructure and neighbourhood services for the improvement of residents' quality of life, of municipalities affected by depopulation with the enhancement of renewable resources, culture, traditions, and local products, also for tourism purposes, or of buildings or real estate complexes of historical and cultural significance with restoration and reuse actions for services for the local community; the promotion of research and development activities for innovation and of cooperation projects and public-private partnerships with NGOs, universities, the public and private sectors to promote the sustainable development of local economies; the enhancement of skills (linked both to tradition and to new digital technologies) and the systematization of multidisciplinary knowledge aimed both at the optimization of production processes and at the development of low-impact natural materials and elements, components, and assembly systems usable in multiple life cycles and with long durability; the increase in productivity levels through diversification, technological upgrading, and innovation, promoting local supply chains also among different sectors or focusing on high value-added and high-employment sectors; the development and promotion of new modes of service delivery, communication, and training, leveraging the potential of digital technology through dedicated and interactive platforms and portals.



Stato dei progressi dei diversi SDG in relazione ai target; Sinergie e compromessi determinati dalle interconnessioni tra i diversi SDG (source: IGS, 2023, *Times of crisis, times of change – Science for accelerating transformations to sustainable development* – *Global Sustainable Development Report 2023*, United Nations, New York).

**GUIDELINES FOR THE PROPOSAL SUBMISSION AND TIMELINE OF THE EDITORIAL PROCESS** | Authors are invited to submit an Abstract (max 5,000 characters, spaces included; references are not included in the counting) in Italian, or in English in the case of a foreign contributor, which must mirror the main contents of the article. For the Abstract submission, the Authors will have to use only the downloadable file (Format Abstract\_ENG) that can be found on the page '[Information for Authors](#)'.

The Abstract must be written concisely and clearly, corresponding to the themes of the Call for Papers. The Abstract must be accompanied by: Author's references (name, surname, qualifications, affiliation, telephone numbers, e-mail); the section of the Journal (Architecture, Art, Design) and the typology of article (Essays & Viewpoint, Research & Experimentation, Review Articles, Dialogue) that is submitted for publication; 5 keywords that reflect the contents of the paper; references that will be mentioned in the article.

In particular, the Research & Experimentation proposals have to outline: originality (what is being expressed for the first time and for what target); essay and research references (the background of the study), relevance to the theme, subjects involved, financing; results (analytical aspects and proposals for discussion); limitations of research and significant developments; cultural, practical and/or socio-economic implications, if any.

In the case of Essays & Viewpoint proposals, attention has to be given to: object and aim of the proposed article; originality (what is being expressed for the first time and for what target); methodological approach; essay and research references that reveal the background of the study; analytical aspects and proposals for discussion.

The Abstract submission deadline is **July 7, 2025**, by sending a .docx file to the e-mail [redazione@agathon.it](mailto:redazione@agathon.it). The Authors of accepted Abstracts will receive a communication from the Secretary by July 22, 2025.

Once an Abstract has been accepted, the Authors will be invited to deliver the Paper within the term set, i.e. by **September 15, 2025**. The Paper must respect the number of 25,000 or 30,000 characters, including spaces, excluding notes and references. 15 images (300 dpi) must also be sent via 'wetransfer.com'. For the Paper submission, the Authors will have to use only the downloadable file (Format Paper\_ENG) that can be found on the webpage '[Information for Authors](#)'.

The Authors of the accepted Papers, having been reviewed by Referees, will know the outcome by October 13, 2025; the final draft of the Paper, adding any integration following the Referees recommendations, must be presented by **October 20, 2025**.

Paper, with its abstract and keywords, will be published both in Italian and English while notes, captions of images,

texts of any tables and Author's biography will be published only in English. The text, bibliographic references, images and notes, must comply with the Editorial Guidelines for Authors listed on the webpage '[Information for Authors](#)'. On the same webpage, Authors can find the review form that will be used by Referees.

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In order to cover costs of running the Journal and dealing with procedures for assessing papers using a double blind peer-review, AGATHÓN has decided to avail itself of a contribution from the Authors of the articles; they are therefore invited to contribute financially for the editorial services (APC – Article Processing Charge), only if the paper is accepted for publication, after the peer-review process and any potential revision of the paper.

The APC of a single paper is set at € 450 (plus VAT, 4%). In the case of papers written by more Authors, the article publication fee will be increased by € 50 (plus VAT, 4%) for each Author in addition to the first. The fee must be paid in accordance with the guidelines that will be sent to Authors at the same time as the communication of acceptance of the paper for publication.

**To encourage the publication of contributions by Authors with primary affiliation to Universities and Research Institutions in countries defined by the World Bank as 'low-income or lower-middle-income economies', AGATHÓN will select a maximum of two papers for publication free of charge**, subject to the positive outcome of the double-blind peer review process.