


Q hack 4.0 **Call 4 Earth**

The Youth action for Cop 27

Curated by
Marina Placido, Chiara Ricci, Tiziana Tuccillo



unicef 

ITALIA

Earth Day  Italia

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*This work is dedicated to young people from all over the planet
with the hope that they can hire very soon
political, economic and social governance roles
to promote sustainable development
capable of giving happiness to every human being.*



Preface

These pages describe the commitment made by hundreds of girls and boys in view of COP27. A commitment that truly expresses the desire of the new generations to actively participate in the United Nations climate negotiations, aware as they are that the whole future of our Common Home depends on those negotiations.

UNICEF Italia, IAIA Italia and Earth Day Italia, in fact, wanted to intercept and enhance this desire by conveying it into two distinct activities, which are proposed in this book, not only as relevant contents that all COP27 negotiators are invited to make on their own, but also as a good practice to be taken as a model for a truly concrete and constructive intergenerational dialogue on climate.

In particular, it involved both individual and group planning activities, carried out by hundreds of girls and boys invited to participate in the Call4Earth contest of Earth Day Italia and in the Hackathon that UNICEF ITALIA has been organizing for three years in collaboration with IAIA Italia in view of the COP.

The young people were able to work on the problems of the territory known to them both through personal experience and through the use of Qcumber, the technological platform for environmental impact assessment developed by IAIA Italia in collaboration with the main existing databases.

Alongside the projects of the students and the detailed description of the programs put in place for their involvement, we also liked to faithfully report the authoritative testimonies that accompanied the work.

Happy reading everyone!

Tiziana Tuccillo
Earth Day Italia
Cultural Committee Director





Greetings to young people from the President of the Italian Committee for UNICEF

UNICEF's involvement in the fight against climate change has been growing steadily in recent years, and we are working to ensure that UNICEF can increasingly function as a mediator between young activists at the global level, particularly in view of COP27.

We feel it is crucial to promote the active role of young people in protecting their own rights and, especially in this day and age, the right to live in a healthy environment.

For this reason, such opportunities for dialogue and joint planning are paramount and a key priority for UNICEF.

I encourage the young people here today to work with passion and creativity, pointing out the main issues affecting the places where they live.

Carmela Pace

Introduction by the executive Director of UNICEF Italy

I would firstly like to thank all the young boys and girls here today, because you are the true protagonists of this day.

I am in New York to take part to an international meeting of all the Executive Directors of UNICEF National Committees and during these days I am truly proud to be part of an organisation that is always eager to improve, renew and above all innovate itself.

Talking about environmental issues and climate change, children are those suffering most from their impact. At UNICEF headquarters in New York, many innovative projects are being developed. Some of them are extremely interesting.

One of the possible solutions to tackle climate change could be to install solar-powered water systems in some of the world's most strategic refugee camps. During emergencies, UNICEF mainly focuses on providing conflict- and disaster-affected children with access to water, and the installation of the solar-powered water pumps would allow to save about USD 30 million over the next 10 years.

Think how much can be done with USD 30 million, besides reducing the environmental impact! UNICEF is an organisation that wholeheartedly works to promote children's rights and carries out interventions in the fields of health, nutrition, education, and much more.

With this Hackathon, you have the chance to propose innovative solutions to numerous problems, but the way you will work – following the scientific method and using a specific platform - will be crucial. You will bring together a scientific approach, your enthusiasm, the desire to find solutions, to do things together and to bring concrete results. This is what is needed, this is what UNICEF needs.

Paolo Rozera

Introduction to the work by Walter Ganapini

I am honored and extremely grateful to UNICEF, IAIA, and Earth Day Italia to be with you in Call for Earth.

Today it happens that you young people are involved in a very important challenge, which concerns a phase of our experience as human beings, in our common home, the only one we have: the Earth. A heavy experience. I would have preferred to leave you a much more decent world than the one we are living in. It happens that your challenge today takes place when all of us are overwhelmed by four systemic crises, which has never been recorded in the history of humanity. We are in the midst of a terrifying war crisis; we are still in the midst of a pandemic crisis, far from over; we are living the tails of that terrible financial and industrial crisis of the ultra-liberal model and deregulated globalization that took hold in 2008.

But for all of us the fact that there is a fourth crisis weighs heavily: the climate crisis, which has become irreversible. The other crises, all interconnected, make the much-needed battle to stop global warming increasingly difficult, to stop filling the air we breathe and the atmosphere not only with carbon dioxide, but also with all the climate-altering gases we emit: starting with natural gas, methane, and many other emissions from industrial processes, transport and so on.

Therefore, in this context, we have hope in the younger generation, indeed we are certain of them. Not because we have to delegate the future to younger generation: in reality we are all at stake as Pope Francis teaches us with *Laudato Sii* (forgive the quote, but for me it was a fundamental element). The Earth cries out in pain. It is the only common home we have. We must stop thinking that the economy means: raw material + work + technology + capital = commodity. This invites us to a model, a behavior, a senselessly consumerist, materialistic, unbridled lifestyle; where the only thing that matters is the profit of a few to the detriment of the many. Therefore, inequalities increase, and that terrible thing that Pope Francis calls the "throwaway culture" grows, where waste is also rejection. But the dramatic thing is when the waste are the men and women who suffer, the migrants that the climate crisis sets in motion, as well as those who are already on the move for wars, destruction and so on.

We are living in a difficult time. It is absolutely essential that we do not waste a second to deploy all the resources that we have. Your resources, even from an intellectual point of view, are very important to stop global warming; to ask that the world returns to a reasoning of peace, that there is the possibility of a decent life for all, as the United Nations 2030 Agenda asks us. If someone tells you "I do not know what to do", refer to the 2030 Agenda: it is a toolbox. Everything we have to do is written on it, from the small things: from how we should behave at home to how we manage waste; from how we manage water, even on a personal level, to the major issues concerning inequalities, gender issues, the need to develop institutions and standards that are friendly to humanity; to bring the person, personal relationships and community back to the center.

I have great confidence in this work and I am very grateful to UNICEF, to IAIA and to Earth Day Italia, for standing alongside you young people in this effort. We must know how to network, stay connected, demand that we listen to each other. To do this, it is necessary to unite all the oases of change, which fortunately are already present in our reality, and make them become a caravan capable of changing what those who do not want change mean. These people lead us to a terrifying reality, which was summarized two years ago by the New Yorker and then by the New York Times in a famous cartoon: there is a gentleman, big like me, with a tight and a top hat, in a gray world. and black of rubble, debris, waste, emissions; in front of him he has a boy-well, with a bow tie, and he says to him: "See son, tomorrow all this will be yours".

"If anything we will go to Mars", "The seven and a half billion who live with all the crises ... they will take care of it". Woe to the world! We must prevent the great "fossil powers", the few people who have immense profits, from forcing us to follow a path that we do not want to practice, and that would lead us very far, in the negative. So we impose the will of those like you, who want to change so that the world becomes more beautiful and absolutely livable. As the Native Americans said: we had the land on loan from our children; that is you.

I embrace you with great affection. Thank you so much.

Walter Ganapini

European Environment Agency Honorary Member of the Scientific Committee



Call 4 Earth

Earth Day Italia calls the young
active participation in COP

by **Marina Placido**

Director of the Young and Environment Program
of Earth Day Italia

with the contribution of **Gabriele Renzi**
responsible for the Call4Earth project

On the occasion of COP26, Italy set a milestone in the history of international climate negotiations by establishing the COP YOUTH as the elective seat of the intergenerational dialogue on climate change. The young people thus officially enter the most important negotiations in history. But how will they make their contribution in a world in which not even the most experienced negotiators are able to achieve the reduction of greenhouse gas emissions?

Let's face it: it is really very difficult for their voice to be heard in a context where the war between the good of humanity and the egoism of fossil finance has already sacrificed the future of our children for decades!

It is equally true, however, that young people have the strength of reason and the genuineness of common sense on their side. And so while the greats of the earth continue to postpone fundamental decisions for the survival of life on earth, the children are preparing to do their part by putting in place today a silent revolution that very soon will blossom in that ecological transition that so many speak of but of which very few are becoming real builders.

They will make the difference, and it is very important for us at Earthdayitalia to accompany them on their journey towards the governance of sustainable development that our generation has not been capable of.



Foldable and portable photovoltaic panel

By Sara Plaga and Kim-Joar Myklebust



Levante is a green tech Startup that has designed and patented an origami-inspired foldable photovoltaic panel to create clean energy to always carry with you.

Thanks to a revolutionary design inspired by the photovoltaic panels used in satellites, the Levante product is compact, transportable and allows you to save space on the move. The device, when closed, can open with an origami mechanism in a rigid, self-supporting structure and not bound to a surface that offers maximum power. The product guarantees an increase in energy production thanks to the double-sided photovoltaic cells. The plug & play design allows for easy installation of the panel, which can be connected directly to the vehicle's battery pack and recharged on the go. With an integrated IoT technology the user can remotely monitor and control the panel. Designed according to the principles of eco-design, the panel is made of 30% recycled carbon fiber from automotive industry waste, and is easily decomposable and recyclable.

An intelligent waste container

By Nicolas Lorenzo Zeoli, Gabriele Cavallaro



Ganiga is a startup founded by a team of young guys who designed hooly!, a waste container equipped with artificial intelligence that, connected to an app, will help citizens locate the bins placed in strategic and non-strategic places. By following the directions provided by an interactive map, you will always have supervision over the bins in the neighboring area. The hooly baskets! have the advantage of being closed, avoiding environmental pollution with the dispersion of waste and odors, and above all monitored in real time: this guarantees constant data on correct functioning, on the state of capacity use, on the categories of waste hosted, on the statistics and on geolocation. The bin is able to differentiate the waste inside and this combined with the possibility of tracking allows people to locate the nearest bin with a single click, and the collaborators who empty them information about the fullest ones and those to be emptied according to the waste contained.

A creative platform for textile Circularity

By Sara Piccinni Leopardi



Resrcle is developing a social and sustainable platform for textile circularity. The supply chain as we know it, has negative impacts in several respects, instead Resrcle integrates creative solutions for textile companies that want to reduce their waste, recover disposal costs and find precious materials and resources for an ethical and sustainable supply chain.

It is a community of designers, fashion brands, manufacturers, recyclers sharing the same vision, and with a passion for the circular economy. It offers a marketplace for the sale and purchase of all textile leftovers, training and certification programs, and personalized consulting services.

<https://resrcle.com/hub>

The first vertical and intelligent wind turbine

By Edoardo Simonelli, Emanuele Luzzati and Soufiane Essakhi



GEVI is a young startup that has designed and built wind turbines equipped with artificial intelligence, which, by collecting and analyzing the weather conditions, is able to adapt to maximize energy production. The 30W prototype demonstration allowed to see the improvement over the traditional fixed blade configuration. The first large-scale MVP to be on the market in one year is in the pipeline. The turbine is able to adapt to different wind conditions and types of environments, maximizing the production of clean energy. The long-term goal is to accelerate the ecological transition and quickly replace fossil fuels. The GEVI turbine aims to achieve Goal 7 (Clean and accessible energy) and Goal 13 (Fight against climate change) of the United Nations 2030 Agenda.

<https://www.geviwind.it/>

A superfood can be born from the waste of grape production

By Luca Deiana and Massimo Angius



Vitigna is a startup that has developed a technology to reuse pomace (wine production waste) and produce a superfood in the form of a powder in order to reduce gastro-intestinal problems.

Its grape powder, produced in Sardinia, is in fact gluten-free and rich in fiber, omega 6, polyphenols. This means that it has several beneficial properties on the body: it is rich in antioxidants and reduces gastro-intestinal problems, cholesterol and blood sugar levels.

This product, Vitigna, can have a great variety of uses ranging from the making of doughs to jams and condiments. <https://vitigna.com/>

Get to know the city area with clean air

By Simone Forcina and Ivan D'Urso



CleanxCast has developed an app that can provide real data on microparticulate and other air pollutants. The aim is to highlight the less polluted areas of the city and make people aware of the quality of the air, so that they can choose when and where to do outdoor activities. The service offered consists of indicating the greenest areas of the city to citizens through an app, providing real data, the trend and prediction of the levels of the most dangerous pollutants for health (PM10 and PM2.5). CleanxCast is located in a market that offers air quality detection solutions related to macro areas and based essentially on weather and pollutant data. The innovative mission of the startup is to provide real data on microparticles, relating to historical trends and future forecasts, in order to highlight the less polluted areas of the city.

Monitor and measure sorting in the office

By Riccardo Leonardi, Giovanni Lucifora, Fabrizio Custorella,
Egidio Canzoniere, Federico Fedi and Simone Cavariani



ReLearn has designed NANDO, a plug & play IoT device for monitoring and measuring waste produced, we help people immediately reduce their environmental footprint. NANDO is a small sensor installed in office bins that monitors separate waste collection very accurately through its artificial intelligence. It recognizes all the objects inside the bins by discovering the waste delivered incorrectly. It is combined with a monitor that interacts with the refusal through games and multimedia content.

In this way it spreads awareness on best practices to achieve perfect waste collection and a sustainable lifestyle using a gamification approach

Shared forest management

By Yamuna Giambastiani



Bluebiloba has developed Forest Sharing, the first Italian platform for shared and innovative forest management dedicated to private forest owners. Through a marketplace, technicians and consultants will be able to manage unmanaged or underutilized private forest assets according to PEFC standards. A network where the meeting between the owners and the economic operators that make up the supply chain will be facilitated and organized, creating the economies of scale necessary for the "forest product" to become economically convenient to manage through the various possible activities (sale of wood and / or other forest products, creation of recreational areas / adventure parks / thematic routes, management of Rural Development Plans, management and enhancement of ecosystem credit).



Hackathon

UNICEF towards a new one
partnership for young people

by **Chiara Ricci**
Head of Sustainability and Climate Change
Office of the Italian Committee for UNICEF

As recognized by the UN Human Rights Council and the Special Rapporteur on human rights and the environment, children are more vulnerable to climate change, as it threatens their right to education, physical and mental health and access to adequate nutrition, clean and safe water and sanitation.

According to the UNICEF report *The Children's Climate Risk Index (CCRI)*¹, the climate crisis is a child rights crisis.

Approximately 1 billion children - nearly half of the world's 2.2 billion children - live in countries that are at an 'extremely high-risk' from the impacts of climate change.

These children face a deadly combination of exposure to multiple climate and environmental shocks with high vulnerability resulting from a lack of essential services, such as water, sanitation and hygiene, health care and education.

Younger generations are those paying the highest price for the impacts of climate change, although they have shown sensitivity and activism on this issue and yet, they are the ones who have less and less say during negotiations and decisions.

In recent years, children and young people have played a renewing role in fostering new global thinking and advocating for climate justice through protests, activism and engagement in the fight against climate change.

However, their voices are not being heard in legislation, policies and programmes to tackle the climate crisis. A UNICEF² analysis found that only 34% of Nationally Determined Contributions are child-friendly.

To contribute to UNICEF's global strategy of fostering young people's participation in the fight against climate change, UNICEF Italy, in partnership with IAIA Italy and Earth Day Italy, organized the Hackathon 'Q-Hack4.0 Call4Earth' on climate crisis and environmental sustainability, to ensure the engagement and active participation of young people also in view of COP 27.

¹ <https://www.unicef.it/media/rapporto-un-miliardo-di-bambini-a-rischio-estremamente-elevatoper-gli-impatti-della-crisi-climatica/>

² <https://www.unicef.org/media/109701/file/Making-Climate-Policies-for-and-with-Children-and-Young-People.pdf>

The partnership between UNICEF Italy, Earth Day Italy and IAIA Italy made it possible to base the Hackathon on the overall strategies that the Organizations are pursuing, to ensure young boys and girls play a central role in finding solutions to address the negative effects of climate change through technological tools that can also foster a new digital citizenship.

Specifically:

UNICEF Italy carries out awareness-raising actions with all relevant institutions to uphold children's rights in climate decision-making and last September launched the campaign Cambiamo ARIA³ (Let's Change AIR), to draw public attention to the fact that 'the climate crisis is a child rights crisis' and to support the participation of young people and adolescents in climate change and sustainability issues.

Earth Day Italia has launched the 'Call4Earth - Produci il cambiamento' initiative to encourage young people to play an active role in the fight against climate change. Young people, from students to young starters, were invited to submit ideas and projects to help achieve the 17 Sustainable Development Goals of the 2030 Agenda. Earth Day Italy evaluate and select the best projects and support their development.

IAIA Italy has developed and made available to institutions the Q-Cumber platform, a tool to measure and assess environmental impact. The platform uses data and tools based on artificial intelligence and the methodology 'q-Hack4.0' to manage q-Hackathon, enabling young people to participate in local governance in an informed and active manner.

Thanks to the synergy between these three actors during the 'Q-Hack4.0 Call4Earth' Hackathon, a number of experts and youth from the YOUNICEF group (UNICEF Italy's young volunteer movement) led around 100 young boys and girls from different Italian regions in setting up different working groups. Through the q-City4.0 technology platform, they gained access to data and processing tools, becoming aware of the state of the environment, in order to propose sustainable solutions on climate change issues to their communities.

³ <https://misurailtuoinpatto.unicef.it/>

The main objectives of the working groups were:

- To foster youth empowerment and skills development;
- To improve the ability to use data/tools to discuss/plan strategies and projects about environmental sustainability;
- To build the skills needed to collaboratively participate in group activities and engage in discussions with decision-makers.

In this process of participatory planning and active citizenship, the youth came up with solutions to propose to the stakeholders of those communities most at risk from climate change with the aim of making the target territories healthier and more resilient.

Proposed solutions to tackle climate change and the environmental crisis include: accelerating the energy transition, starting with the installation of geothermal plants and solar PV systems, biogas production, and the design of energy communities; developing alternative mobility systems, from the construction of waterways to use river flow and reduce the impact of road transport, to the enhancement of urban electric micro-mobility; and managing and monitoring activities to reduce gas emissions (methane) from intensive livestock farming.

A project looking to the world

The 27th Conference of the Parties of the UNFCCC (COP27) will take place in Sharm El-Sheik, Egypt, from 6 to 18 November. The COP meets every year and the first meeting was held in Berlin in 1995. The COP is the main forum where States Parties making commitments under the Paris Agreement.

The COP is a strategic opportunity for UNICEF to call for child-friendly environmental policies and to advance their demands for meaningful participation in events and decision-making processes.

In particular, UNICEF is calling on governments to:

- Increase investment in climate adaptation and resilience in key services for children.
- Reduce greenhouse gas emissions. To avert the worst impacts of the climate crisis, comprehensive and urgent action is required.
- Provide children with climate education and greens skills, critical for their adaptation to and preparation for the effects of climate change.
- Include young people in all national, regional and international climate negotiations and decisions.
- Sign the Intergovernmental Declaration on Children, Youth and Climate⁴ Action: in 2019, at the 25th Conference of the Parties (COP25) in Madrid, a group of world leaders joined youth activists in a historic moment - to sign an Intergovernmental Declaration on Children, Youth and Climate Action. As one of the custodians of the declaration, UNICEF works with governments, including Italy, to support its implementation. All Member States of the United Nations are invited to sign the Declaration at the upcoming COP27.

The 'Q-Hack4.0 Call4Earth' hackathon is therefore part of a broader strategy to promote the active participation of the younger generations in identifying solutions to tackle the negative impacts of climate change and facilitate dialogue with institutions.

COP27 will be the first opportunity to present the outcomes of the 'Q-Hack4.0 Call4Earth' Hackathon to policy-makers and young people from all over the world, and foster dialogue between the younger generations through the exchange of good practices.

⁴ <https://www.unicef.org/environment-and-climate-change/climate-declaration>

Qcumber

A working tool
for change

di **Giuseppe Magro**

President IAIA Italy

International Association for Environmental
Assessment and Impacts

The Qcumber Platform is a 'multi-stakeholder' system for measuring, assessing and monitoring environmental impacts and sustainability to support the governance of cities and territories.

The platform has been developed and validated through the work of an international team of researchers, practitioners and institutions and is constantly updated according to evolving levels of knowledge and through the use of Artificial Intelligence.

The Platform makes it possible to:

- measure, assess and monitor environmental impacts in an objective, provable and replicable manner, providing validated scientific tools;
- design Eco-sustainable solutions through the use of Artificial Intelligence;
- monitor in a predictive and shared way the impacts to continuously improve the ESG performance of public and private organisations.

The q-HACK4.0 Project

In 2015, the United Nations approved the 2030 Agenda for Sustainable Development, identifying 17 main goals (Sustainable Development Goals - SDGs) that represent the direction towards which public/private organisations will have to focus their efforts in order to improve its social responsibility and credibility towards stakeholders, exploiting the potential of new digital technologies in a systemic approach of participation and active citizenship.

The q-HACK4.0 is a particular form of hackathon, developed by IAIA Italy, providing for the use of specific digital tools that help young people understand the environmental and social sustainability conditions of their territory, and support them in the shared design of innovative solutions to implement the 2030 Agenda for Sustainable Development.

Effective co-design takes place in small groups where *skills* such as critical and creative thinking are activated. At the same time, working in an innovative learning environment, the young people have the opportunity to use their pre-knowledge and knowledge, cognitive and non-cognitive skills, to develop active citizenship skills.

It is a training process for active citizenship, that allows participants to identify potential allies and to become aware of the role that each citizen can play. This process enables young participants to gain the necessary confidence to take action and create change.

Working Methodology

The participants, split into 6 GROUPS and supported by Younicesf tutors and experts from IAIA Italy and Earth Day, exchanged their views about the territorial co-design of solutions aimed at improving the sustainability of some Italian contexts. Guided by a specific *procedure*, based on data and information provided by the Qcumber Platform, they worked to *codify* the problem, identify a potential solution and draw up a specific Action Plan

Procedure:

Stage 1

Territorial scope: Choice of the territory affected by the problem identified and addressed in the Action Plan

Stage 2

Problem setting: Identifying Data/Strategies/Organisational Tools for coding the

To solve a problem, it is first necessary to recognise it and gather data/information on the subject. It is then crucial to understand that to deal with a problem in the best possible way, it is necessary to establish a working method, cooperate with other people, and then define how to manage and deal with it. For this reason, the first step when undertaking an active citizenship project is to define the methodology for managing the problems identified in the area. We shall call this methodology the 'governance model' of the problem, bearing in mind that, regardless of the different problems in the area, it is possible to identify common organisational and management constants, such as the definition and codification of the problem and the identification of the stakeholders involved (who/what causes the problem to whom/what, who/what can help solve it and what can enable decision-makers to put the identified solutions into practice).

Environmental problems have a 'relationship' structure between two components - who/what causes the problem and who/what is affected by it. For example, pollution comes from a source, that releases a certain concentration of a harmful substance and a target, potentially at risk of suffering its effects. Climate change

has components that cause temperatures to rise and targets affected by its impact.

Hence, when identifying the problem, it is important to describe it following the two-component structure (who/what causes it and who/what is affected by it). This method will allow you to address the problem with a 'diagnostic' approach, i.e. oriented towards identifying the possible causes and assessing the relevance of the effects in order to develop a possible solution.

Stage 3

Codifying the Solution: Identifying Actions to Solve the Problem

Identifying and codifying a problem, as well as agreeing a shared definition of the strategy and operational tools to solve it, are actions that are "connected" like links in a chain, so they are all essential to achieve the objective. This requires an Action Plan that clearly describes how people can contribute to the management of a problem, including identification, reporting, evaluation and possible solutions. This Plan should be described and tested in the field, so that its effectiveness can be measured and improved based on the impacts deriving from its implementation. This approach is called 'Evidence based Policymaking', and thanks to the wide availability of data made possible by the digital revolution, it is considered a great opportunity for the organisation of the cities and territories of the future.

Stage 4

Business Model/Action Plan: Building a business model based on: suggested solution, stakeholders, key partners, key resources, key activities, relationship with stakeholders and channels through which beneficiaries and stakeholders can be reached.

Stage 5

Project presentation and sharing: Public presentation of the work carried out, the results achieved and the choices made, as well as the data used to support them

***Q hack 4.0 - Call 4 Earth
Working Groups***

The young people who took part in the Hackthon:

Barbara Santino, Ludovica Cascio, Riccardo Bonafede, Roberta Torcivia, Sofia Vaccaro, Sofia Merenda, Virginia Sanzone, Alessandra Caruso, Alessia Giuliano, Luca Rinaudo, Vittoria D'Agostaro, Alessandro Genovese, Angelo Castiglia, Federica Spinosa, Francesca Pulcini, Giulia Curcio, Lisa Ceresia, Lucia Cirincione, Giulia Persico, Mattia Ferrante, Myriam Dolce, Serena Santino, Caterina Santoro, Chiara Pulidori, Claudia Jabbour, Davide Pulidori, Rocco Lapenta, Alessandro Salvatore Narbone, Anastasia Masiello, Asia Di Paola, Giulia Cicero, Isotta de Zandonati, Marco Bianca, Maria Chiara Gagliano, Michela Di Chiara, Sofia Russo, Vittoria Migliazzo, Andrea Bellanca, Aurora Di Baudo, Federica Fulco, Francesco Giardina, Giulia Tranelli, Monica Mazza, Roberta Vicentini.

The scientific facilitators of the IIA network

Cinzia Vischioni, Marco Francesco Della Bella, Giampaolo Turini, Luca Bertuol, Davide Gordioli, Giuseppe Magro, Concetta Gallo, Giuliana Fiini, Luca Maffezzoni.

The Environmental Facilitators of the Earth Day Italia network:

Valentina Falcioni, Commissione Internazionale di Ecologia
del Movimento dei Focolari
Marco Miggiano, Fondazione Mario Diana
Giuseppe Milano, Green Accord
Giuliano Giulianini, Earth Day.it
Gabriele Renzi, RETE IMPATTA
Francesco Salcito, Earth Day 22

Testimonials:

I'm very proud to have contributed to this hackathon and to have represented the Mario Diana Foundation. I was amazed at the ability of boys and girls to find simple solutions to major environmental problems. Thanks to their creativity and competence it was possible in just two days it was possible to create a concrete proposal to imagine a new way of experiencing a beautiful territory like that of Mantova.

Marco Miggiano
Mario Diana Foundation

If we do not face the climate crisis, our cities and planet will become inhospitable and unliveable places within a few decades. With an eye to the next generations, adaptation to climate change is the challenge of our time and the 21st century ". A few weeks after the start of Cop27 in Sharm El Sheikh, following the path of facilitator in the hackathon organized by Earth Day Italia, with UNICEF Italia and laia Italia, promoted to encourage young participants to trigger processes of the ecological conversion and transition energy aimed to transform the urban places of their daylife. Thus, I thought about the words that the Secretary General of the United Nations Antonio Guterres said at the latest international summits.

Those who have chosen to be an activist for environmental justice, interconnected with social justice and economic prosperity, know that the paths of the future must be opened for young people so that they are already protagonists in the choices that will influence their future today.

The young people, who participated in this co-design activity, including the analysis of scientific data available on the platform used, not only recognised the vulnerability of the planet, but also expressed concern about the impacts caused by the acceleration of anthropogenic climate change with increasingly intense and frequent phenomena, mobilisation is needed both with protests but also with proposals.

Realising that natural resources are not infinite and that there is a need to overturn the current linear and capitalist economic model, the shared experience of youth engagement has strengthened the urgency of a collective actions on the protection of biodiversity, the valorisation of ecosystem services, the potential of the circular bio-economy and urban regeneration to mitigate several forms of

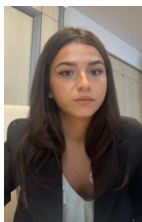
land degradation. It was emphasised that young people no longer want to play a secondary role but an active one. They want to be heard and no longer ignored. Their right to happiness is a massive reminder of our responsibility. The preservation of the planet is possible and can only be achieved through awareness, hope and leadership of young people.

Giuseppe Milano
Green Accord

YOUNICEF tutors



YOUNICEF (Young for UNICEF) is a UNICEF Italy's programme for all young people interested in promoting and protecting children's rights. The YOUNICEF network is made up of young volunteers - aged between 14 and 30 - who support UNICEF's mission. Volunteering with and for UNICEF is an opportunity to get in touch with peers, follow a training, express one's point of view, be heard and have an impact on key issues such as climate change, an area of particular interest for young people.



"As an Ambassador I was able to make the experience gained with the Hackathons and past years various projects, available to the other young activists. The Hackathon consisted of two intense days and the active participation of different people from kids to professionals, showed how much the need to act is shared. The goal, as true agents of change, is to establish good practices to be exported also abroad. "Think global, act local": Glocal is a fundamental concept, because acting locally, thinking globally, is the first step to implement the best practices useful for achieving shared change in the shortest possible time."

Alessandra De Canio



"To respond to the complexities posed by the climate crisis, one of the objectives of the Hackathon is to serve as a bridge between young activists and the COP, the main theater of the international climate dialogue, which will bring together global leaders and activists in Sharm el-Sheikh for COP27. To overcome the climate crisis, it is essential to put the most affected people, including children and youth, at the center of climate action. Precisely with the aim of recognizing this centrality, during COP25, the Intergovernmental Declaration on Youth and Climate Action was presented, representing an unique commitment to environmental policies and inclusive actions on the climate, especially for young

people, the importance of which I tried to underline during the event, also considering Italy's failure to sign the Declaration. Point 5 of the Declaration is aimed at improving the meaningful participation of young people in decision-making processes related to climate, a fundamental objective of our Hackathon too, which made its participants protagonists of change, giving space to their ideas."

Giulia Persico



"With 'Q - Hack 4-0 Call4Earth - Youth hackathon for COP 27', Generation Z used its most powerful weapon - namely technology - to find solutions to the greatest challenge of the 21st century: Climate Change"

Nafissa Aboulkassim



"Participating in the Hackathon with the Q-Cumber platform was the greatest revolutionary and responsible act in the fight against Climate Change. Response Act, Response Hack."

Maria Rachele Chillemi



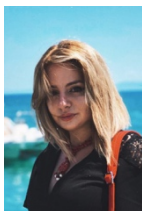
"Q-Hack4.0 is the ideal tool for combining youth participation and creative design"

Bianca Barchiesi



"Hackathon is a great opportunity for and with children! Where the grown-ups give in, the 'little ones' take flight and set an example, for the environment and the Earth"

Francesco Capoccia



"Together to take back our future. If not now, when"

Chiara La Rosa



"The Hackathon is the key to understanding and designing solutions and new sustainable models to face the challenges of Climate Change"

Maria Eugenia Modoni



"The Hackathon is the tool behind the concept of 'measuring what matters'. Sometimes you just need to extend the reach to see more clearly"

Francesco Mulas



"Hackaton means innovation, hope, activism, taking a stand and a sustainable future: young people are never too young to make a difference"

Hiba Nairi



"Climate change is like a beacon: it guides our choices"

Claudia Rodano



"Participating in this Hackathon allowed me to understand how our ideas, our desire to get involved and our need for change can be the real 'renewable energy' that our planet needs right now"

Francesco Salmena



"Our Hackathon has been only the beginning of a great adventure towards sustainability"

Alessandro Todero

Organizing

Italian National Committee for UNICEF

UNICEF is the United Nations Children's Fund. Our mission is to help children survive, thrive and fulfill their potential, from early childhood through adolescence, with specific focus on reaching the most vulnerable and disadvantaged children. Our action is guided by the principles of the UN Convention on the Rights of the Child, the UN Charter and the main human rights treaties.

UNICEF was established in 1946, in the aftermath of World War II, when there were millions of children in Europe in need of food, medicine, blankets, clothing and, in many cases, a place to live. After more than 75 years, UNICEF has reached more than 190 countries and territories around the world with the mission to protect children's rights and survival.

The Italian Committee for UNICEF – often abbreviated as UNICEF Italia, is a non-profit organization established in June 1974 and one of 33 National Committees working in donor countries on the basis of a Cooperation Agreement with UNICEF International and according to a joint and ongoing planning of activities.

As a National Committee, our twofold task is to raise funds to: support the programmes UNICEF carries out in developing countries; advocate with institutions to advance the rights of children; and to provide visibility to and raise public awareness about the rights and needs of children and adolescents at global and national levels. To pursue these goals, we work through a professional network of thousands of volunteers throughout the country.

IAIA Italian

IAIA Italy is the Italian affiliate of the International Association for Impact Assessment (IAIA), present in more than 120 countries worldwide, founded on 24 May 2006 in Stavanger, Norway, after the signature of its Convention during the IAIA World Congress "Power, Poverty and Sustainability - The Role of Impact Assessment".

IAIA Italy is committed at national and international levels to promoting the best strategies and tools for the effective integration of the United Nations Sustainable Development Goals (SDGs) within the governance of public and private organization.

More specifically, IAIA Italy supports:

- the development and dissemination of operational techniques, methodologies and tools for the planning, design and assessment of impacts and risks
- the design, development and testing of E-Governance artificial intelligence-based tools for environmental and social sustainability, in compliance with the main international standards
- the coordination of research activities in the socio-environmental impact sector the creation of an international network of institutional, private and university/research stakeholders with expertise in the field of Impact Assessment, Risk Assessment and Sustainability Assessment

In 2014, IAIA Italy received the mandate from IAIA International to organize and manage the 35th World Environmental Impact Conference IAIA15 'Impact Assessment in the Digital Era', held for the first time in Florence, Italy and attended by more than 1,000 delegates from over 90 countries.

As part of the event, IAIA Italy started a process of 'digital transition' of environmental sustainability assessment tools (DSS, IoT4Sustainability, Machine Learning, Artificial Intelligence, Big data) together with institutional and social stakeholders. This resulted in the international E-Governance 4.0 Project.

The E-Governance 4.0 project led to the signing of conventions with the Ministry of the Environment and several Italian institutions (Lombardy Region, Umbria Region, Marche Region, Abruzzo Region, Lazio Region, Unicef Italy), which enabled the validation of the Q-Cumber platform as an institutional tool for assessing environmental impacts. www.iaiaitalia.org

Earth Day Italia

Earth Day Italia is the no-profit organisation that represents the Italian branch of the Washington Earth Day Network – NGO recognised since 1970 by the United Nations Secretariat.

Earth Day Italia acts in several fields:

The Earth Day network counts on more than 75,000 partners in the 193 member countries of the United Nations. With billions of people involved in the Earth Day celebrations each year, this widespread organization can be regarded as a global leader in the field of environmental awareness and climate literacy.

Earth Day Italia focuses particularly on younger generations, considering them as the most significant stakeholders in the climate crisis and climate negotiations. Earth Day Italia is an accredited agency of the Italian Ministry of Education and is a partner of the Holy See in the Global Education Pact launched by Pope Francis.

Research and innovation can be strategic and fundamental in the Earth's Sustainable Development. For this reason, Earth Day Italia has created a network of Companies and Professionals specialized in innovability and able to guarantee excellent services to successfully develop even complex projects.

The IMPATTA ENTERPRISE NETWORK has implemented a true Innovation Ecosystem with scientific, technological and financial partners able to guarantee the best productive efficiency.

www.earthdayitalia.org



***Q hack 4.0 - Call 4 Earth
Projects***

The participants in the Hackathon 'Q-Hack4.0 Call4Earth', organised into six working groups led by the young people of the YOUNICEF group and the experts of IAIA Italy and Earth Day Italy, had access to data and processing tools, becoming aware of the main issues affecting Italian territories.

Through participatory planning and active citizenship, the young people developed solutions to propose to their communities, with the aim of making local territories healthier and more resilient and to accelerate the energy transition.

Group 1

The Geo-Chronicles of Narni

Accelerating the energy transition through the installation of geothermal plants.

The reference context of the project is the Conca Ternana, i.e. the area that includes the municipalities of Terni, Narni and Amelia. The data analysed showed that in the municipality of Narni the main combustion pollutants are CO₂, 87% of which comes from factories in the area, and ketones (industrial sector 80%), which cause major health problems.

The solutions identified to enable an energy transition, and thus reduce pollution, include: investing in the building of geothermal power plants in industrial sectors, setting up a development centre to study and use geothermal energy as a new renewable energy source, and disseminating good practices at local, national and European-international level.



Group 2

Mantua Green

Using incentives to promote the use of geothermal energy

Data from the Province of Mantua were analysed. The analyses immediately focused on indirect environmental impacts in terms of concentrations of nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}). First of all, these analyses showed the average annual concentration of fine particulate matter in the municipalities of Mantua, Castelfranco, Castiglione delle Stiviere, Roverbella, Goito, Marmirolo, Porto Mantovano, Curtatone, Viadana, Gonzaga, Suzzara, Pegognaga and Borgo Virgilio. Moreover, in these municipalities, the average number of children aged 0 to 5 years is higher than the average number of children calculated for all the municipalities in the Province of Mantua.

The causes have been identified as: non-industrial combustion, industrial combustion (combustions related to the operation of industries, refineries and petrochemical industries, very common in the Mantua area) and transport (engines powered by fossil fuels). In order to reduce emissions attributable to non-industrial combustion, geothermal energy and sustainable mobility have been promoted through the use of incentives.



Group 3

E-Boats Mantova “SALPIAMO MANTOVA”

Un sistema di trasporti alternativo

The analysis of pollutant concentrations in the Province of Mantua, and in particular the concentrations of nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}), has made it possible to assess the environmental situation in the Province of Mantua as a whole. To reduce the emissions of NO₂, PM₁₀, PM_{2.5}, and the impact of these pollutants on the population, in particular on children aged from 0 to 5 years and school-age children, the working group proposed the creation of an alternative transport system, which would exploit the basin of the River Mincio for navigation using electrically-powered boats, in order to reduce the use of conventional transport for people and materials.



Group 4

Suspended Green

Covering buildings roofs with vegetation

Nitrogen oxides and particulate matter are among the air pollutants with the greatest impact on human health. For this reason, the working group for Sicily Region immediately turned its attention to the emissions of these three elements in the city of Palermo. The project idea, named 'Verde Sospeso' (Green Roofs) concerns the possible covering of buildings roofs with vegetation and photovoltaic panels to reduce emissions and concentrations of pollutants. The project feasibility was explained in a business model that envisages the involvement and synergy between the public and private sectors, citizens and political authorities.

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Q-HACK 4.0 CALL FOR EARTH
15 e 16 ottobre 2022

Verde sospeso

PERMALINK AL
DOCUMENTO DI
PROGETTO

GRUPPO 4

Group 5

We purify the sea

From methane to biogas

We focused our attention on water treatment plants. We started from Cefalù, highlighting the issue of the poorly functioning plant. The plant, although subsequently replaced, still lacks proper maintenance and attention to the sewerage network. We realised that Cefalù is a too small area to investigate, and that the problem concerning the water treatment plants affects the whole of Sicily; in fact, 80% of the water treatment plants in the region are not up to standard.

What is the real problem? In addition to sea pollution, waste waters significantly contribute to air pollution. In this regard, we analysed some really interesting data. In Palermo, there is a considerable presence of methane that leads the municipality to be classified as a 'red' zone.

What are the possible solutions to the problem?

First of all, restoring the poorly functioning water treatment plants and converting methane into energy, into biogas, then into electricity, which could be used to power the plants: creating a water treatment plant.



Group 6

Medicus curat, natura sanat

A management and monitoring activity to reduce methane emissions from intensive livestock farming.

Despite the fact that Umbria is considered one of the 'greenest' regions in Italy, the youth, through the use of data and focusing their attention on the province of Perugia, found a considerable problem linked to the excessive production of methane by sheep and cattle farms. The methane produced by the animals on these farms is a highly climate-changing gas, 86 times more than carbon dioxide, that could further raise the temperature in the area of Perugia in the coming years. This area is heavily affected by the negative impact of climate change: vulnerable groups (children and the elderly) are already suffering from increasingly severe and persistent heat waves. After identifying the problem and carefully analysing the sources on the web and data available, a discussion started on the platform. This discussion resulted in a project proposal entitled 'Medicus curat, natura sanat'.

The project aims to lower methane emissions through a different animal feed, by including a taxation system managed by the relevant authorities that rewards those farms that will embrace the process of change. As young people emphasised, a multilateral cooperative relationship underpins this project as its implementation requires the involvement of public and private actors, local administrations and institutions at all levels

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Q-HACK 4.0 CALL FOR EARTH
15 e 16 ottobre 2022

**Medicus curat,
Natura sanat.**

https://www.q-cumber.org/permalink/MyQmap/COP27_UNICEF_q-HACK4.0_6/

GRUPPO 6

Comment on the projects by Rosy Battaglia

It is truly a joy to listen to younger people talk about the environment and sustainability. You, young citizens, are at the beginning of this journey; but I congratulate you, because having this awareness, having been able to put these projects together, is not for everyone. I can assure you.

Unfortunately, pollution is the other side of this climate change coin. The adults are still not aware of this problem, as you have proven to be.

You have been proactive, and surely you have hit the possible solutions; something that, in the world of adults, we always tend to avoid, with the result that unfortunately there are heavy pollution situations that are not resolved.

It is essential to underline the effects of pollution and climate change on health. The Istituto Superiore di Sanità, in the "Paths" report which analyzes the causes of illness and death for those living in the most polluted areas of Italy, unfortunately confirms that the greatest repercussions are on your generations: children and adolescents. This should already be sufficient stimulus for politicians and decision makers. As I listened to you speak, you gave me a strong determination. So, even if the topic of health seems distant to you, because you are young, you will have to add the awareness that acting for the environment also means acting for health: to prevent diseases that can occur prematurely, as unfortunately has happened in some cities such as Mantua, Taranto, and in other very serious situations.

I really hope that some of you, if not all, will continue on this path, due to the maturity you have shown in the exhibition. You have spoken with proper language, revealing knowledge not taken for granted for your age, both in terms and situations; and with a considerable awareness.

We need new generations who love the environment but who also work competently for the ecological transition, always starting from the data. All of you have used them carefully. Some have been able to interpret them better, in their complexity, and this is a guarantee of a correct analysis. Since a bad reading of the data risks leading to palliative or misleading solutions. For example: in a certain area the emission source may not be private transport but an industry; in another situation, private traffic could instead pollute more than farms. Precisely on the issue of atmospheric pollution emissions, there is a great

deal of activity in the world of scientific and university research, to build models and impact scenarios starting from the data collected by satellites. So much so that it is now increasingly easier to read these data and interpret them correctly.

In summary, in order to defeat the double problem of atmospheric pollution and climate change consequently, it is first of all necessary to determine the emission sources with certainty. Just as the territorial planning of each work - as you have done - must be participated and monitored by citizens. This brings us back to the European Next Generation EU program and the National Recovery and Resilience Plan. Millions of euros are poured into the territories, but only where the municipalities and regions have been able to plan. Therefore, civic participation is even more urgent. Let's not limit ourselves to a hackathon, go and check what is happening in your cities, just following the data of what you have analyzed.

And don't be discouraged. There are national civic monitoring networks throughout Italy. And it is essential to do so: participating and monitoring gives us the opportunity to take on a very specific civic responsibility, for the protection of common goods.

With a caveat. It is not always possible to avoid conflict, especially where transparency in administrative acts is lacking. Precisely for this reason, to obtain concrete results, civic participation must be based on a scientific approach, using data and information of public interest to be able to implement civic monitoring as well as the establishment of the Freedom Information Act also in Italy, guarantees. And what must emerge is the common will to protect our health, our environment, our world, our Earth.

Rosy Battaglia

Journalist, creator of the civic information project "Reactive Citizens"



Conclusions

"Old people tell their dreams and young people will have visions!"

Quoting Joel's prophecy, Pope Francis - the greatest environmental opinion leader on the planet - summed up the importance of intergenerational dialogue in this way, recalling His first World Youth Day that in 2013 had more than three million young people from all over the world participating in Rio de Janeiro.

A message full of meaning for those who, like UNICEF, IAIA and Earth Day, have experienced the excitement of working together with young people in the increasingly challenging fight against Climate Change.

If, as is often the case, anyone criticises young people for their disillusioned and bored outlook, they should know that the eyes of these girls and boys are ready to light up with hope as soon as adults tell them their dreams and involve them in realising them. This was exactly what happened in the 'Q hack 4.0 - Call4Earth' hackathon organised in preparation for COP27 in Sharm el-Sheikh. The young people involved from different parts of the country felt the power of the 'dreams' of those who rejected a predatory economy that destroys their future. And the young people began to have 'visions' that soon became energy, group work, and concrete sustainable development projects.

Therefore, the activity recounted in this book demands the reader's attention both for the quality of the work carried out - which also boasts very appreciable technical aspects - and for the model proposed by UNICEF Italia for the involvement of young people in the most important crisis of our time.

The best conclusion to this work is the commitment to replicate and increase it as soon as possible, in order to offer the United Nations and the governments of the 193 member countries a real constructive and functional platform for intergenerational dialogue at the Climate Conferences.

Because if it is true that young people on their own cannot face this great challenge, it is equally true that policy makers will never win this challenge without getting from young people the resource they need most: hope.

As Victor Hugo wrote in his masterpiece 'Les Miserables': 'I met on the street a very poor young man in love. His hat was old and his suit was threadbare. The water ran through his shoes ... and the stars ran through his soul.'

di Pierluigi Sassi

Presidente di Earth Day Italia Onlus

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