



POLITECNICO
MILANO 1863



Ca' Foscari
University
of Venice



**Università
Bocconi**
MILANO

THE FIRST DOLOMITE CONFERENCE ON THE GLOBAL GOVERNANCE OF CLIMATE CHANGE

ON THE ROAD TO SHARM EL SHEIKH



OCTOBER 20TH – 22ND 2022

**CASTEL FIRMIANO - MESSNER MOUNTAIN MUSEUM (BOLZANO) and
CASTELLO DEL BUONCONSIGLIO (TRENTO)**

DOLOMITE MANIFESTO AND THE CONFERENCE FOLLOW UP

INDEX

THE CONTEXT AND THE OBJECTIVES.....3

THE CONFERENCE AS A PROBLEM-SOLVING FORUM: THE METHOD AND THE KEY PEOPLE.....5

REPORTS FROM THE WORKING GROUPS.....7

WORKING GROUP 1 – THE ECONOMIC / ENERGY DILEMMA: HOW CAN WE MAKE THE WORLD GREENER WITHOUT REDUCING ECONOMIC GROWTH? WHICH ARE THE MERITS AND LIMITS OF DIFFERENT TECHNOLOGIES/ ENERGIES?.....7

WORKING GROUP 2 - THE DEMOCRACY QUESTION: HOW CAN WE FIND A COMMON AGENDA BETWEEN DIFFERENT GENERATIONS (AND SOLVE THE PROBLEM OF THE EMBEDDED SHORT TERMISM OF ELECTORAL CYCLE)? HOW CAN WE AVOID THE GILETS JAUNES EFFECTS?8

WORKING GROUP 3 - THE PROBLEM OF GLOBALIZATION: HOW CAN WE MAKE POLICY MAKING PROCESSES AT GLOBAL LEVEL MORE TO RESPOND TO THE CRISES WHICH ARE DEFINING THE 21 ST CENTURY?9

WORKING GROUP 4 - CITIES AS PLACES FOR EXPERIMENTING THE FUTURE: WHY ARE DIFFERENT CITIES DIFFERENTLY PERFORMING AS FAR AS EFFICIENCY OF10

WASTE MANAGEMENT, HOUSING, MOBILITY?.....10

REPORTS FROM THE PLENARY SESSIONS..... 12

PLENARY SESSION 1 - IMPACT FINANCE: GIVE FINANCIAL MUSCLE TO THE TRANSFORMATION AND MEASURE LESS AND BETTER TO DESIGN THE RIGHT INCENTIVES.....12

PLENARY SESSION 2 - THE END OF THE FOSSIL FUELED CARS AS CORNERSTONE OF INDUSTRIAL CIVILIZATION (WITH A FOCUS ON ELECTRICITY, HYDROGEN, SHARING AND SELF DRIVING).....13

PLENARY SESSION 3 - REINVENTING A ZERO EMISSION PRIMARY SECTOR / AGRIFOOD: SOIL AS A CO2 RETAINER14

PLENARY SESSION 4 - CLIMATE JOURNALISM AS A LEVER TO MAKE THE WORLD TO BE AS ONE.....16

PLENARY SESSION 5 – GEOENGINEERING: THE PROMETEUS’ DREAM OR A SCIENTIFIC NIGHTMARE? THE POSSIBILITIES AND THE ETHICAL IMPLICATIONS.18

PLENARY SESSION 6 – THE HOLY GRAIL OF PLURIDISCIPLINARITY: THE NEW RESEARCH AND TEACHING BET19

THE CONTEXT AND THE OBJECTIVES

The first **Conference of the Parties (COP)** – the supreme United Nations decision making body where the 196 countries of the world agree the convention dealing with climate change – was held in Berlin in 1995. In 2021, twenty-six years later the Intergovernmental Panel on Climate Change (IPCC), the report assessing progress towards the COP's targets had to acknowledge failure: since 1995 the observed global temperature has raised from 0,5 to almost 1,35 degrees above the mean values recorded in the period 1850 – 1900 preceding the last industrial revolution; the landmark objective of keeping such increase within 1,5 will not be reached not even in the most optimistic scenario in terms of reduction of CO2 emissions. In fact, 2020 was the hottest year of history, notwithstanding the sharp deceleration of human activities due to the COVID19 restrictions¹.

In 2022 an extremely hot summer and unprecedented drought in Europe and China has made climate change become part of the ordinary lives of hundreds of millions of people and swept away all remaining doubts: something big is happening as was forecast by scientists 35 years ago. The war in Ukraine and the energy crisis compounded even further the need to change approach, political processes we are using, even the instruments we use to measure and tackle global problems.

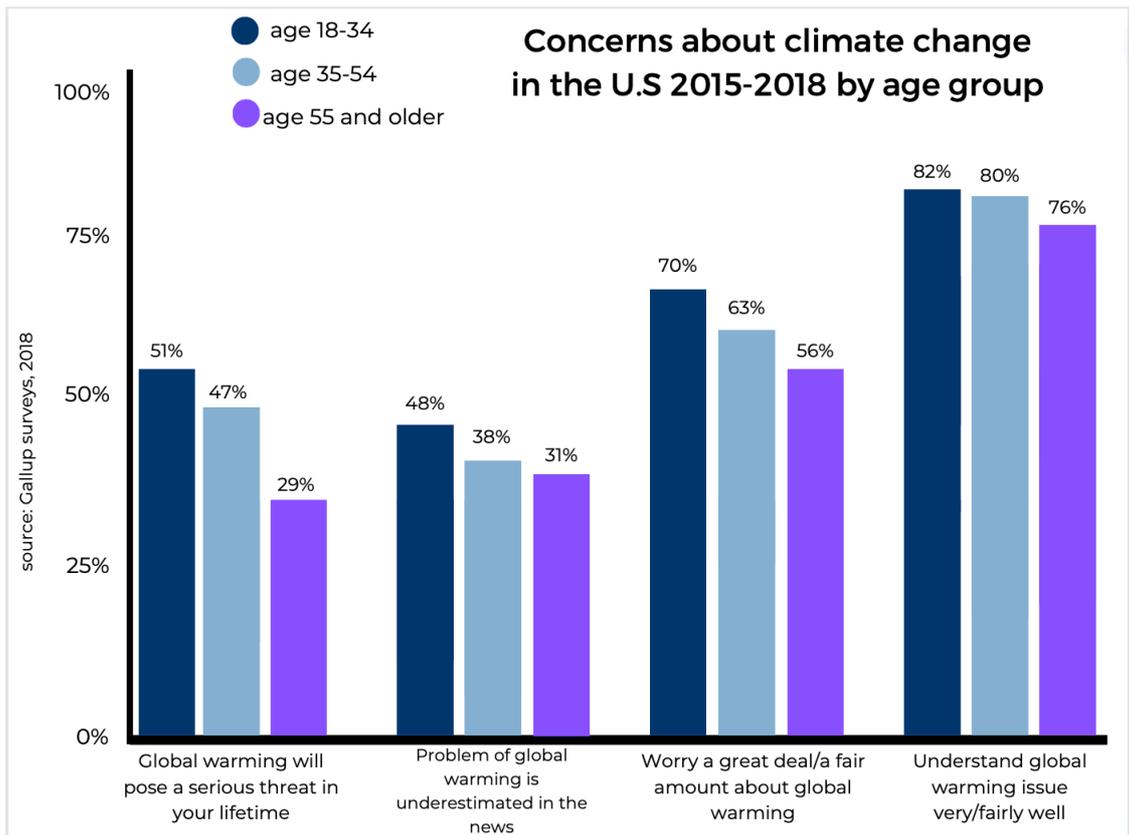
The fight against climate change and, more widely, the need to preserve the environment has, however, yielded an interesting result: it has indeed been the most powerful force towards more and better global governance. We do badly need to govern a globalization which is rapidly unfolding in a technological, financial, and even natural sense (as the COVID19 pandemic has dramatically demonstrated). It is again climate change which is exposing the inadequacy of a diplomatic machinery – the UN, the World Bank, the very COP – which was conceived at the end of the WW2 and shaped around a different, more stable world order. The existing global governance instruments had great merits in the second part of the twentieth century (although amid several crises) and yet they need to be greatly overhauled to respond to the complexity that are defining the new century.

The international public opinion – especially the younger generations – is finally perceiving climate change as an emergency, urging governments to find solutions.

A recent study² conducted in the U.S. proved that younger generations are not only more worried about climate change than the older ones, but also more aware of the issue and its impact on their daily lives:

¹ IPCC, (AUG 2021), "THE PHYSICAL SCIENCE BASIS",
https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf

² Gallup surveys, 2018 – Concerns about climate change in the US 2015-2018 age groups



There is an urgent need for a new Green Generation of global citizens with more knowledge and awareness on the matter of climate change. In order to have real change and transformation, we need people to be informed and aware, teachers to be prepared to talk about climate change, decision makers to have green competences.

The climate activist Greta Thunberg - during her speech in Milan right before Cop26 - urged governments to take action instead of giving empty promises ("Hope is not *blah blah blah*. Hope is telling the truth. Hope is taking action").

Starting from the urge to find solutions without putting aside the necessary fact-based discussion behind them, VISION and its partners conveyed **THE DOLOMITE CONFERENCE ON THE GLOBAL GOVERNANCE OF CLIMATE CHANGE**, a three-day meeting (from the 20th – 22nd October) where thirty visionary intellectuals, policy makers, entrepreneurs, managers, journalists, political and natural scientists met to discuss the matter of climate change and find innovative solutions.

Chairs of the conference were **Enrico Giovannini** (Italian Minister for sustainable infrastructures and mobility), **Bill Emmott** (Chairman of the Trustees of the International Institute of Strategic Studies and Former Editor of The Economist) and **Alexandra Borchardt** (Head of Journalism Innovators Program Hamburg Media School).

To make this ambitious project, VISION cooperated with several partners: its scientific partners were **Bocconi University** and **Politecnico** from Milan, as well as **Ca Foscari** from Venice. VISION's corporate partners were **AXA Italia** and **Autostrada del Brennero**. The locality partners were **Provincia Autonoma di Trento** and **Provincia Autonoma di**

Bolzano. The major global and Italian newspapers covered the three-day event which was held in the beautiful locations of **Trento and Bolzano**.

The major distinctiveness of the project was that it was meant to be a **proper problem-solving place**: the objective was, thus, to work – within the annual conference, but also via a number of brainstorming web sessions to be held between events – as a lab where radical and yet pragmatic ideas may emerge. Thus, VISION convened a very **pluri-disciplinary group of participants**: in fact, we are convinced that the nature of the question requires us to go beyond the logic of purely relying on experts.

The whole conference has been articulated by problems to be solved into **working groups** and **plenary discussions**, whose conclusions were then reported by the chairs and introducers of various sessions. The entire work has been coordinated by VISION and followed a methodology that VISION has successfully applied to the sister cycle of conference titled “CONFERENCE ON THE FUTURE OF EUROPE” (of which Vision already organized the first two editions in Messina/ Taormina³ and Siena).

The Dolomite Conference was a great success and we want it to become a yearly event, so that it can be the first step of a long journey together.

THE CONFERENCE AS A PROBLEM-SOLVING FORUM: THE METHOD AND THE KEY PEOPLE

During this three-day meeting, we used a very innovative approach: we believe that overly complex questions like climate change are posing an intellectual challenge. Thus, we tried to find innovative solutions by putting together different academic and professional backgrounds, different skills and even different political views.

The conference participants included:

Arno Kompatscher (President of the Autonomous Province of Bolzano); **Hartmann Reichhalter** (President of Autostrada del Brennero); **Stefania Giannini** (UNESCO Vice Director and former Italian Minister of Education); **Alexandra Borchardt** (Head of Journalism Innovators Program Hamburg Media School); **Francesco Grillo** (Director at Vision and Fellow at the European University Institute); **Kapoor Sony** (CEO of the Nordic Institute for Finance, Technology & Sustainability, Professor of Climate, Geoeconomics & Finance at the European University Institute); **Phoebe Koundouri** (President EAERE, co-Chair of United Nations Sustainable Development Network (UNSDSN) - Europe); **Enrico Giovannini** (Italy's Minister for sustainable infrastructures and mobility); **Marco Morelli** (Executive Chairman - AXA Investment Managers); **Maria Joao Rodrigues** (President of the Foundation for European Progressive Studies and former Portugal's Minister of Employment); **Bill Emmott** (Chairman of the Trustees of the International Institute of Strategic Studies and Former Editor of The Economist); **Massimo Tavoni** (Director of EIEE, Professor of Climate Change Economics at the School of Management of Politecnico di Milano); **Gilles Moëc** (AXA Group Chief Economist Officer); **Jonathan B. Berk** (A.P. Giannini Professor of Finance at Stanford Graduate School of Business (GSB)); **Claudio Spadacini** (Founder and CEO Energy Dome); **Andrea Tilche** (Former Head of the

³ The format and the results of the last CONFERENCE on the FUTURE OF EUROPE can be accessed here : <https://www.thinktank.vision/en/media-en/events/the-results-of-the-siena-conference-on-the-future-of-europe>

Climate Change and Earth Observation Unit); **Mariano Morazzo** (Deputy Director Enel Foundation); **Sharmini Peries** (Editor and Vice-President of Communications, Institute for New Economic Thinking); **Roberta Benedetti** (Generation Investment Management); **Cliff Prior** (CEO of the Global Steering Group for Impact Investing); **Michele Geraci** (Professor of Political Economy at the Nottingham University di Ningbo); **Eli Hadzhieva** (Founder and Director at Dialogue for Europe); **Francesco Cappelletti** (Policy & Research Officer European Liberal Forum); **Joseph Hammond** (Head of Global News at Zenger News); **Robert Tyler** (Senior Policy Advisor at New Direction); **Jaroslav Pietras** (Visiting Research Scholar, Wilfried Martens Centre); **Rohinton P. Medhora** (Distinguished Fellow and former President, Centre for International Governance Innovation, Canada); **Chaitanya Giri** (Research and Information System for Developing Countries); **Tong Shijun** (Professor of Philosophy of East China Normal University, Chancellor of NYU Shanghai); **Simone Borghesi** (Full Professor of Economics at the University of Siena and Director of the Florence School of Regulation – Climate at the European University Institute.); **Maja Groff** (Convener of the Climate Governance Commission); **Matteo Smerlak** (President of Global Peace Dividend); **Barbara Kolm** (Vice President of the Austrian Central Bank, Director of the Austrian Economics Center); **Elena Eva Maria Grandi** (Councillor for the Environment and Green Municipality of Milan); **Bill de Blasio** (Former Mayor of New York); **Giorgio Gori** (Mayor of Bergamo); **Maria Pia Quaglia** (Freelance Journalist); **Gianluca Galletto** (Managing Director, Technology and Innovation Partnerships, New York Housing Authority – NTCA); **Giovanna Melandri** (President of the MAXXI Foundation; President of Human Foundation/Social Impact Agenda); **Céline Soubranne** (Head of ESG Development, AXA IM); **Erik Berglof** (Chief Economist Asian Infrastructure Development Bank); **Jan Piotrowski** (Business Editor at The Economist); **Carlo Costa** (General Technical Director of Autostrada del Brennero); **Sheri Wilbanks** (AXA Head of Group Risk Management P&C Climate and Sustainability); **Bibop Gresta** (Founder and CEO Hyperloop Italia); **Karen Burns** (CEO of Fyma); **Camilla Cupelli** (La Presse); **Massimo Tagliavini** (Professor at the Free University of Bozen-Bolzano, Italian Association of Agricultural Scientific Societies); **Hans-Reiner Schultz** (President of Geisenheim University); **Giulia Bartezzaghi** (Director of the Food Sustainability Lab at the School of Management of Politecnico di Milano); **Siim Espenberg** (Director at the Centre for Applied Social Sciences (CASS), University of Tartu); **Adrian Guzman Gonzalez** (Mexican Space Agency); **Francesco Tubiello** (Team Leader, Agri-Environmental Statistics, Statistics Division at FAO); **James Fahn** (Executive Director, Earth Journalism Network); **Malaika Vaz** (National Geographic Explorer, TV presenter and filmmaker); **Hans Cosson-Eide** (Head of the Climate Group at NRK); **Maurizio Fugatti** (President of the Autonomous Region of Trentino-South Tyrol and President of the Province of Trento); **Diego Cattoni** (President of AISCAT and CEO of Autostrada del Brennero); MEP **Herbert Dorfmann** European Parliament; **Marco Grasso** (Professor of Climate Governance, Politics and Ethics, Bicocca University); **Carlo Giupponi** (Full Professor of Environmental Economics at the Department of Economics, Ca' Foscari University of Venice), **Raffaella Cagliano** (Co-Director, MSc in Transformative Sustainability, Professor at Politecnico di Milano) and **Francesco Perrini** (Co-Director of MSc in Transformative Sustainability, Professor at Bocconi University); **Giacomo Gigantiello** (CEO AXA Italia); **Rossella Miccio** (Emergency ONG ONLUS President); **Laura La Posta** (Sole 24 Ore);

This document, the “Dolomite Manifesto”, used as an input the ideas emerged from the plenary sessions and working groups. Below, the reports from the four working groups and plenary sessions.

REPORTS FROM THE WORKING GROUPS

WORKING GROUP 1 – THE ECONOMIC / ENERGY DILEMMA: HOW CAN WE MAKE THE WORLD GREENER WITHOUT REDUCING ECONOMIC GROWTH? WHICH ARE THE MERITS AND LIMITS OF DIFFERENT TECHNOLOGIES/ ENERGIES?

Chair: Alexandra Borchardt

Discussants: Massimo Tavoni; Gilles Moëc; Claudio Spadacini; Siim Espenberg; Andrea Tilche; Mariano Morazzo; Sharmini Peries.

Rapporteurs: Roberta Benedetti (Students: Laurent Diemoz; Giovanni Triaca)

The problem setting

The starting point from the first working group was considering that the usual idea of an existing trade-off between economic growth and the protection of the environment is out of date. As the IPCC Sixth Report proves, there seems to be no longer a dilemma - in the traditional economic sense - since the cost of climate action is now lower than the benefits and the avoided damages of inaction on a global basis.

However, there is still a political economy and social dilemma coming from the unequally distributed costs and benefits between different generations, world areas and sections of the society.

Moreover, the current energy crisis triggered by Ukraine's invasion, has put a third element into focus: the issue of energy security. The different pull factors could be framed as a trilemma between access/affordability, security, and sustainability.

The problem solving

The first working group proposed three different sets of solutions, regarding **regulations, incentives, and coordination**.

With regards to **regulations**, the WG proposed to expand carbon pricing across the globe and to direct tax revenues to innovation and distributive initiatives. Another solution proposed was to enable the purchase of strategic energy companies by State governments, with the mandate of transitioning quickly to renewables and green operations while taking care of the most impacted workers. The second solution was not uncontested in the group, because states should not reward those players who have been negligent of transforming their businesses toward sustainability.

As for **incentives**, the WG suggested prioritizing and incentivizing, for the manufacturing of technological innovation, the use of materials that minimize the risk of geopolitical issues, favoring simple materials that are available everywhere or in as many countries as possible. Another solution offered was to promote and increase innovative projects addressing key issues such as long-duration storage, energy communities and then to create the incentives for their subsequent transfer amongst countries to enable growth and development through technology spill-overs (this may go from the so called "North" to the "South" of the world, but also the other way round, whereas firms from, for instance, India may have gained an edge

in some areas). Finally, the group proposed to provide tax incentives to impact funds, so that their capital gains are subject to lower taxation compared to traditional funds. It is essential that not only the production side but also the consumption side should be incentivized to encourage energy efficiency which could lead to substantial gains. Nudging toward low energy solutions could be an important part of this, but this also requires building an infrastructure which minimizes the effort needed to change behavior -for example infrastructure which make sustainable mobility possible and safe..

Concerning **coordination**, finally, the group underlined the need to coordinate, once long-term storage solutions will be available, in order to transfer excess renewable energy production from high-production potential regions, like MENA, to high-consuming regions such as Europe. This could come through transformation of the clean energy in excess into new synthetic fuels like SAF, which are key to the decarbonization of hard-to-abate sectors like aviation and shipping. In addition, international coordination should be promoted through technology and financial transfers, stepping up the existing climate funds but making it conditional on countries actions towards emission reductions. An example could be that of the Just Energy Transition Partnership with South Africa.

WORKING GROUP 2 - THE DEMOCRACY QUESTION: HOW CAN WE FIND A COMMON AGENDA BETWEEN DIFFERENT GENERATIONS (AND SOLVE THE PROBLEM OF THE EMBEDDED SHORT TERMISM OF ELECTORAL CYCLE)? HOW CAN WE AVOID THE GILETS JAUNES EFFECTS?

Chair: Joseph Hammond

Discussants: Francesco Grillo, Cliff Prior, Michele Geraci, Eli Hadzhieva, Francesco Cappelletti; Marco Grasso.

Rapporteurs: Robert Tyler (Students: Luca Salvetti; Leo Ciferri)

The problem setting

Working Group 2 started from considering that there is a disconnection between the public, policy makers and professionals when it comes to understanding the threat posed by climate change. Those who work in the scientific community that have identified this threat have failed to communicate adequately what the issue is, and what the solutions are. Academics and scientists are seen as an elite in their 'ivory towers', out of touch with the concerns of ordinary people.

In particular, their failure to properly explain the situation has caused a demographic divide in understanding, with younger people on the whole taking the situation much more seriously and older generations not placing it as highly on the risk matrix.

In the political sphere, decisions on climate change are seen as remote and extreme: citizens are sceptical of the measures proposed by European and National Parliamentarians as they are unaware of their impact and importance. Groups like the *Gilet Jaunes* and the *Dutch Farmer Protests* are a backlash to a perceived assault on their way of life.

The problem solving

One of the main solutions proposed by the WG was to bring key decisions on climate change down to a local level, to engage citizens directly and explain why drastic decisions must be made. The discussants also focused on making democracy more accessible by embracing e-democracy, creating platforms that present the programmes of different parties and bringing people closer to policy makers. The need to engage with young people was also underlined, proposing the adoption of youth quotas on the same basis as gender quotas – to ensure that all generations are given an adequate voice. Alternatively, it was suggested to introduce a system of ‘future-generations ombudsmen’ that offer long-term thinking and accountability.

Another point made was to create tailored narratives that specifically appeal to certain groups within society that need to be engaged. There must be a recognition that one size fits all narratives do not work in the age of social media, when people can pick and choose what they want to hear. Such policies must instil a sense of urgency amongst the public, as long-term messaging does not have the same impact as short term.

A need which was underlined was to provide market-based solutions for climate change, including encouraging environmentally friendly behaviours amongst consumers and producers by implementing ‘nudge’ policies and to increase public private cooperation in innovation. The issue of corporate irresponsibility should also be tackled by creating a system of accountability, allowing the public to challenge in court their governments and non-state actors when they do not meet their environmental commitments.

Overall, the approach to reforming the mechanisms of participation/ decision making should be experimental. New solutions may be experimented on smaller scales (like Estonians did with electronic voting), assessed through clear, pre-defined criteria so that the successful ones are scaled up/ adopted by others.

WORKING GROUP 3 - THE PROBLEM OF GLOBALIZATION: HOW CAN WE MAKE POLICY MAKING PROCESSES AT GLOBAL LEVEL MORE TO RESPOND TO THE CRISES WHICH ARE DEFINING THE 21 ST CENTURY?

Chair: Maja Groff

Discussants: Jaroslaw Pietras; Kapoor Sony; Rohinton P. Medhora; Chaitanya Giri; Tong Shijun; Simone Borghesi.

Rapporteurs: Matteo Smerlak (Students: Cecilia Guelfi; Mattia Massimino)

The problem setting

This Working Group first recognized that the governance of climate is a difficult issue, and that there is a significant lack of clarity in this field. Countries know they must act but they

are often stuck in predetermined structures. In the attempt to frame new ideas, visionary and bold, for the upcoming COP27 and considering the issue of a lack of unanimity between UN countries, the group wondered whether is possible to imagine a different point of reference – involving other actors, businesses, consumers, citizens.

The problem solving

One of the propositions was to use the same technique of the “Ottawa process” (about landmines) in the field of climate change, working with the global civil society to catalyze international agreements.

The need to reform the UN Charter, which has been repeatedly proposed by many countries in the past years, was underlined by this Working Group as well. The Group advanced the suggestion to create a Carbon Alliance between countries with higher CO2 emissions.

Climate change is a global issue requiring global solutions. However, different countries have different needs that have to be taken into account when finding such solutions – allowing for different levels of development and speeds, for instance.

In order to address issues that can only be conceived on a global scale, we require a global governance system. However, the global governance structures we currently have are ineffective, out-of-date, and unable to respond to crises. Particularly noticeable are institutions that are dispersed, have slow decision-making processes, and lack accountability systems that go beyond state compliance. A simplification of COPs and a reduction of the “parties” (member States) involved was considered: this may be pursued by gradually replacing per-State representation to one where countries have an incentive to adopt one on a macro-region basis (except for countries like USA, China and India that are large enough in terms of emissions of CO2); the EU may set the good example if EU countries decide to pool their seats at COP into one.

A solution would be to work within existing institutions and frameworks (WTO, BCAs) while new ones (a World Environment Organization, International Anti-Corruption Court or technology development and sharing consortium) are designed in parallel.

The WG also underlined the need for a bottom up approach formally involving cities and municipalities and suggested to introduce an individual carbon footprint tracking system through a citizen app.

WORKING GROUP 4 - CITIES AS PLACES FOR EXPERIMENTING THE FUTURE: WHY ARE DIFFERENT CITIES DIFFERENTLY PERFORMING AS FAR AS EFFICIENCY OF WASTE MANAGEMENT, HOUSING, MOBILITY?

Chair: Maria Pia Quaglia

Discussants: Barbara Kolm; Elena Eva Maria Grandi; Bill de Blasio; Giorgio Gori.

Rapporteurs: Gianluca Galletto (Students: Goldzahl Lisa; Olivia Fructus)

The problem setting

Today, more than 50% of the world population lives in urban settings. By 2050 this percentage will rise to 75%. Also, cities account for 80% of global GDP and 80% of GHG emission, which means they are critical to address climate change. However, urbanization is not unstoppable: some cities continue to grow, others (like Venice or Detroit) have shrunk. The difference is about whether the convenience to agglomerate is greater to the cost of congestion: a smart use of technologies can make the difference. The concept of smart and sustainable cities has changed over time and will continue to do so, whereas the consequences of recent trends like remote working will also be fundamental.

The problem solving

The critical component of a city is people. Hence, taking a people centric approach, the Working Group recommend three key dimensions: **safety and security** (including personal safety, health, social security, economic security); **accessibility** (cities need to be redesigned to create accessibility to all aspects of the city); **inclusion and diversity** (including housing).

The working group wondered why different cities are performing differently regarding the efficiency of waste management, housing and mobility. The answer is because several factors affect the performance of cities: wealth, the structure of their built environment, legacies, and so on. The working group members all agreed upon the urgent need to devolve more powers and responsibilities to local governments, in order to allow more effective performances for cities. The **principles of subsidiarity and devolution** should be implemented so as to ensure more flexibility and autonomy, much needed on a local level to speed up the otherwise long decision-making processes.

More accountability is also needed at the local level, to let the mayors have the freedom to change and introduce new policies. There is no need for competition within cities and for the race for competitive advantage, but they should rather learn from each other, learn together by sharing best practices and division of labor.

The group suggested to give cities a formal status, with real power, both at national, EU and global (including COP) levels: The example of “*Building Europe with Local Councillors*” project, to build a European network of locally elected officials that communicate directly to the EU.

The Working Group underlined that there is no way to solve the problem without leveraging the private sector. Thus, it is critical to have a market-based approach for funding new solutions. However, the role of the government is necessary to provide moral suasion, catalytic investments and policy, even – if necessary - with more “aggressive” policies encouraging or even forcing the private sector to act.

REPORTS FROM THE PLENARY SESSIONS

PLENARY SESSION 1 - IMPACT FINANCE: GIVE FINANCIAL MUSCLE TO THE TRANSFORMATION AND MEASURE LESS AND BETTER TO DESIGN THE RIGHT INCENTIVES.

Introduction: **Giovanna Melandri** (President of the MAXXI Foundation; President of Human Foundation/Social Impact Agenda).

Discussants: **Cliff Prior** (CEO of the Global Steering Group for Impact Investing); **Roberta Benedetti** (Generation Investment Management); **Céline Soubranne** (Head of ESG Development, AXA IM); **Matteo Smerlak** (Co-Founder and President of The Global Peace Dividend); **Erik Berglof** (Chief Economist Asian Infrastructure Development Bank); **Barbara Kolm** (Vice President of the Austrian Central Bank, Director of the Austrian Economics Center).

Chair: **Jan Piotrowski** (Business Editor at The Economist)

Rapporteurs: **Luca Salvetti**, **Leo Ciferri**, **Cecilia Guelfi** and **Lisa Goldzahl**.

Mobilization of capital has been huge during recent years (1.164 trillion USD in 2021), but still not enough. If we want to go from *if to how* invest, we should mobilize institutional capital, strengthen the participation of the local community's voice, invest in SDGs through a wide array of impact financial instruments.

The financial sector is, indeed, the most powerful instrument we have. Impact finance is different from ESG (Environmental, Social and Governance) investing, since it aims at optimizing 3 aspects: risks; revenue; impact.

Given the riskiness of the sector, a help from governments is needed, otherwise no investor will invest. However, the right balance between government intervention and a completely free market should be found.

For instance, exclusion or divesting of dirty investments from a portfolio can be useful as a signal to the market, which can be then let free to function.

Moreover, capital gains from impact finance should be taxed differently from usual gains and it would be useful to invest in the best players of every sector that do well on sustainability as well as to focus on transformative investments, changing the way actors interact with the system.

This plenary session also underlined an issue of coordination between countries, with regards to what actions to take to promote impact finance. Some of the panelists noted that the public sector has money but spends it in other ways: in 2020 military expenses increased a lot, and this is also happening now. However, we have not increased security despite increasing military spending, nor economic growth has been generated, nor job employment rising.

The issue is dominated by a "prisoner dilemma": any country won't reduce its military spending if the other countries are not willing to do the same.

Thus, a solution could be found in motivating countries to begin negotiations that will lead to a public funding contribution to climate change rather than military spending e.g., through a reduction of military spending of 2% per year.

The prisoner dilemma can only be solved through negotiations (which can be particularly difficult in the current war scenario) because if every country commits in reducing its military spending, then the overall “power scenario” won’t change.

PLENARY SESSION 2 - THE END OF THE FOSSIL FUELED CARS AS CORNERSTONE OF INDUSTRIAL CIVILIZATION (WITH A FOCUS ON ELECTRICITY, HYDROGEN, SHARING AND SELF DRIVING)

Introduction: **Jaroslav Pietras** (Visiting Research Scholar, Wilfried Martens Centre).

Discussants: **Carlo Costa** (General Technical Director of Autostrada del Brennero S.p.A.); **Sheri Wilbanks** (AXA Head of Group Risk Management P&C Climate and Sustainability); **Bibop Gresta** (Founder and CEO Hyperloop Italia); **Karen Burns** (CEO of Fyma); **Andrea Tilche** (Former Head of the Climate Change and Earth Observation Unit).

Chair: **Joseph Hammond** ((Head of Global News at Zenger News)

Rapporteurs: Students **Mattia Massimino, Vesela Deneva**

The plenary session opened underlying the linkage between vehicles and infrastructures. For instance, decarbonization involves cars but affects infrastructures as a consequence. Nowadays, technologies open up to amazing opportunities like drone taxis, self-driving cars and trucks. Making a change in mobility is crucial and, in order to do that, we should start asking ourselves the reasons why people want to travel. People travel to work, to school, but travel as a job as well, which is the example of delivery couriers. Another important point regarded the adoption of a comprehensive view: the key issue it’s not only fossil fueled cars versus electric cars, there are many others fuel alternatives instead.

A relevant issue is that transportation is the only non-regulated sector and, in that sector, infrastructure and vehicles are not well-connected. The population is on the threshold of an extraordinary transformation that will take place in the next 10 years and there is an urgent need to establish connectivity among the different means of transportation. In the future, cars are expected to interact with one another. Digitalization and in particular the one in mobility will change this paradigm.

An important question which came up during the plenary is whether (and how) it is possible to decarbonize all means of transport. The overall goal is to arrive at an integrated sustainable system. The idea of having electric cars is becoming very popular but still the material those cars are made from is not taken into account. It is important to design such an infrastructure which will serve us in the future when our lifestyles are changing. Commuting will have different forms and frequencies. The future will be for sustainable energy sources everywhere in the world no matter the supply and demand.

PLENARY SESSION 3 - REINVENTING A ZERO EMISSION PRIMARY SECTOR / AGRIFOOD: SOIL AS A CO₂ RETAINER

Introduction: **Massimo Tagliavini** (Professor at the Free University of Bozen- Bolzano, Italian Association of Agricultural Scientific Societies)

Discussants: **Hans-Reiner Schultz** (President of Geisenheim University); **Giulia Bartezzaghi** (Director of the Food Sustainability Lab at the School of Management of Politecnico di Milano); **Céline Soubranne** (AXA Investment Managers Head of ESG Development); **Siim Espenberg** (Director at the Centre for Applied Social Sciences (CASS), University of Tartu); **Adrian Guzman Gonzalez** (Satellite Constellation Manager of the International Space Agency); **Francesco Tubiello** (Team Leader, Agri-Environmental Statistics, Statistics Division at FAO)

Chair: **Camilla Cupelli** (La Presse)

Rapporteurs: Students **Giovanni Triaca**, **Olivia Fructus**

This plenary session started by recognizing that climate change is a multidimensional phenomenon, and put the **agri-food sector** at the center of its discussion. In the agri-food sector, several interconnected problems are currently linked to climate change – e.g. food waste, biodiversity lost, food security.

The agricultural/food sector is not only affected by climate change but, at its most basics, we could envisage its contribution to **climate change mitigation** itself. This can happen only if policies aimed at reducing the anthropogenic GHG emissions and increasing the C storage in soils and plant biomass are implemented. Unlike transport and manufacturing sectors, crop production systems, in fact, both emit and sequester atmospheric CO₂ thanks to biological CO₂ fluxes due to photosynthesis and respiration. If the balance between them is positive, such amounts of sequestered C (in soils and plants) can compensate at least in part the GHG emissions to crop management.

To sequester C into the soil, large amount of organic C from residues, compost or biochar should be incorporated into it. Unfortunately, 1) soils have a finite capacity to store C (higher or lower depending in the texture and other soil characteristics) and 2) the mineralization of the organic C from residues releases large amounts of CO₂ into the atmosphere, reducing the mitigation potential of such a means.

The soil temperature increase we are now experiencing due to climate change (in Germany the summer soil temperature increased by 4.5 degrees in 100 years) will foster the soil organic matter decomposition, posing a threat to our ability to increase/maintain actual levels of soil organic carbon.

To effectively **reduce the GHG emission within the farm gate and during the post-production**, the management techniques that contribute the most to emissions have to be first identified. Technological innovation (precision, digital, smart, Agr. 4.0, 5.0) will enhance the resource use efficiency and eventually their input. Different solutions are already available on the market, which leverage a wide array of technologies (sensors, Artificial Intelligence, Computer Vision, ...) to enable farmers to predict and monitor the performance of their agricultural activities, comparing different scenarios of potential economic and environmental impact (including GHG emissions) associated with different intervention

choices in the field, optimizing the use of resources. They should also include advancements in the availability of electrically-driven agricultural machines powered by renewable sources. Those technological solutions should be more widely adopted and integrated in existing processes and production systems. Solutions are also spreading aimed to calculate and track carbon credits recognized to farmers who implement sustainable and regenerative agriculture practices, which can be marketed through specialized platforms, thus guaranteeing alternative forms of income for the farmers.

Genetic innovations, including the new breeding technologies (NBT) are expected to significantly contribute to a **C-neutral agricultural production** by releasing new genotypes, naturally able to resist to pathogens/ pests and to cope with a lower availability of external input. Genetic innovations are extremely important to meet also other goals of the sustainability, including optimizing the water use efficiency, reducing water pollution, reducing the amounts plant protection products and their residues in the produces.

Other solutions which intervene to prevent and reduce food loss and waste generated along the supply chain are equally important. For example, solutions which shorten supply chains (often through the use of online platforms to connect producers and consumers), align supply and demand (for example through the improvement of demand forecasts thanks to the collection and the elaboration of data based on Artificial Intelligence technologies) and improve the management of stocks in the warehouse (for example through software for the implementation of dynamic pricing strategies based on the residual life of the products, leveraging IoT and AI technologies). Other innovative solutions operate for **monitoring the temperature and other critical parameters along the supply chain**, allowing to monitor the state of conservation of the product (as in the case of "smart" labels applied to pallets or product packages or IoT sensors that measure the temperature in cold rooms and on refrigerated trucks, signaling episodes of prolonged exposure to temperatures that exceed a predefined threshold). There are other innovative solutions adopted for extending the shelf-life of products (including storage technologies in a controlled atmosphere and active packaging solutions) and alternative refrigeration technologies that also reduce electricity consumption (such as technologies using frozen saline solution as a coolant). New supply chain and cross-sectoral collaborations for the reuse of edible surpluses and agri-food scraps for different uses (from human consumption to energy recovery) in a circular perspective represent a key area of innovation. Particularly, the reuse and redistribution of edible surplus food for vulnerable people through **public-private partnerships** should be prioritized has a synergistic response to the problem of food waste (and its GHG emissions) and food insecurity, particularly in urban areas where food distribution, consumption and waste as well as food poverty are concentrated and paradoxically coexist.

Another key point refers to **supply chain agreements** to recognize a fair price for suppliers and producers as well as to share risks and benefits (deriving from the recognition that farmers are exposed to growing economic and environmental risks, due to climate change and greater price volatility). One example is the inclusion of parametric insurance mechanisms within supply chain contracts, which protect the farmer in the event of unforeseen events that prevent the achievement of certain production requirements. Indeed, **contract and insurances to protect farmers against extreme climatic events** due to

climate and to promote the implementation of C-neutral cropping systems are extremely important and considered a key of intervention innovation. Another key area of intervention is the integration of sustainability criteria in tenders (public and private) for the procurement of raw materials and products, which reward the supply of food grown / produced with techniques / processes with a lower environmental impact, and which enhance local products. This is an area of particular attention also for local public administrations, which increasingly promote policies for the supply of raw materials, preparation, and distribution of meals in public canteens (especially school canteens) that favor vegetable, seasonal and locally produced products.

Our **dietary choices** as consumers have a pivotal impact on the amount of GHG emissions: the C-footprint per unit of energy or protein of animal products is extremely higher than that corresponding to vegetable produces, including pulses.

If such strategies have good chances be implemented in the developed countries, one of the biggest challenges is their transfer to small farming system in Asia, South America and Africa.

PLENARY SESSION 4 - CLIMATE JOURNALISM AS A LEVER TO MAKE THE WORLD TO BE AS ONE

Introduction: **Alexandra Borchardt** (Head of Journalism Innovators Program Hamburg Media School)

Discussants: **James Fahn** (Executive Director, Earth Journalism Network); **Malaika Vaz** (National Geographic Explorer, TV presenter and filmmaker); **Hans Cosson-Eide** (Head of the Climate Group at NRK).

Chair: **Sharmini Peries** (Editor of Institute for New Economic Thinking).

Rapporteur: Student Laurent Diemoz

This plenary session set out to explore how journalists can use their platforms to steer the coverage of climate change toward a conversation that is fruitful, inclusive, and most importantly, effective in getting different audiences on board this journey, which requires collective action to be faced, contained, and possibly solved.

Climate journalism exists in a difficult context, that of a news-driven industry which quickly accuses of “activism” any journal deciding to focus on climate change as a permanent, chronic trend instead of portraying it only as the cause of extreme atmospheric events.

The preliminary findings of EBU (European Broadcasting Union) News Report offer some insightful information:

1. Facts alone are not enough and providing more of them does not necessarily make them more convincing
2. The messenger is often more important than the message, and it needs to be credible (this could be observed especially with the “Greta Thunberg effect”)
3. Climate impact must be made part of all beats

4. Climate literacy among journalists is essential to achieve the goal of high-quality, high-impact climate journalism
5. There is no one-size-fits-all model for newsroom organization and for targeting different audiences

The focus should be moved from facts to stories about the “here and now”. The more local a story is, the more relatable it is to people and, therefore, effective. Even more so, stories should be about individuals that are impacted by or are trying to have an impact on climate change, as readers love hearing about other people. This spans from the story of the single farmer who deals with extreme weather events threatening his harvest to the huge masses of climate migrants who are forced to leave their homes in South-East Asia. Adding on this, vulnerable communities are always the most impacted and we need to protect them from distorted narratives such as the one blaming the Global South for plastic pollution.

Moreover, climate change should not be treated alone. It should rather be anchored to recurrent stories and the industry should try to tie it to the pandemic, the war, the elections in a given country. Another key step is to stop framing climate change only as a tragedy and a calamity: instead, journalists should emphasize the benefits that action against climate change can lead to (in terms of air quality, preserved biodiversity, etc.).

Furthermore, it should be noted that climate change is a great story to cover, representing the biggest reconstruction since World War II. Thus, it would be a game-changer if journalists were able to make readers feel empowered to play an active role in this reconstruction. Tailoring the content for different audiences is also fundamental: scientific communication might be effective for a certain type of audience, especially for well-educated, wealthy individuals, but not so much for other types. That demands more direct visual methodologies aiming to represent the actions against climate change as engaging and fun. Another crucial element for the media sector is to target imperative economic action and approach the talk with the industrial sector in a positive way, doing its best to treat businesses as one of its audiences and to tell the industry that sustainability will be good for business down the road.

Lastly, the communication industry needs to send journalists out on the field; in order to do so everyone in the newsroom should have at least basic competencies about climate change, but in this case, a team of highly specialized professionals on the topic would make all the difference. To conclude, while bearing in mind that if we don't transform the media sector, none of the other sectors will transform, media need to work with humility, aware that they cannot substantially change things alone but need to partner up with scientists, NGOs and civil society that can keep the attention high on topics and issues which journalists can discover and expose but can't cover extensively for a prolonged period of time.

PLENARY SESSION 5 – GEOENGINEERING: THE PROMETEUS’ DREAM OR A SCIENTIFIC NIGHTMARE? THE POSSIBILITIES AND THE ETHICAL IMPLICATIONS.

Chaitanya Giri (Research and Information System for Developing Countries Research and Information System for Developing Countries, New Delhi, India, and Earth-Life Science Institute, Tokyo Institute of Technology, Japan); **Adrian Guzman Gonzalez** (Satellite Constellation Manager of the International Space Agency, Mexico City); **Marco Grasso** (Professor of Climate Governance, Politics and Ethics, Bicocca University)

The first question tackled by this plenary session was is geoengineering and why is it important. Geoengineering includes a host of technologies and practices that seek to reduce the amount of heat trapped in Earth’s atmosphere. Some of these technologies could have significant side effects that are still not well understood. Geoengineering refers to a set of emerging technologies that could manipulate the environment and partially offset some of the impacts of climate change. Solar geoengineering, in particular, could not replace efforts to reduce emissions (*mitigation*) or coping with a changing climate (*adaptation*); yet, it could supplement these efforts.

Geoengineering is conventionally split into two broad categories:

1. The first is **carbon geoengineering**, often also called carbon dioxide removal (CDR).
2. The other is **solar geoengineering**, often also called solar radiation management (SRM), albedo modification, or sunlight reflection. There are large differences.

On the ethical side, this plenary session underlined the need to find a way to measure the political and ecological will from an ethical point of view - besides the CO₂ emissions and mitigation - since even climate intervention needs a correlation between what people say and what people do.

Under the umbrella of CO₂ Removal Technologies, the plenary discussed benefits and considerations of 8 sub-technologies: BECS, Biochar, Carbon Capture and Storage, CO₂ Scrubbers, Enhanced Weathering (Land & Ocean), Land Management and Ocean Fertilization. Moreover, with regards to Solar Management Technologies 5 technologies were discussed: Cloud Whitening, Desert Reflectors, Painting Towns White, Space Reflectors, and Stratospheric Aerosol Management.

The plenary also pointed out the relevance of Space Agencies efforts, such as the Committee on Earth Observation Satellites - which just provided a significant input on the 2022 GCOS Essential Climate Variables (ECVs) for WMO and UN Environment for the UNFCCC Global Stake.

Finally, the plenary discussed whether geoengineering should be considered as a possible climate change insurance policy. Mitigation then, should be a counter-balance between the climatic and environmental consequences of the rising of concentration of GHG.

PLENARY SESSION 6 – THE HOLY GRAIL OF PLURIDISCIPLINARITY: THE NEW RESEARCH AND TEACHING BET

Sharmini Peries (Editor of Institute for New Economic Thinking); **Carlo Giupponi** (Full Professor of Environmental Economics at the Department of Economics, Ca' Foscari University of Venice); **Raffaella Cagliano** (Co-Director, MSc in Transformative Sustainability, Professor at Politecnico di Milano); **Francesco Perrini** (Co-Director of MSc in Transformative Sustainability, Professor at Bocconi University).

Climate change is a paramount example of what we define as complexity: a complexity which is reaching new heights in a century where Internet is connecting not only devices but also domains, which we used to analyze separately.

One of the problems raised by today's hyper-specialization is that it makes it difficult to understand and manage inter-disciplinary issues as climate change. The question of climate change spans across a very wide spectrum of intellectual approaches: weather, politics and international relations, economics, computer science, communication, logistics. Thus, it would be necessary not only to put together people with different academic approaches, but also pragmatic intellectuals who are capable of understanding each other across different languages and cultural or academic backgrounds.

For instance, this is what some European universities (including the ones who took part in the Dolomite Conference as scientific partners) are now attempting to do: bringing back the pursuit of knowledge and wisdom to the hands of polymaths (as Leonardo da Vinci or Galileo de Galilei) rather than narrow specialists.

Vision will follow up the Conference with further initiatives with its fellow scientific, corporate and locality partners. The Dolomite Manifesto will be the starting point of the next Dolomite Conference. It will take place on the 12th, 13th and 14th October 2023, three weeks before COP 28, to be held in the United Arab Emirates.

Corporate partners



Autostrada del Brennero SpA
Brennerautobahn AG

Locality partners

AUTONOME
PROVINZ
BOZEN
SÜDTIROL



PROVINCIA
AUTONOMA
DI BOLZANO
ALTO ADIGE



PROVINCIA AUTONOMA
DI TRENTO

Institutional endorsement



Parlamento europeo
Ufficio a Milano

Media partner

ZENGER