



TURNING POINT

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PROCEEDINGS AND CONTRIBUTIONS
AFTER THE CONFERENCE

**“PARIS CLIMATE 2015:
THREE INNOVATIVE
PROPOSALS FROM ITALY”**

————— CHAMBER OF DEPUTIES —————

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I. The global climate agenda: the European way to Paris COP21

Davide Triacca

Scientific Coordinator Centre for a Sustainable Future

Within the complexity of climate negotiations, which is intrinsically linked to the requirement that the governments of the world respond to the threat of climate change in unison, there are some certainties worth reemphasising. The first – and most well-known – of these is the commitment to capping the maximum increase of the world’s average temperature at two degrees centigrade (in comparison with pre-industrial levels, or at just 1.4 degrees centigrade in comparison with current temperatures) in order to prevent *dangerous human interferences with the climate system of the planet*. An increase in excess of these parameters would jeopardise fundamental elements that the developed West takes “for granted”, such as the production of food or the normal shape of our coastlines. Over the last 150 years, human activities have produced considerably more greenhouse-gas emissions (with carbon dioxide accounting for the lion’s share of these) than were generated in the rest of our planet’s history. This is another certainty. As a consequence, the current atmospheric concentrations of these gases are 30% higher than they have been at any time over the last 800,000 years. Between 1992 (the year of the Rio Summit) and now, global emissions have increased by over 60%, a worrying figure when we consider that the summit’s objective was to organise an effective global response to the greenhouse effect.

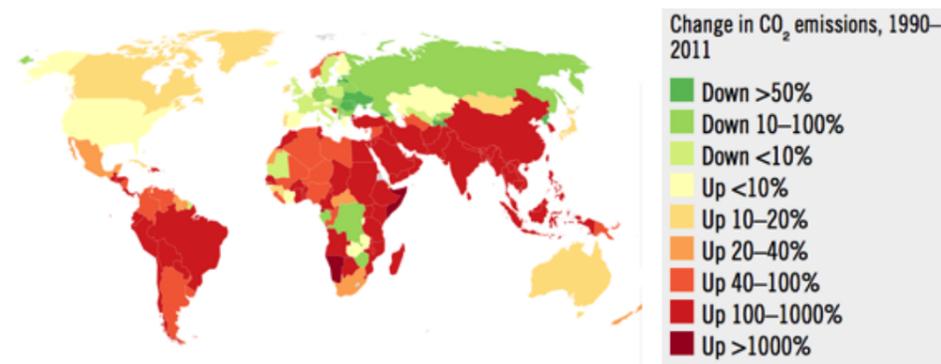
In order to keep global warming under the critical threshold of two degrees centigrade, the IPCC (the foremost international group of experts on climate change, founded in 1988 and awarded the Nobel Peace Prize in 2007) calculates that the atmosphere can “bear” a maximum of 790 Gigatonnes of CO₂, 515 of which (65%) have already been emitted. Therefore, man can emit a further 275 gigatonnes before the shared objective of 2°C is rendered irrelevant. And at the current emissions rate of nearly 10 Gigatonnes per year, this leaves us with a truly limited timescale for action.

Yet although taking action is a necessity and our duty, the manner in which we do so is by no means a given.

Copenhagen 2009 showed how international mobilisation and media attention are necessary but insufficient elements to ensuring successful negotiations.

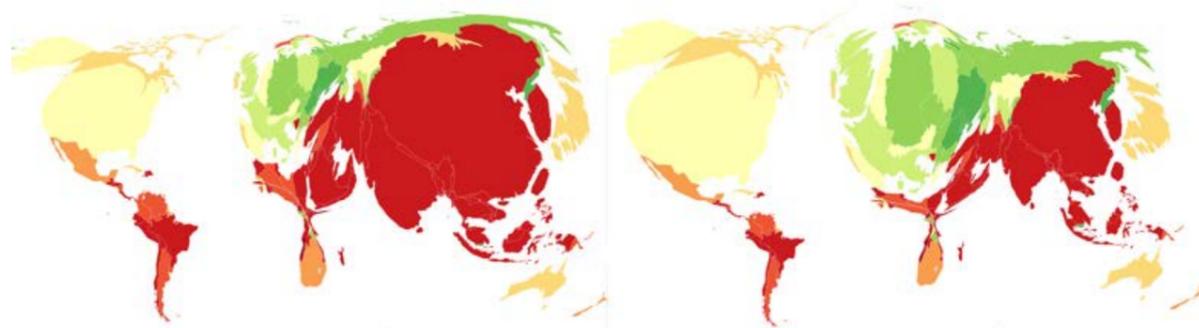
From this perspective, Paris has an added element of both hope and concrete risk: the decision to abandon the logic of forced, artificial parity between all 192 signatories to the Rio Convention.

OECD countries, the United States and the European Union, small islands in the Pacific, China, India, Russia, Sub-Saharan African countries and developing nations in Latin America have historically contributed to the greenhouse effect to profoundly differing extents. Also different is the impact climate change is having on these countries; it is something of a paradox that the countries that suffer most from the effects of climate change are the same countries that have contributed to it the least. They are also the most vulnerable countries.



The above info-graphic depicts the world and uses darkening tones of red to indicate the countries whose CO₂ emissions have increased between 1990 and 2011, while tones of green are used to denote countries whose emissions have decreased. Yet this info-graphic alone risks giving a distorted view of the responsibility each individual country has for climate change. The two info-graphics that follow alter the borders of countries on the basis of their current contribution (on the left) and cumulative contribution between 1850 and 2011 (on the right) to global CO₂ emissions: the borders expand when the country's contribution to carbon dioxide emissions is disproportionate and contract when the contribution is marginal.

By comparing the two info-graphics, it becomes evident that China and India, for example, now represent the first -and third- largest contributors of greenhouse-gas emissions; yet they have an historical responsibility which is significantly lower than that of the United States and Europe and comparable to that of Russia¹. Moreover, the marginality of Africa and Latin America in terms of historic greenhouse-gas emissions is laid bare.



These considerations are the basis for the difference in approach to the negotiations after the failure of Copenhagen and the subsequent recent introduction of INDCs (Intended Nationally Determined Contributions), which publically record the commitments individual countries intend to sign up to in Paris to fight climate change.

The INDCs presented up until now account for, according to the calculation method used and source, 59.5% (WRI²), 70% (Christina Figueres, Executive Secretary UNFCCC³) and the least realistic estimate of 85% (internal sources at the British government⁴) of global greenhouse-gas emissions.

As is evident from these estimations, without common structures and elements (the reference year used to quantify the proposed emissions reductions varies, if it is specified at all; the sectors of the economy involved vary; the measurement methods vary; data is almost never realistically verifiable) INDCs cannot easily be compared and are difficult to measure against the general 2°C objective. In view of this, the technical bodies of the United Nations will meet on 1 November for the arduous task of homogenising the commitments of the individual countries ahead of the now-imminent summit in December.

Moreover, the INDCs include commitments that are often too generic and non-legally-binding, unless this is addressed in what would be an important achievement by the Paris COP. These commitments will then have to be applied, monitored and verified using measures still to be defined and made public. On this issue it is worth remembering that merely defining the functioning mechanisms necessary for the implementation of the Kyoto Protocol took four years (between 1997 and 2001), followed by another four years to bring it into force (in 2005) and another three years to launch the first commitment period (2008–2012). With the current rate of emissions, we do not have the same amount of time.

Not even the most optimistic analyses of the current INDCs consider them sufficient to hitting the global 2°C target. Christina Figueres herself stated that even if the current INDCs are fully translated into concrete actions (something which is by no means for certain, as we have already established), they would only limit global warming to an average increase of 3°C. This scenario, largely confirmed by the estimates of a 2.5°C increase published by the British government, is an insufficient figure and would constitute a forerunner to the “*dangerous human interferences with the climate system*” that must be avoided at all costs.

On the other hand, if the INDCs really are translated into concrete action, the process would at least demonstrate the ability for the 63 countries to work together to avoid the catastrophic temperature increase of 5°C by 2100, which a *business as usual* strategy would inevitably lead to.

1 WRI data produced by *The Guardian*

2 <http://cait.wri.org/indc/>

3 <http://uk.reuters.com/article/2015/09/15/us-climatechange-summit-pledges-idUKKCN0RF23C20150915>

4 www.theguardian.com/environment/2015/sep/16/paris-climate-summit-pledges-wont-avoid-dangerous-warming-say-uk-and-un

The Paris summit falls in the year that the USA's National Oceanic and Atmospheric Administration (NOAA) identified, with 97%⁵ probability, as the hottest year on record, eclipsing 2014. But the Paris summit also falls in the year that has probably seen the greatest level of political debate between those in favour and those against a fight against climate change. Pope Francis' speech to the US Congress; the important agreement between China and the United States, which should be confirmed during Xi Jinping's upcoming visit to New York and Washington; the strong disaccord between the Obama administration and the Republican parliamentary majority; the sceptical line of the Australian government (though reversed with the recent change of leadership); the caution of big countries such as India and Brazil; the reconsiderations of the Japanese and Canadians: these tensions are all reflected in the European Union's haste to declare that Paris will be only one step in the journey and not the realisation of an objective.

At least one other element –finance– played an pivotal role in the difficult nature of the pre-negotiations held in Bonn up until 4 September and has contributed to the definition of an even more gruelling forecast of the outcomes of Paris COP21.

This topic was widely discussed in Bonn, with opinions often split between blocks of countries. On the one hand, the developed countries underline the need to expand the number of donor countries (of which they are certainly part) and emphasise the role of the private sector, as if this could lead to a reduction of their economic duties. On the other hand, the developing countries reiterate the need for quantitative commitments that honour the promise of mobilising 100 billion dollars for the climate every year by 2020. In truth, only a little over 10 billion dollars has been mobilised in total thus far, but this is not even an official figure and on 9 October in Lima a joint meeting between the World Bank and the International Monetary Fund will be held to try to clear up matters.

If the overall financial endowment is uncertain, the tools to invest it in the necessary areas are the subject of even greater debate. Probably, the operative tools already in place for the management of financial resources in the fight against climate change (Global Environment Facility and Green Climate Fund) will remain in place, but there have been hypotheses as to the creation of new, more effective tools. Yet the creation of new financial tools would nonetheless require a very complex formal process. Also uncertain is the future of the Adaptation Fund, a legacy of Kyoto: some nations that never ratified the Kyoto Protocol are now concerned in a new agreement and, even in this case, there are complex legal options under consideration.

The pre-negotiations, which will resume in Bonn on 19 October, must tackle another important aspect linked to finance: the amount of money (for the most part virtual, at this moment in time) to divide between mitigation and adaptation. This aspect too is now subject to easily imaginable discords between blocks of countries.

One source of hope is provided by cities, which on 22 September will meet in Los Angeles to announce their contribution to the reduction of greenhouse-gas emissions; among the cities involved are Seattle, which is aiming for carbon neutrality by 2050, and ten cities in China, including Beijing, which will commit to ensuring emissions reach a definitive peak in 2020⁶.

5 <http://www.ncdc.noaa.gov/sotc/summary-info/global/201508>

There has also been mobilisation from many global private companies who, aware of the importance and irreversibility of the green growth process that the fight against climate change has triggered, are putting their names to appeals and petitions. The most recent move is the support of companies of the calibre of Ebay, Nestlè, Levi-Strauss, Unilever, L'Oreal, SunEdison and others for Obama's Clean Power Act and for the prospect of an effective, binding global agreement.

On the other hand, the European Union, which is seeing the gradual marginalisation of its role as the leader of the global climate agenda (European greenhouse-gas emissions have reduced from 19% of the global total in 1990 to 11% in 2013, with this predicted to fall again to 4-5% in 2030), has not yet been able to harness this positive momentum to bring about significant change in its energy and economic system. Indeed, direct or indirect support for fossil fuels costs European citizens and industries (who pay two and three times more than their US counterparts for electricity and gas respectively), hundreds of Euros every year⁷. At the same time, the objective announced by President Juncker to link the European nations via common energy infrastructure and harmonised systems –the Energy Union– capable of generating know-how and competitiveness, private investment, emissions reductions, a significant decrease in the price of energy and an increase in energy security and independence, has so far seen the extremely modest investment of just €6bn and an objective established of 10% transnational electrical interconnection by 2020 (not a huge way off the current interconnection level).

If, in topics of strategic importance to energy planning, Europe is a victim of the positions of countries like Poland, whose energy and economic system is based on carbon (to the point that they are pushing for Europe's unitary position at the Paris negotiations to acknowledge emissions reductions obtained outside the confines of the Union, a procedure that has in any case demonstrated several flaws in recent years, rather than focus on achieving these domestically via technological and technical innovation), the question of what courage and what harmony of intentions the Union will be able to draw on to tackle growing climactic iniquity and the next wave of climactic migrants that the worsening of the greenhouse effect will inevitably provoke springs to mind.

Paris is thus a crossroads for the world. And it is a crossroads also for the authority and credibility of a Europe that, under the stewardship of the Hollande government, will find itself having to face up to either the success, the umpteenth deferment or the failure of COP21.

6 http://www.nytimes.com/2015/09/16/us/us-and-chinese-climate-change-negotiators-to-meet-in-los-angeles.html?_r=0

7 <http://www.imf.org/external/pubs/ft/survey/so/2015/new070215a.htm> and <http://www.oecd.org/site/tadffss/>



1. Contradictions, threats and hopes surrounding the Paris Conference. Our innovative proposals

Francesco Rutelli

President Centre for a Sustainable Future

The Paris Conference will certainly produce an agreement. But will it be an effective agreement? Will it be able to bring about the change that everybody is – apparently – demanding?

The risk of a failure of COP21, albeit not in the spectacular fashion of the 2009 Copenhagen Summit, remains in the shadows. I think we need to look the risks in the eye, so that we can unite all energies in the political, diplomatic and scientific arena and contribute to a positive result.

Paradoxically, the “universalising” implications of the discussions on climate change represent the correct way of tackling this gigantic challenge, but at the same time encapsulate its huge difficulties.

Both conceptually and practically, in the pursuit of a unanimous, binding agreement, it is impossible to bring 200 nations onto the same page, when they are not, have never been and never will be on this hypothetical same page: OECD countries, the United States and European Union, tiny islands in the Pacific, China, India, Russia, countries from Sub-Saharan Africa, developing countries in Latin America. The adoption of a more flexible approach, with the setting of emission-reduction targets for each nation (INDCs), is undoubtedly commendable (with a view to greater pragmatism, with the establishment of concrete objectives for each country). Yet it is also risky, because it introduces a potential frenzy of parameters, objectives and prospective (or retrospective!) time-scales, all of which could trigger infinite controversy.

The fact that global emissions have increased by nearly two thirds since the Rio Conference in 1992 highlights a serious risk: that the quagmire in which international negotiations are debated becomes an initiatory phenomenon, far removed from international public opinion. Societies worried about socioeconomic issues grasp some of the consequences of global warming (including migration caused by environmental crises), comment on the statistics (“the hottest year ever”) and are struck by the severity of extreme phenomena. But they are much less attentive to climate summits than they were 20 years ago.

This leads us to a second paradox: the growing scientific certainty of the anthropogenic causes of climate change is met with the growing distancing of international public opinion.

Of course, working towards an all-encompassing agreement with unifying objectives, regardless of it thus far demonstrating it cannot be the driver towards a low-carbon world, remains a necessary target. This commitment must be undertaken by the entire international community upon a solid base of shared scientific knowledge. But intermediate, pragmatic, ambitious, concrete, measurable and understandable objectives are just as necessary if we want to ensure that it is not just the elite of the climate negotiations and the impressive-sounding yet reluctant government delegates that are on board, but indeed all inhabitants of our planet. It is they that pass the baton on to future generations, those who risk disaster if the objectives for a radical reduction of climate-altering emissions fail.

This is the premise of the Rome Conference in the Chamber of Deputies, promoted by the Centre for a Sustainable Future. For over 25 years, our Foundation has been working on the issues and challenges posed by the global environment. Thanks to a group of prominent Italian academics – Carlo Carraro, Alessandro Lanza, Antonio Navarra, Francesca Romanin Jacur, Riccardo Valentini – we present the Italian government, the Parliament and representatives of the FAO, the French government and the Holy See with three proposals we have decided to define as innovative – and with good reason, I hope.

The best illustration of the renewed international effort is symbolised by the agreement between the USA and China of November 2014. Of course, the much more demanding, resolute decisions not taken by the Obama administration in the past highlight the fragility of the situation, caused by marked political polarisation: whether the next President and Congress are Democrat or Republican will prove decisive in future decisions on the climate.

There is a critical situation, in terms of emissions and thus on a local and global scale, in China. In 1990, the country accounted for 11% of global emissions. Now, that figure is near to 25%. Nonetheless, it is important for us to consider the positive implications originating from this environmental crisis: I have been to China three times in the last year and noticed widespread attention on the grave state of air, soil and water pollution. On the political level – and in terms of the planning of investment in new programmes and technology – there is pressure to improve quickly. Up until a few years ago, the majority of the Chinese population saw pollution as a lesser evil, the inevitable consequence of a rapid journey away from poverty. Yet nowadays this equilibrium is changing fast. In 2014, global output growth was not accompanied by increased emissions for the first time, yet this was also due to a slight decrease in China's consumption of carbon and energy intensity. Are these circumstantial or structural factors? In any case, they create the feeling that there is potential for a change, if the commitments announced by President Xi Jinping are maintained.

The European Union has taken advanced decisions for emissions reductions, energy efficiency and renewable energy, with targets for 2030 and 2050. It has embarked upon a journey of extreme importance, towards the birth of a fully fledged Energy Union, but these first steps are tentative. Paris will be the key moment in

understanding if we are going to see European leadership, partly thanks to the determination of the French government, or if there will be another failure, as we saw in Copenhagen. The figures do much to express the results achieved by Europe, but they also underline its diminished relevance: 19% of global emissions in 1990, less than 10% today, around 6% predicted by 2030. The EU is more decarbonised, more de-industrialised. And its public opinion is focused on other priorities, neither greatly passionate about nor mobilised in an engaging, concrete way by issues pertaining to the global environment.

There are a number of very worrying issues at hand: the limited number of *Intended Nationally Determined Contributions* announced in the run-up to Paris according to the indications given at the Lima summit, the reticence of large countries such as India, the backwards steps of prominent developed nations, the wishes of other countries to flick back through the pages of history to the times of the Industrial Revolution (“The developed countries grew thanks to the pollution of the Earth, now it is our turn to be able to grow, and thus to pollute” – forgive me the bluntness, but this is akin to demanding the selective, legal restoration of slavery, given the economic advantages of slavery in terms of managing the workforce). The scientific consensus on the evidence of the Greenhouse Effect suggests that we should not proclaim a presumed right to a Climactic Purgatory! And this should discourage a mockery of incoherent directions, with radically different emission-reduction benchmarks: 1990, 2005, 2013, a generic *business as usual* outlook, or no date at all.

Moreover, leaving a five-year period between the Paris Agreement and its entry into force, in a context of varying objectives, different timescales and the possibility to halt everything in the event of political or economic emergencies, will be prohibitive to the realisation of the objective to keep the average increase of the global temperature over the current century under 2°C.

If there are no credible and transparent monitoring systems or verification mechanisms, there is a real risk of *à la carte* solutions, with each country choosing between an aided deferment and the least demanding measures for their situation (emissions reductions, energy intensity reductions or simply stopping the growth of these; action only in some sectors and so on).

In his celebrated *Nature, a Fragment* (1792 or 1793), Goethe wrote: “*Nature! (...)* *We work on her constantly, and yet have no power over her.*”

Two centuries later, our reality is radically different, defined by Paul Crutzen as the Anthropocene, i.e. the era in which man has shown itself to be able to “condition the overall balance of the planet”.

Science and the application of technology have brought us into this era of human longevity and extraordinary wellbeing. We cannot then shrug our shoulders at science when it alerts us to the unprecedented, concrete threat of climate change.

I believe that there are two main challenges facing us today:

a) Constructing permanent links between the need for decarbonisation and the advantages this can have for our societies. The mere indication of this need will never be sufficient, given the economic, financial and social differences and conflicts at play around the world and given the divergence of time between the threat posed by the climate in the medium term and the need to implement measures in the short

term. The one possible – and increasingly credible – response is found in the figures generated by the Green Economy in terms of health, quality of life, employment opportunities, economic development and competitiveness.

b) Making the objectives of climate negotiations comprehensible to all. Ultra-sophisticated technical terms and complex diplomatic deals discourage the participation and trust of the civil society, thus transforming any solutions into a process between industry insiders. This is the starting point for the “Three innovative proposals” of our Conference.

1. Accelerate the elimination of fluorine compounds, as set out in the Montreal Protocol, the international treaty that has succeeded in stopping industrial activity that is harmful for the Ozone Layer. These compounds contribute around 18% of the greenhouse effect that carbon dioxide does, the latter being the principal contributor to global warming. In short, while the entire international community is focused on complex measures designed to limit CO₂ emissions, there is another route that could bring about important results, with an acceleration to be implemented in parallel, broadening the scope of an international judicial tool that is already in force.

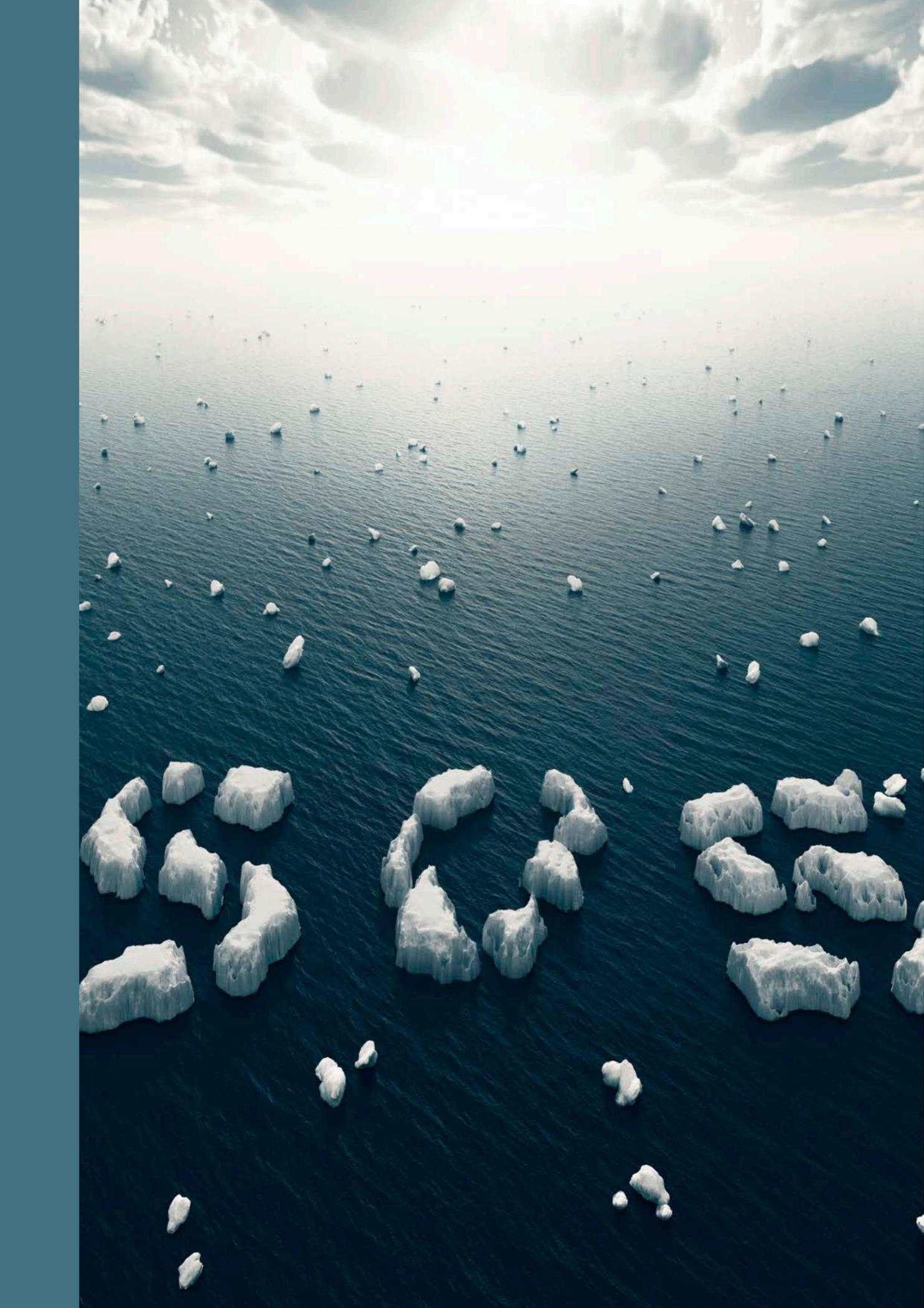
2. Show much more conviction in tackling issues linked to forests, agriculture, the landscape and food. In particular, we propose the development of “green infrastructure”, especially in urban areas, which can offset carbon and compensate for a significant portion of greenhouse-gas emissions. We propose that we effectively halve food waste, generating a potential saving of 250 million tonnes of CO₂ every year in Europe alone (an issue contained in the Milan Expo Charter). We propose the introduction of land-based accounting, to broaden and correctly value emissions reductions linked to the proper management of nature.

3. Ensure that on the judicial level, the agreement being prepared at Paris is as effective and prompt as possible. For the sake of the credibility of the negotiations before the eyes of international public opinion (which risks being further turned off by delays, scant transparency and complicated last-minute emergency situations), we propose that we: indicate both the long-term objective (2°C) and the intermediate objectives; ensure the quantification, valuation and aggregated measurement of the objectives, plus the periodic, automatic re-examination of these; share accounting rules on a multilateral level. We need to reinforce obligations and financial mechanisms. We need to make compliance more ‘facilitative’. And we need to include the possibility to accelerate the provisional application of the agreement – even on a partial basis – before 2020.

These are important issues in Italy: for the presence of the FAO and the UN organisations working to feed our planet and make it green once more; for the moral impetus provided by Pope Francis, including the impact of his surprising *Laudato Si'* encyclical; for the synergy with the themes and objectives set out during Expo 2015 in Milan.

This is why we must tackle the pessimism of our recent experience and of the dynamics of the negotiations with the optimism of our ideas, in order to prevent the short-term will of a few generations having an unsustainable impact on all future generations. Thanks to the work of respected scientists, economists and legal experts, we have proposed an Italian initiative that reinforces the European initiative. We call

for an acceleration – even an asymmetrical one – of the difficult negotiations. We entrust these proposals to the foresight of politics and the institutions, to the new sense of awareness and to the renewed commitment of modern environmentalism. We trust that the attention, conviction and mobilisation of public opinion will return.



2. Sustainable living on our planet

Opening remarks

Laura Boldrini

President Chamber of Deputies

I am delighted to be able to open this conference on the theme “Paris Climate 2015: three innovative proposals from Italy” promoted by the Centre for a Sustainable Future Foundation, which is presided over by Francesco Rutelli and who I thank for inviting me to be here today. When “innovative proposals from Italy” are involved, I believe that the institutions must be present. I would like to welcome all of the authorities and experts who will contribute to a discussion on an issue of extraordinary importance, that of climate change, the factors that cause it and the most suitable ways of tackling it.

It’s an issue that ceased to be a technical subject reserved to experts in the field some time ago. Rather, it has become a topic of great political relevance which affects the destinies of billions of human beings. This is why it is the responsibility of us all. Yet in Italy, unlike other countries, this topic still struggles to establish itself on the political agenda and in the public debate. We barely speak about it, while it is considered a fundamental issue in other countries.

When I was preparing this speech, I was reminded of a famous proverb attributed to Native Americans: “We don’t inherit the earth from our ancestors, we borrow it from our children”.

Nobody can pretend simply not to know anymore: climate change brought about by human action is triggering a series of knock-on effects that risk spiralling out of control and irreparably compromising the future of the Earth. And it has happened in a short space of time: such an accelerated pace of change has not been witnessed in the last 10,000 years, during which time the Earth’s climate has remained relatively stable.

Catastrophic atmospheric events causing the destruction of entire regions and the deaths of thousands of people, as well as the scarcity of resources, which is a root cause of conflicts and thus the forced migration of populations, are just some of the negative effects directly or indirectly attributable to this global phenomenon.

In his speech to the International Conference on Nutrition in Rome in November 2014, Pope Francis sent a clear message when he said that Earth would never forgive the abuse we have inflicted on it. It is our duty to protect the Earth, so that it does not respond with the destruction of the achievements of man.

Yet despite the evidence relating to the repercussions of climate change on organisms, communities and ecosystems, we continue to put off decision time. These courageous, forward-thinking political decisions must be shared on the international scale because humanity is one entity and the great global issues can only be tackled via a complex, yet necessary, collective project.

We also need a new culture, a new way of thinking of the world and of our own lifestyles. I said before that the issue of climate change is no longer a question for experts in the field. But this does not mean, I'm afraid to say, that our everyday lives demonstrate that we have grasped an understanding of just how crucial it is that we all take responsibility and modify our habits in order to tackle this problem. In our own country, we clearly see how difficult it is to recycle our waste, use water resources frugally, keep food waste down and favour public transport over private.

The emissions that lead to pollution and global warming are produced by our consumerist, energy-intensive lifestyle. And it is for this reason that the paradigm of sustainability must represent our present and future culture. I believe that teaching a sustainable lifestyle that respects the planet should be part of school curricula and should represent a fundamental part of our children's educations. The ruling classes must set an example in this field. Politics must cease to pit development and environmental protection against each other by taking clear decisions. The green economy can represent the springboard for substantial growth of a new kind, as has been demonstrated by the results of the investigation carried out by the Chamber's Environmental Commission.

Germany, which we all know is a great economic power, is a pioneer in terms of the use of renewable energies. Millions of people already produce their own energy in Germany using solar panels, with the country setting itself the target of 35% renewable in 2020 and 100% in 2040. All of this will have positive consequences not just for the environment but for the economy, given that neither the sun nor the wind will be sending Germans an energy bill. As Jeremy Rifkin recently reminded us here in Montecitorio at the Conference of the Speakers of the European Union Parliaments, we – the Italian Presidency – wanted to put the topic of new prospects for growth in our continent at the centre of the agenda, as well as that of fundamental rights. Yet beyond politics, the choice of ceasing to counterpose development and environmental protection must be taken by the world of economics: changing course is the right thing to do, but it is also a useful thing to do. On this subject, I noted with pleasure that in a recent interview, new Minister of Infrastructure Graziano Delrio stated that “the era of large-scale works is over and we are shifting to a modern idea where works are also part of the fight against hydrogeological instability, of urban mobility and of schools”.

The fact that companies pursue profit is entirely legitimate, of course, but profit can also be generated without poisoning the air, without using up arable land and without ruining natural spaces.

I would like to take this opportunity to appeal to entrepreneurs, and especially young entrepreneurs, to be innovators, to be creators, to be the protagonists and the architects of a future characterised by environmentally and socially sustainable growth. The industrialised countries certainly have a greater responsibility than others in tackling this huge issue.

For some time now, the European Union has placed the fight against climate change and the reduction of emissions at the forefront of its policy objectives.

This is a positive thing because Europe thus demonstrates that it is not just the product of arduous compromise on monetary and trade issues, but also a political

project of huge potential, one capable of taking responsibility for its citizens' wellbeing.

The initial results of these policies have been encouraging, but they are certainly still a long way off what's necessary to bring the phenomenon of climate change under control. The European Union will bring impressive credentials to the next round of global negotiations, which will take place in Paris in December. Nonetheless, the conference is set to be complex, with the outcome still very uncertain.

I believe it to be fundamental, therefore, that our country can make a contribution to the success of the negotiations via courageous and innovative proposals such as those put forward in today's conference.

Of these I would like to underline the proposal relating to the issues of deforestation, agriculture, the protection of the landscape and nutrition. These are important challenges that the UN agencies are working on and that, as you know, make up the central theme of Expo 2015.

Environmental policies can no longer be perceived as a hindrance to development, but on the contrary as an extraordinary opportunity for growth and job creation which the whole world – Italy included – must be able to grasp with both hands. A different type of development model really is possible, but we need a far-reaching strategy that pairs the reduction of emissions with action in other fields, such as energy efficiency, recycling, fighting deforestation and reducing food waste. Only by adopting this approach can a project for intelligent, sustainable and inclusive growth become a reality.



1. Three innovative proposal from Italy

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1.1 The scientific basis of climate change; a proposal to reduce non-CO₂ greenhouse gases

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The discussion on warming due to changes in the atmospheric greenhouse effect caused by human activities focuses, especially in political debate and public opinion, on carbon dioxide emissions and concentrations. This undoubtedly reflects the fact that carbon dioxide originating from the combustion of fossil fuels is the main factor of climate change and its impacts. International negotiations and lengthy discussions, which have dominated heated debates, focused largely on the issue of reducing fossil fuel consumption, increasing energy efficiency, and replacing high carbon density fuels with others that produce lower emissions per energy unit, and so on. The debate always revolved around carbon, its derivatives and compounds, i.e. the components of the fossil fuels on which depends most of our energy production and our mobility.

The atmosphere is largely transparent to radiation from the Sun, but our planet cannot store it endlessly, therefore it has to be immediately re-emitted to outer space, achieving a balance between incoming and outgoing energy. This indicator of this balance is surface temperature. However, the atmosphere is not a passive subject in this search for balance, but - being opaque to radiation emitted by the Earth's surface - this opacity increases the balance temperature of the surface compared to the level it would have if the atmosphere were fully transparent. This temperature rise is the greenhouse effect. The greenhouse effect is a natural phenomenon that even allows the existence of liquid water on the surface of our planet, which would not be possible without the opacity of the atmosphere. Aqueous vapour and carbon dioxide are mainly responsible for the opacity, and therefore are the major greenhouse gases, but while aqueous vapour is self-regulated by the atmosphere and cannot increase disproportionately, the natural evolution and change of carbon dioxide takes a very long time.

Over the past two hundred years, man has heavily interfered with these phenomena by pumping large amounts of carbon dioxide into the atmosphere, which has significantly altered the opacity of the atmosphere.

However, the story is much more complex than this, because a multitude of human activities have altered the composition of the atmosphere not only with respect to carbon dioxide, but with a much wider range of compounds that inevitably end up accumulating in the atmosphere. Most of these compounds, not natural in origin but generated by chemical, industrial and agricultural activities and to human economic activities in general, have the potential to cause a change in the greenhouse effect that is equal to or greater than that of carbon dioxide.

It is not just carbon dioxide that we have released into the atmosphere. The dozens of compounds that we have released can also increase the opacity of the atmosphere, and therefore change the balance, i.e. surface temperature. Not all of these

compounds have the same potential to alter the balance: some are more powerful than others. It is possible to define an indicator that accurately measures the altering potential of each compound; however, without being pedantic, if the total greenhouse effect is 100, 64 units are due to carbon dioxide, 17 to methane, 6 to nitrogen oxides, about 12 to CFCs and HCFCs, the fluorine compounds covered by the Montreal Protocol.

These “Montreal Compounds”, then, account for a non-negligible portion of the greenhouse effect, i.e. 18% of the total greenhouse effect of carbon dioxide. In other words, their total elimination would bring an 18% reduction of carbon dioxide concentrations: an attractive goal when one considers that these compounds are already included in the Montreal Protocol and therefore are being replaced. However, their concentration in the atmosphere from 2005 to 2011 remained virtually unchanged, because CFC reduction was offset by a rise in HCFCs, with which they were replaced in accordance with the Montreal agreements. Renewed, vigorous action to accelerate the replacement of CFCs with a compound that does not have the same greenhouse potential as HCFCs is an approach which, along with additional measures on other greenhouse effect components, could lead to a drastic reduction in global greenhouse effect. Replacing CFCs-HCFCs and other similar compounds involves, at least in principle, a more limited scope of action than the reduction of carbon dioxide, which, originating from combustion, is present pervasively in our societies and economies.

We still have a long way to go to verify the feasibility and effectiveness of this proposal. We must investigate the economic aspects, test the alternatives, their usability in industrial processes and their social acceptability.

However, it is clear that climate change should be addressed with a portfolio of measures ranging from mitigation to adaptation, and it is time we start to consider mitigation of other greenhouse gases as well. Among these, the “Montreal Compounds” can play a crucial role.

2 1.2 Land Use and Forestry: concrete proposals for the mitigation of climate change

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The containment of global warming below 2° C (with a probability of 66%) requires CO₂ emissions accumulated since the start of the industrial revolution to be below 3200 Pg CO₂ by 2050 (1 Pg, or petagram, equals 1 billion tonnes). We have now reached about 2000 Pg CO₂, which means that we have about 30 years to use up the remaining 1200 Pg CO₂. Past this time limit, emissions must be zero. The challenge is both complicated and urgent, as in order not to expend the bonus we have by 2050, the emission reduction should begin immediately and reach at least 60% emission cuts by 2050. A variety of proposals have been put forward to address emission reduction, none of which can solve the problem alone. Therefore, it is necessary to implement a portfolio of different measures, more or less significant as the case may be, which could lead to an overall reduction of the required magnitude.

The sectors involved in greenhouse gas emissions include agriculture, i.e. the necessary production of food for human society. Globally, agriculture is responsible for about 10.2 Pg CO₂ emissions equivalent per year into the atmosphere (approximately 30% of all anthropogenic emissions), of which approximately 5 Pg from agricultural production and farms, 4Pg from the conversion of forests into agricultural land (deforestation), 1Pg emitted by degraded peatlands approximately 0.2 Pg from fires.

On the other hand, forests absorb about 10.6 Pg CO₂ per year through photosynthesis, thus restoring a substantial balance. Human action can modify the terms of this balance, on the one hand by reducing tropical deforestation and increasing forest growth and hence the carbon sink, and on the other by cutting greenhouse gas emissions from agriculture through the promotion of sustainable forms of food production.

In this respect, measures related to agriculture and forests are provided both by the Kyoto Protocol and in future emission reduction agreements, i.e. a second Kyoto commitment period (supported by the EU and in continuity with the first commitment period), as well as in the draft Paris agreement (as of 2020). However, some elements have not been considered and may represent innovative proposals both for Italy and Europe and for the United Nations. Two proposals of innovative measures for the reduction of greenhouse gas emissions are set out below, along with a recommendation for the Italian position in the Paris negotiations.

Proposal 1 – The role of green infrastructure

The intent is to promote, at all levels of territorial aggregation, from rural and urban communities to regions and nations, the development of green infrastructures able to sequester carbon and partially offset greenhouse gas emissions, especially in urban areas. Green infrastructures include natural areas and parks, trees and urban vegetation, riparian vegetation, trees, hedges and greenery of the rural landscape, often located in peri-urban areas.

The objective is to preserve and expand everything that is considered “trees outside forests”, which is left out of traditional forest inventories. A recent study shows that, in Italy alone, these green infrastructures constitute a reservoir of approximately 108 Tg of CO₂ (1 teragram equals 1 million tonnes) with a capture capacity of approximately 3.6 Tg CO₂ per year. To this we should add the value of protected areas, which in Italy today account for about 2.8 million hectares. In terms of carbon sequestration, protected areas absorb around 25 Tg CO₂ per year. A 20% increase of green infrastructure would result in a 0.7 Tg reduction of CO₂ emissions per year, while a 10% increase in protected areas would mean a reduction of about 2.5 Tg of CO₂ per year.

At European level (EU27), a 10% increase of green infrastructures, including protected areas, would result in approximately 104 Tg CO₂ absorption per year, or a reduction of about 3% of total EU emissions.

Proposal 2 – Reduction of greenhouse gas emissions from food waste

Globally, about 1.3 billion tonnes of food are thrown in the dustbin: an amount that could feed about four times the world’s 800 million malnourished people.

In Italy and in Europe, food waste stands at approximately 30-35% of total agricultural production. In the case of Italy, 10 to 20 million tonnes of food are thrown away every year. The environmental impact of this waste also concerns the transformation of production in terms of greenhouse gas, since producing wasted food requires the use of fertilizers and fossil fuels, and the end-of-life emissions of waste (unless virtuous recovery policies are in place) imply that the organic fraction is disposed of in landfills.

In Italy, CO₂ emissions attributable to food waste every year are estimated around 31 Tg equivalents as a result of agricultural production, without considering the percentage of organic substance that ends up in landfills and mostly emits methane. In Europe, food waste amounts to approximately 89 million tonnes per year, and greenhouse gas emissions are estimated around 500 Tg CO₂ per year. The Charter of Milan, linked to Expo Milano 2015, provides for a 50% reduction of food waste by 2020: if those principles were adopted, savings of about 15 Tg CO₂ and 250 Tg CO₂ per year would be achieved in Italy and Europe respectively.

Proposal 3 – A new method of landscape accounting

Under the Kyoto Protocol, the current agricultural and forestry activity accounting system is based on the allocation of emissions to specific activities according to land use (“activity-based allocation”). For example, forest emissions are only accounted for in relation to man-managed forests, i.e. where a management plan exists, but natural areas or green infrastructures cannot be accounted for, including for their use in reducing emissions. At the same time, natural pastures and wetlands, i.e. the elements of the natural landscape, are not being considered. It would be useful - possibly in the next commitment period and certainly in the new Paris agreement - to introduce the concept of land-based accounting. This would provide a series of advantages, as the atmosphere does not distinguish human economic activities: emissions are released into the atmosphere regardless of which activities generated them, and this requires a more realistic and rigorous accounting method. Natural areas could be used to offset emissions from anthropogenic activities in an intrasector as well as a cross-sector manner. For example, an urban park could partially offset automobile emissions, or

forestation in a farm could compensate for emissions from livestock. The value of the natural capital could be enhanced and quantified in order to expand it or preserve it. Monitoring and verification would be much easier because the available geographical information systems would be more accurate than mere national statistics on economic activities.

3 1.3 Regulatory proposals for a timely and effective Paris agreement

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These considerations are mainly based on the text of the agreement to be negotiated in the coming months, adopted by the Working Group in Geneva last February¹ and intend to point out and analyse the regulatory options considered most suitable to reach an agreement that is effective, long lasting and widely shared by the international community at the next meeting of the Conference of Parties (CoP).

Against this evolving backdrop, the negotiations and the contents of the agreement should be viewed in a dynamic manner, leveraging the experience gained in the past in a long-term perspective. The negotiations aim to achieve the following general objectives:

1. Assumption of serious mitigation commitments, which will allow the global temperature rise to remain below 2 degrees Celsius;
2. Broad participation in and sharing of these commitments by all States;
3. Actual implementation of these commitments within a scientifically determined time frame, so as to prevent catastrophic damage from climate change.

The coming months’ negotiations in view of Paris

It is essential for the States to communicate their mitigation commitments to the UNFCCC Secretariat as soon as possible. It is worrying to note that at 10 April 2015 only 6 States (Switzerland, Norway, Mexico, United States of America, Gabon and Russia) and the European Union had submitted their commitments, accompanied by the information required to contextualize them and to ensure adequate understanding.

Regarding the text of the agreement, to date it consists of 90 pages full of brackets and braces and a long list of options. This text requires an intense effort on the part of the negotiators so that by December it will be cleaned up and ready for the States to finalise it and adopt it at the CoP.

¹ Ad Hoc Working Group on the Durban Platform for Enhanced Action, *Negotiating Text*, doc. FCCC/ADP/2015/1 (February 25, 2015).

Compliance with the deadlines for communication of the commitments and achievement of a broad consensus on a text as far in advance of the December CoP as possible are not only necessary conditions for the adoption of the agreement text. These elements are essential to strengthen the legitimacy of the negotiations and the final result in the eyes of States and public opinion, and to reinforce mutual trust between States and towards the entire decision-making process, which must be consistent and transparent (avoiding last-minute emergency solutions, as was the case with the 2009 Copenhagen Co). In this line of thought, in addition to legitimacy and trust, the principles of transparency, fairness and justice are recurrent elements that have acquired increasing importance in climate negotiations, and it is important that they should not remain abstract principles but should be translated into practice and implemented into concrete actions and measures.

Contents of the agreement

Building on the experience of the Framework Convention and the Kyoto Protocol, the Paris agreement combines two different regulatory approaches: on the one hand, it grants the necessary flexibility in the assumption of mitigation commitments in order to allow all States to participate in it, and on the other hand it sets certain points at international level, which are essentially valid for all to achieve climate targets.

The agreement should only establish the fundamental aspects that will characterise the international community's climate change actions in the future. Therefore, it is neither necessary nor desirable that the agreement should dwell too much on the details and technicalities of how certain measures and commitments will be implemented in practice. The definition of these aspects can be contained in the technical annexes to the agreement and/or in CoP decisions.

Assumption of ambitious mitigation commitments

More specifically, in order for the States to make serious mitigation commitments, the agreement should:

indicate the long-term objective (2 degrees) and one or more intermediate objectives as a way to keep track of progress with respect to the long-term goal;

determine on a scientific basis the mitigation actions required to achieve it;

declare that the mitigation commitments defined at the national level must be:

- more ambitious than those previously assumed;
- quantified, quantifiable or qualitatively measurable, and must be communicated with sufficient information to allow their assessment and aggregate measurement;
- reviewed periodically and automatically, using simplified procedures based on scientific principles to introduce new greenhouse gases and/or new sectors (e.g., agriculture, land management, maritime transport) or increase commitment to existing obligations.

- To ensure an effective comparison between actions taken at national level, and therefore the system's consistency, emission accounting rules must be shared and adopted multilaterally by the CoP on the basis of prior IPCC recommendations. Considering the urgency of climate change, in order to accelerate action the agreement could provide for provisional implementation, in full or in part, before 2020.

Broad participation in and sharing of commitments by all States

The variety of choice as to the type of actions that States can take should encourage them to participate in the agreement: each State assumes different commitments according to national circumstances that are relevant for climate policies (economy, energy, climate vulnerability, etc.). In the current global scenario characterized by multipolarity and strong evolution, this type of regulatory framework on a voluntary, national basis is more realistic in representing the different countries' characteristics, and is the ultimate expression of the principle of common but differentiated responsibilities (and related capabilities), which has always been the cornerstone of the legal climate regime. This helps to overcome the rigid distinction between Annex 1 and Non-Annex 1 countries, with a greater differentiation of each State based on indicators that reflect the countries' actual circumstances. This type of classification is already adopted, for example, by the World Bank (based on Gross National Income) and the United Nations (based on the Gross National Income in combination with other social indicators).

It is also necessary to ensure a strengthening of financial obligations, which must be:

- ambitious, and the level of financial contributions should be determined on the basis of criteria that reflect the principle of common and differentiated responsibilities and capabilities of the various States;
- quantified, measurable and predictable, with periodic refinancing;
- monitored and verified. To this end, it is necessary to bolster the UNFCCC public financial support measurement and traceability system by increasing cooperation with other financial institutions;
- the agreement should include private sector involvement, as already envisaged by the Green Climate Fund. Efforts should also be made to strengthen mutual support between mitigation and adaptation measures on the one hand and technological and financial assistance on the other, through cross conditionality mechanisms according to which:
 - some mitigation and/or adaptation commitments depend on prior receipt of financial support; and
 - conversely, payment of financial resources may be suspended in the event of failure to comply with reporting, monitoring, mitigation or adaptation requirements.

Actual implementation of commitments within predetermined time frames

The agreement must contain a provision requiring the creation of a compliance monitoring system and outlining its essential features. The compliance system should be facilitative and not sanctionary, so as to strengthen the States' capabilities and apply on them a certain pressure to be more virtuous. The system also collects and analyses information for a better understanding of the level of implementation and the causes of non-compliance.

The experience gained in this respect by the Kyoto Protocol compliance committee is extremely valuable. The implementation monitoring system should have the following characteristics:

- Facilitative approach;
- Wide competence on all the commitments made by the States;
- Inclusive: the system should be open to participation and contribution by other intergovernmental institutions and non-State actors. For example, for initiating the procedure or the possibility of obtaining information during the procedure;
- Scientific basis;
- Legal nature: the decisions should not be legally binding.

Conclusions and recommendations

The agreement should adopt a regulatory approach with elements of flexibility, such as individual differentiation of the States in assuming mitigation, adaptation and financial obligations, in compliance with criteria that are scientific, objective and multilaterally shared to the greatest possible extent, like those drawn up by the competent international bodies (e.g., IPCC, World Bank, OECD, other regional development banks).

The agreement should also set out clear rules consistently applicable to all States parties, including in the first place general substantive rules, such as the 2 degrees centigrade goal and the inclusion of intermediate and long-term objectives, and secondly, procedural rules such as:

- technical-scientific basis of decisions to be obtained by strengthening the decision-making involvement of other multilateral treaty institutions (Convention on Biological Diversity, IMO, ICAO), intergovernmental organisations (FAO, World Bank, OECD) and non-State actors (non-governmental organizations, the private sector, local communities);
- Multilaterally agreed emission accounting rules;
- A commitment implementation monitoring system that is cooperative, transparent and widely.

Lastly, considering the urgency of climate change, in order to accelerate action the agreement could provide for provisional implementation, in full or in part, before 2020.

2. Conference speeches

1 2.1 Towards COP 21: a first important step towards global GHG emission control

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The long-awaited Paris Conference on Climate Change is approaching. From November 30th to December 11th, delegates representing world's countries, along with non-governmental and civil society observers, will meet to work together towards the definition of a new, comprehensive climate deal that will guide international action from 2020. The stakes are high: countries need to find common ambitions not only about mitigation objectives, but also adaptation measures, financing to support developing countries plans, as well as technology transfers.

A key pillar of the future agreement will certainly be the so called INDCs, "Intended nationally determined contributions", that are a new type of instrument under the UNFCCC, through which both developed and developing countries declare the actions they intend to undertake to tackle climate changes at the national level.

Going beyond the historical dichotomy between Annex I and Non-Annex I countries, the Paris deal asks indeed for the participation of all countries, which are called to communicate their INDCs well in advance the two-week negotiations start. Since March, a number of countries have already submitted their contributions to the UNFCCC Secretariat (Table 1).

TABLE 1: INTENDED NATIONALLY DETERMINED CONTRIBUTIONS OF SELECTED COUNTRIES

Country	GHG emissions reduction target	Reference year	Period for implementation
Algeria	7-22%	BAU	2021 – 2030
Australia	26-28%	2005	2021 – 2030
Canada	30%	2005	- 2030
China	60-65% GHG/GDP	2005	-2030
Colombia	20-30%	BAU	-2030
Ethiopia	64%	BAU	- 2030
EU	≥40%	1990	2021-2030
Japan	26%	2013	April 1, 2021 – March 31, 2031
Jordan	1.5 - 14%	BAU	- 2030
Kenya	30%	BAU	- 2030
Mexico	22-36%	BAU (from 2013)	2020-2030
Morocco	13-32 %	BAU	2020-2030
New Zealand	11%	1990	2021-2030
Russia	25-30%	1990	2020-2030
South Korea	37%	BAU	-2030
Tunisia	13 - 41% GHG/GDP 46% GHG intensity of energy sector	2010	2015 - 2030
USA	26-28%	2005	2020-2025

In particular, as of September 21st, 37 submissions have been received, representing 65 countries (including the 28 EU members), and covering around 60 percent of global GHG emissions. Despite serving the same purposes, the documents show many substantial differences. From one side, most advanced economies, including US and EU, proposed economy-wide emissions reduction targets from a base year. On the other side, it is not uncommon to find intensity targets among developing nations, as in the case of China, Singapore, and Tunisia, which chose a reduction of GHG emissions per unit GDP, or more frequently, a percentage deviation from a Business as Usual (BaU) scenario.

As for developing countries, usually a lower “unconditional” bound and an upper “conditional” bound are proposed, the latter to be implemented only with financial and technological support from the international community. Moreover, developing countries’ contributions usually put more emphasis on adaptation measures than developed counterparts, which conversely continue to focus mainly on mitigation actions.

Against this background, attempts to evaluate and compare such a fragmented picture recently start to emerge. Looking, for example, at the emission targets pledged by four among the major emitters, namely EU, US, China and Russia, it can be seen that, if absolute levels of emissions are compared, the EU will support a higher effort compared to the other countries. On the contrary, when changes in the GHG/GDP ratio are taken into account, China and Russia will bear the burden of the climate action (Table 2). However, a proper analysis and comparison of INDC should rather focus on the distance of each submitted INDC from the domestic optimal emission pathway to achieve the 2C target.

TABLE 2. COMPARISON OF US, EU, CHINA AND RUSSIA'S TARGETS (7)

Comparison among INDCs targets	Country			
	US	EU	Russia	China (Emissions to peak by 2030)
GHG emissions change (%)				
wrt 1990	-16 a -14	-40	-30 a -25	+265 a +291
wrt 2005	-28 a -26	-35	+10 a +18	+76 a +89
Changes in GHG/GDP ratio (kgCO₂eq/US\$)				
wrt 1990 (%/year)	-3.0 a -2.9	-2.8	-3.7 a -3.5	-4.7 a -4.5
wrt 2005 (%/year)	-3.6 a -3.5	-2.9	-4.5 a -4.2	-5.0 a -4.7

Let us focus for example on the US and China. Both recently announced in New York ambitious plans to control their GHG emissions. Even though several analyses of the US-China deal on climate change policy have already been circulated, let us focus again on this important event to provide a better quantification of its implications for climate change control. Let's take a look at the basic facts. China has committed to peaking their emissions by 2030, if not before. The US says it is shooting for emissions reductions of 26-28% by 2025 (from 2005 levels). These commitments have created more international impact than the EU has been able to elicit through years of steady and progressive climate action.

Even though the most significant outcome of the US-China deal is not the targets themselves, but the impact on the political deadlock of international climate negotiations that will force other nations to up their game in the forthcoming climate negotiations in Paris (COP21), it's worth assessing the actual effectiveness of US' and China's GHG emission reduction commitments. What quantifiable impact will their targets

have? Are these new commitments any better than their previous approaches? If so, are they enough to avoid dangerous climate change?

The new emissions reduction target set by the US appears to be on track for the 2°C warming by 2100 limit. By achieving its target of reducing emissions by 26-28% by 2025 (from 2005 levels), the US will have achieved a 16.3% reduction in GHG emissions compared with 1990 levels. Though notable, this target is decidedly less than the about 30% reduction decided by the EU for 2025 (recall that the EU committed to reduce its GHG emissions by 40% from 1990 levels by 2030).

Even so, broadly speaking, the US is on track. Let's consider three scenarios for US future emissions consistent with the achievement of the 2°C target by the end of the century. The first scenario (EMF) is produced by the Energy Modeling Forum. The second scenario (LIMITS) comes from LIMITS, an important project funded by the European Commission. The third scenario (SSP) identifies US GHG emissions within the socio-economic pathway leading to a 2°C temperature increase by the end of the century. In all scenarios the emission reduction target adopted by the US administration is fairly consistent with the 2°C objective. An important additional effort will be necessary beyond 2025, but the target for 2025 seems to be ambitious enough.

However, is the US emission reduction objective feasible? This target will mean doubling the pace of emissions reduction set for 2005-2020 thereafter. Doubling the US effort to mitigate GHG emissions is likely to be technically and economically feasible. Both US per capita emissions and US emissions per unit of GDP are larger than the EU ones. Hence, the marginal mitigation effort is smaller in the US than in the EU.

However, in the US, the most significant barrier to climate change action will be a political one. The US lawmakers in Congress, currently a Republican-dominated body, may oppose any action to effectively reduce GHG emissions. In response to these political obstacles, President Obama may develop a climate action framework through his regulatory power that does not need to be passed through Congress. The most notable of these regulatory mechanisms are the Clean Power Plan, energy efficiency standards, heavy duty engines and vehicles standards.

Even with this practical approach to avoiding Congress, it is however unlikely that these policies will be able to achieve all of the 26-28% emissions cut needed unless new clean energy technologies are developed. With the Congress obstacle still standing, this could mean looking to private investment to facilitate the development of such clean energy technologies. With lowering costs and an opening market for some renewables in the US, attracting this finance may be viable. This may be the case particularly for solar power, the production of which has grown by 139,000 percent in the US in the past decade.

The situation is less positive in China. Prior to the recent commitment to peaking emissions by 2030, China had only a carbon intensity target of reducing emissions per dollar of economic output by 40-45% in 2020 (from 2005 levels). Modelling projections from the IEA and EIA suggest that a 45% carbon intensity target would result in overall emissions that are a slightly more ambitious than (IEA) or the same as (EIA) China's business-as-usual trajectory. In addition, given China's current and projected economic growth rate, it is very unlikely that a relative target of this kind will allow emissions to peak in time. The absolute commitment now pledged is therefore a step in the right direction. However, can we also conclude that China is on track for the 2°C by 2100 warming limit?

Let us consider again the three scenarios previously outlined and their implications for China. A peak of emissions in 2030 does not seem to be consistent with the 2°C

target in any of the three scenarios. Chinese emissions should peak in 2020-2025 for the 2°C target to be achieved by the end of the century. Nevertheless, the enhanced effort by China is worth being positively considered. Under the old commitment (2005-2020), China was supposed to reduce energy intensity by about 3% per year (a target that China is likely to achieve). Under the new commitment (peaking emissions by 2030) the implicit pace of emission reduction is about 4% per year. It's not a doubling of the emission reduction effort, but it's a significant and costly one.

It's important to stress how important the non-fossil fuel energy target is for China. Solar energy in China is developing at unprecedented rates. Nuclear energy is also growing fast. Unfortunately, China's coal use and overall growth are also developing at unprecedented rates. With the number of coal plants being built, China is already locked into a high level of carbon emissions no matter what actions they take now. With this in mind, hope comes anyway from China's concrete aim of increasing the total share of non-fossil fuel energy to 20% by 2030 at the latest. This commitment is certainly demanding. At the moment, only 10% of China's energy mix comes from non-fossil fuel energy sources. The 20% "clean" energy target would require China to deploy an additional 800-1,000 gigawatts of wind, solar, nuclear and other carbon neutral technologies by 2030. This is greater than the capacity of all coal-fired power plants currently operating in China.

By November 1st, the UNFCCC has to accomplish the ambitious task of synthesizing the aggregate effect of all the INDCs submitted, in order to assess the effectiveness of the proposed actions towards the objective of limiting the global temperature increase to 2°C. As anticipated by the Environmental Assessment Agency PBL, however, this objective is still far from being achievable. Additional contributions along with improved negotiating efforts are therefore needed to lay solid foundations for a fair, effective and forward-looking Paris deal.

Is this enough to conclude that Paris COP 21 will fail to achieve its objectives? Certainly not and for multiple reasons. First of all, even though not "deep" enough, the Paris agreement will be very "broad". For the first time, a large group of countries, notably US and China, will commit to reduce their own GHG emissions with the obvious consequence that, for the first time, a cap on total emissions will be achieved. Second, emission targets are just one of the components of the Paris agreement. Many countries are showing strong interest in multilateral and bilateral investments into R&D, which aim to drive the technology innovations and price reductions required to catalyze a clean energy future. Third, the big issue behind climate negotiations of the last years, and Paris COP 21 will be no exception, is finance. Many developing and emerging economies are not going to make any effort to achieve their own INDC unless adequate financing support is received by developed countries. The Green Climate Fund, albeit insufficient, is certainly a step forward into the right direction. A step, however, that developed countries are unlikely to make in Paris. Fourth, the Paris agreement must be considered the first mile of a long journey. More ambitious emission reduction commitments will be adopted in the coming years. What we do need now is rather a sound monitoring and verification system to guarantee that all countries actually implement, through domestic policies, what they will promise to do in Paris

There is a final element of Paris COP 21 to be underlined. As argued above, the likelihood of keeping the increase of global temperature below the 2°C "security threshold" is far from being at hand. All IPCC scenarios show that the 2°C target can only be achieved not only by progressively reducing the current flow of emissions, but also by removing, at least partially, the stock of emissions already in the atmosphere. As a con-

sequence, the opportunities and constraints in deploying large-scale carbon capture and storage (CCS) systems are thus of the utmost actuality, as the technology promises to get rid of the most common greenhouse gases produced in industrial and energy plants before they reach the atmosphere (or even to achieve "negative" emissions, if combined with biomass).

The potential of CCS is widely recognized: many global climate models cannot reach concentrations of about 450 ppm CO₂eq by 2100 (corresponding to the 2°C target) without CCS. Moreover, in the Fifth IPCC Assessment, scientists observed that mitigation costs become consistently higher if CCS is excluded from the mitigation scenarios. Nevertheless the challenges that CCS deployment is facing can raise doubts about the role it can play in future climate strategies and plans.

In September 2015, the IEA Greenhouse Gas R&D Programme (IEAGHG) published a special issue on CCS, with the aim of marking the 10th year anniversary of IPCC's Special Report on CO₂ Capture and Storage (SRCCS), issued in 2005, and outlining the progress made in the field in the last 10 years. According to the report, substantial progress has been made in the last decade concerning CO₂ capture, storage efficiency, and methods to assess leakage impacts and risks of induced seismicity. But the high costs and high energy penalties of CCS remain a concern and are among the highest barriers to the wide deployment of CCS in the energy sector, where the majority of GHGs are produced.

Over the past 14 years, governments have committed around USD 24 billion to fund CCS projects, and companies have spent at least USD 9.5 billion since 2005 (14). While only one CCS system on a commercial power plant is currently in operation several other projects have been dismissed or are facing investment shortage, such as the FutureGen project of a CCS-equipped coal plant in Illinois, from which the US government pulled out earlier this year. The financial viability of CCS in the power sector is likely to remain a constraint without clear actions leading to credible carbon prices, technology requirements or emissions standards, ideally at the global level.

A recent report by Citigroup noted that CCS represents "a potentially enormous game-changer for energy markets" but its application has been slow and its future deployment may prove to be "too little, too late" with respect to other more cost-competitive, low-carbon technologies. "Despite progress on the technical front, the industry believes there is a need for government policy to support the business case for broad scale implementation. While the fossil fuel industry, particularly coal, has tended to resist carbon pricing developments, ironically the lack of carbon pricing means there has been no business case for large scale CCS deployment". The public acceptability of CCS is a consequent issue of the need for government support, related to the potential competition for public funding between CCS and other low carbon options, and to the real and perceived risks of deploying CCS at the local level.

Summing up, the attempt to move quickly towards a development path consistent with the 2°C target depends more on technology development (for CCS in particular) and financial transfers (the full funding of the Green Climate Fund at least) than on the quantitative emission reduction commitment that will be adopted at Paris COP 21. The INDCs will certainly be important decisions, but without financial support to developing countries and without rapid technological improvements in CCS technologies, humanity will have to adapt to a temperature increase larger than 2°C.

2 2.2 The environment, climate and growth: a new cultural model starting on the territory

Catia Bastioli

CEO Novamont and President Terna

The “Paris Climate 2015 – three innovative proposals from Italy” initiative, promoted by the Centre for a Sustainable Future, positions itself at the centre of a debate that should lead to a strong Italian initiative in the seats of European power, so that the EU – beyond the USA-China axis – reclaims a leading role in climate-related diplomacy, with proposals for ambitious, binding actions within the negotiations for a new global climate agreement. If this does not happen, Paris 2015 risks producing a reductive, essentially cosmetic agreement and further marginalising Europe in the global panorama.

Change is necessary and we need to propose a model capable of combining the knowledge economy, the efficient use of resources, respect for biodiversity and the quality of our land and large local production chains, thus reinventing the way we produce and consume goods and services. A new development model, based on the Bioeconomy and on territorial regeneration, starting from the concept of *Sustainable Regions*¹ and incorporating the concept of development limits.

In all probability, the biggest obstacle to change is our own mindset. That said, Italy is showing many elements of change: cases of system-based economies are springing up in many fields, such as those of waste, energy efficiency, the efficient use of resources, chemistry using renewable resources and the agro-food sector. Our country should take on the challenge of becoming a positive example in terms of establishing a sustainable development model characterised by shared planning between different sectors, orientated towards finding solutions to problems of common interest by grasping formidable chances for reconversion, applying new system standards and working on access to credit. Among the areas of interest are hydrogeological instability, polluted areas, abandoned areas, pollution in cities and illegality in the food and innovative sectors.

The Italian agenda should be linked to the European agenda in both the short- and medium-term. The fact that the EU’s 7th Environment Framework Action Program, the Financial Framework for 2014-2020, the Europe 2020 Strategy and Horizon 2020 all coincide with the same period represents a unique opportunity to harness the common ground between policies, investment and research activities and support a transition towards the green economy. The Commission’s presentation of the Circular Economy Package, the Paris Climate Conference, the regional rural development programmes, the Juncker investment plan and the new Energy Union strategy signify further unmissable opportunities to take by the end of 2015 in order to reposition our production and consumption strategy.

¹ Ref. Conclusions of the Third European Conference organised by the Italian Presidency in Turin in 2014 and in particular of two documents presented there by the *Bioeconomy Panel* on biomasses and the market.

Building a low-carbon-emissions society based on a circular economy and resilient ecosystems could place Europe at the front line of science and technology, boosting competitiveness. Yet this requires a great sense of urgency and courageous action. In this regard, the Green Act appears to be a great opportunity.

In the context of the *green economy*, the establishment of a circular economy based on the efficient use of renewable resources is fundamental. Europe’s Bioeconomy is worth €2000bn and provides work to over 22 million people. Italy is at the cutting edge of the sector. For example, by producing a thousand tonnes of biochemicals, you create 60 new jobs. The future lies in the link between companies and the land, between research, industry and agriculture. The decisive support of the Bioeconomy with a proper plan – as has already occurred in many European countries – should be a priority for our government. The first fundamental objective should be to launch a concrete project that meets the target of new organic waste or recyclables in landfill sites as soon as possible. We need to define proper system standards. In this regard, the European approach of the Product Environmental Profile (PEP) should be appropriately implemented, establishing clear thresholds in order to reduce impact in critical sectors that can help us to change out production, consumption and disposal habits in the quickest time possible. Another essential factor is the staunch application of *Green Public Procurement* (GPP), which should be made obligatory for products purchased by public entities. Finally, we need a stringent approach to upholding legality, with particular attention to innovative products that require large-scale investment and generate benefits that, without proper system controls, could easily be stunted or heavily delayed.

We need concrete legislature that chooses a more courageous, longer-term path.

Italy can cover its energy needs via the efficient use of resources and focusing on energy efficiency and renewable energy sources, perhaps by ensuring that new industrial initiatives are fully decarbonised from the word go. We should launch an extraordinary plan with binding objectives for efficiency that guarantee new employment via the requalification of buildings and entire districts, with innovative financial solutions. Europe’s energy independence can only be built on the efficient use of resources, on renewable energy, on interconnection and on the development of *prosumers*.

In conclusion, we stand before unprecedented challenges.

Yet there are a wide range of new products and technologies available all over Europe, as well as case studies on a system-based economy, that can serve as catalysts for a faster pace of sustainable development.

A simple, concrete plan to take to the Paris conference is that of achieving zero organic waste and zero recyclables in landfills. In this regard, a Europe-wide recycling policy and a non-recyclable waste target of under 120kg/inhabitant could do a great deal in terms of reducing CO² emissions, improving land quality and taking advantage of the effects of carbon sinks in the soil. It is a simple yet fundamental objective to be achieved starting from a common plan shared among the various stakeholders. A programme of this kind would also pave the way for billions of Euros of industrial investment and the creation of thousands of jobs, the majority of which would be in Southern Italy.

In some respects, the crisis is the result of our inability to change our model. If policies are unable to grasp the benefits of the many reliable case studies in this field, the costs of inactivity will be dramatically increased.

3

2.3 The initiatives of Pope Francis and the new commitment of the Holy See to the climate and the environment.

The encyclical “Laudato sì”

Flaminia Giovanelli

Under Secretary Pontifical Council for Justice and Peace

I would like to express my warm thanks to President Rutelli for inviting me to this Conference. My brief remarks will focus on three main points: the reasons for the Church’s interest in environmental and climate issues, the Church’s commitment and the commitment of the Holy See in the same area.

The Church’s reasons are to be found essentially in the defence of the poor, the importance it attaches to the principle of responsibility, and the exercise of the virtue of prudence.

Defence of the poor

Everything that has to do with human beings, everything that interacts with their physical as well as spiritual well-being, is a primary concern of the Church, which Pope Paul VI described as “expert in humanity”.

This concern is even stronger when it comes to defending people who cannot defend themselves: in particular, in the case of environmental and climate issues, the poor and the future generations. With regard to the poor and in compliance with the concreteness that Pope Francis invites us to adopt, let me quote the Papal Representative in Geneva during his speech on the occasion of the 25th anniversary of the Montreal Protocol on the ozone layer protection. Monsignor Tomasi Talbot mentioned as an example the rising incidence of cataract formation as a result of the increase of ultraviolet radiation. It is one thing to have to treat this disease in rich countries, although today treatment may not be so readily available to all those who live in these countries; it is an entirely different matter to treat it in developing countries whose health sectors, as is well known, show severe shortcomings¹. Still with regard to those who have difficulty having their voice heard, in his Message to the Lima Conference of December 2014 Pope Francis cited the case of the small Pacific island States, to whose fate very little thought is being given and for the consequences of rising sea levels caused by climate change are so serious as to force population displacement.

The principle of responsibility

Regarding environmental and climate issues, the principle of moral responsibility comes into play. We are responsible for protecting our planet and the human family and to improve the world for the benefit not only of the present but also of the future generation. As these are global common goods, it is a collective responsibility common to all States².

This responsibility also imposes on the States the duty of fulfilling the commitments already made in this area and of using already existing technological and op-

erational bases³. Moreover, the responsibility principle urges us to overcome inaction and to follow the ethical imperative to act and to do so immediately⁴.

The exercise of the virtue of prudence

Another factor that comes into play in environmental and climate issues, besides the moral principle of responsibility, is the virtue of prudence, “guide of all virtues” according to St. Thomas. This virtue requires us to decide wisely on the basis of a careful analysis of the future impacts that our actions will have. In this regard, the Church recalls that “the gift of knowledge helps us not to fall into excessive or wrong attitudes”, first of all the risk of consider ourselves masters of creation⁵.

The virtue of prudence also urges the Church to recommend that an emphasis on environmental ecology should not be achieved at the expense of human ecology.

The Church’s commitment: education and new lifestyles

Education

The Church with its institutions pays particular attention to the promotion of environmental education, in a manner designed to safeguard the moral conditions for a genuine human ecology. Everywhere in the world, many Catholic educational institutions are committed to promoting this educational model. In addition, for several years now the Bishops’ conferences, dioceses, parishes and religious NGOs have promoted and managed environmental programs.

In this regard I would like to report the launch, in March 2015, of an initiative by the Catholic Church operating in the Amazon, called REPAM (*Red eclesialpan-amazónica*), with the support of the Pontifical Council for Justice and Peace.

New lifestyles

The adoption of new lifestyles and a sober life continues to be recommended by the Papal Magisterium⁶, as well as by the Holy See’s interventions at international conferences. As the Secretary of State recalled last September in New York, we need a real “cultural turnaround” to strengthen educational efforts, particularly with respect to the young⁷.

The Holy See’s commitment

Maximum level

The level of the Holy See’s commitment in this area reflects that of the Church and is demonstrated by the fact that interventions in the international sphere are, so to speak, at the highest level. Two recent examples of this were the Holy Father’s personal message to the President of the Lima Conference and the presence of the Secretary of State at the New York Summit on 23 September 2014.

1 Cf. in this regard the *Speech to the High-Level Segment of the 24th Meeting of the States Parties to the Montreal Protocol for the Protection the Stratospheric Ozone Layer*, 12 November 2012.

2 Cf. *Message of Pope Francis on the occasion of 20th Conference of Parties to the United Nations Framework Convention on Climate Change, Lima*, 1-12 December 2014 and *Speech by the Secretary of State, Cardinal Parolin at the UN Climate Summit*, New York, 23 September 2014.

3 Cf. *ibid.*

4 Cf. *Pope Francis’s Message, op. cit.*

5 Cf. Pope Francis, *audience of Wednesday, 21 May 2014*.

6 Cf. Pope Benedict XVI, *Caritas in Veritate*, no. 52 and the *Secretary of State’s Speech, op. cit.*

7 Cf. *Speech by the Secretary of State, ibid.*

Effective governance

This commitment of the Holy See at the international level also aims to promote a truly effective governance mechanism based on the principle of subsidiarity.

Vatican City

As for the Vatican City State, as the Secretary of State pointed out, again in New York: “Though small, [the Vatican City] is making significant efforts to reduce its fossil fuel consumption through energy diversification and efficiency projects”⁸.

Upcoming events

On Tuesday, 28 April, an interreligious meeting on the moral dimensions of climate change and sustainable humanity will be held at the Pontifical Academy of Sciences.

No date has yet been scheduled for the encyclical on the environment, repeatedly accounced by Pope Francis as a further demonstration of the commitment of the Church and of the Holy See to environmental and climate change issues.

Initiatives of the Pontifical Council for Justice and peace

At a lower level, but still worthy of mention, the commitment of the Dicastery which I represent has translated into a trilogy of publications on topics related to the environmental issue. The most recently published, titled *Earth and Food* follows two earlier ones on related issues, *Energy, Justice and Peace*, published in 2013 and *Water, an Essential Element for Life* in 2012.

4 2.4 Climate Change, Food Security and Nutrition

Josè Graziano da Silva
Director-General FAO

Distinguished guests, Ladies and gentlemen, climate change is one of the biggest challenges the world faces today. We can overcome it, but we need a collective effort.

I am pleased to be part of this event that brings together different ideas and ways to take action.

These dialogues are important steps on the way to COP 21, next December, in Paris. I am confident that we will leave Paris with the binding agreement we need.

Climate change directly affects the two areas of FAO's mandate: food and agriculture. For this reason, we are especially interested in this debate.

On one hand, agriculture, forestry, and other land uses answer to about 25% of global greenhouse gas emissions. It is part of the problem, but it is also part of the climate change solution.

The expanded agricultural sector is unique because it can sequester carbon in the soils, plants and forests. There are, however, important caveats: we cannot depend only on the agricultural sector to “clean” greenhouse gas emissions from carbon fuel.

And, of course, we cannot present the climate change bill to family farmers, pastoralists and agro-pastoralists in developing countries. They are not the main source of emissions and cannot be asked to pay the price.

Ladies and gentlemen, climate change affects agricultural productivity and might change the geography of food production. This concerns all of us, but can be especially damaging for developing nations and their rural populations.

Climate change has a direct impact on the food security and livelihoods of poor family farmers, pastoralists and agro-pastoralists. They usually have access to marginal and degraded natural resources. They suffer water scarcity. They are subject to repeated droughts and floods. And they have less means to cope with extreme situations.

Climate change worsens a situation that, in many cases, is already dramatic. We saw the damage caused by Typhoon Haiyan in the Philippines in 2013. Floods can destroy crops in minutes. And because of climate change, storms will become more frequent and more intense in certain areas.

Climate change also puts the existence of Small Island Developing States at risk. The recent destruction caused by Cyclone Pam in Vanuatu shows us that.

But we cannot forget the silent and slow onslaught of recurrent droughts.

Year after year they affect regions such as the Sahel and Horn of Africa. The devastation may be spread over time, but it is as deadly. Climate change will make these phenomena more intense.

And when agriculture does not have the chance to bloom and when food is scarce, the consequences can be dramatic.

Hunger can turn into despair and feed social unrest and conflict. Hunger can force people to leave families and homes in search for better opportunities that they do not always find. The loss of lives in the Mediterranean is a tragic reminder of this.

Ladies and gentlemen, agriculture affects and is affected by climate change. It needs to adapt and mitigate. And we need to ensure the world has sufficient food to feed a growing population.

Since World War II, the per capita food availability increased by 40%.

The Green Revolution significantly increased food production, saving millions of lives from famine in the 70's.

According to FAO estimates, we need to increase food production to 60 percent by 2050, when the population will have topped the 9 billion mark.

The Green Revolution met the challenge of its time. Now, we need that same innovative spirit. But we need different, more sustainable solutions for today and for tomorrow.

The dominant input and natural resource intensive approaches to farming come at a huge environmental cost. It increased production, but also increased soil degradation, water pollution, and emissions of greenhouse gases and caused the loss of biodiversity.

We need a paradigm shift to more sustainable, inclusive and resilient food systems. There is not one single, magical solution to sustainably improve food security and nutrition.

Each country needs to find the ways forward that best respond to their needs. They need to build on their experience and knowledge, adapting to their own reality approaches that have worked elsewhere.

Climate-smart agriculture, for example, emerges as a way to increase food production while adapting to climate change, reducing and removing greenhouse gas emissions. FAO is actively engaged with this issue and hosts the Facilitation Unit of the Global Alliance on Climate Smart Agriculture.

Agro-ecology is another alternative for increasing production in a sustainable manner, using elements already in the environment. It addresses climate change, builds resilience and can benefit, in particular, family farmers.

Examples of existing climate-smart agriculture and agro-ecological practices include:

- first, restoring degraded lands through sustainable grassland management. The reduction of grazing and the improvement of pastures protect the soil, increase grassland biodiversity and the capacity of soils to hold water and lock in more carbon.
- second, improved soil management through no-till farming, crop diversification and by using natural nitrogen fixation methods, diminishing the need for fertilizers.

Sustainable forest management is also a measure to mitigate GHG emissions. And we can reconcile the REDD+ reduction of emissions from deforestation and forest degradation with the provision of alternative income generating opportunities for poor rural families. But we cannot look only at production.

At the aggregate level, the world already produces enough food for all. And yet, 800 million still suffer from hunger.

The main cause of undernourishment today is lack of access to food and, in some cases, inadequate distribution. That is why agriculture and rural development in developing countries is key. They generate jobs, income and food security.

Family farmers are a central part of the solution. They already are the main food producers in many parts of the world. And they still have huge potential to enhance food security, increase food production, recover traditional crops, and preserve our natural resources.

The benefits are even more significant when we link family farming to social protection policies such as cash transfer and school meal programs. This combination can be a motor for sustainable local development.

But we also need to look at the consumption side when we speak about sustainable food systems. The reason is simple: about one-third of all the food produced is lost or wasted.

Food waste, in particular, is even more shocking than it seems. Consumers in rich countries waste around 222 million tons of food every year. That is almost as much food as the entire net food production of sub-Saharan Africa, around 230 million tons.

Ladies and gentlemen, we have challenges, but we also have the means to face them. Now we need to transform political commitment into action and results.

That includes ensuring the necessary funding to cover the cost of transition to food systems that could mitigate GHG emissions and adapt the agricultural sector so that it is more sustainable and resilient to climate change.

The global community has already mobilized 10 billion dollars for the Green Climate Fund.

But as the United Nations Secretary-General recently reminded us, by 2020 we need to invest 100 billion dollars per year to fund sustainable development.

For FAO, the funding of this transition is the main issue that we need to resolve now if our efforts to tackle climate change are to be successful.

Hopefully, the Third International Conference on Financing for Development, which takes place in Addis Ababa, next July, will help us find ways to unlock the investments we need.

Ladies and gentlemen, to end, I would like to highlight that Italy is an important partner in building the sustainable and food secure future we want.

Choosing 'Feeding the Planet, Energy for Life' as the ExpoMilano theme is just one example of how Italy is reinforcing the importance of food security, climate change and sustainable development.

FAO looks forward to celebrating World Environment Day, on June 5, at Expo Milano. With our partners from UNEP and the UNFCCC, we will hold a side event on our joint "Think Eat Save: Reduce your Foodprint" campaign.

FAO stands ready to develop a strategic partnership with the Italian Government to prepare for COP21 in Paris and to contribute to a strong new agreement on climate for the post-2020 period.

We look forward to enhancing our cooperation to realize the dream of a sustainable and food secure future.

Thank you for your attention.

5

2.5 What is at stake in Paris COP21, the French Precedency's perspective

Bérengère Quincy

Goodwill Ambassador 2015 Paris Climate Conference

The Conference of the Parties to the Climate Convention will be held in Paris in less than 8 months. It will be a crucial event because, following a series of COPs, including that of Lima - on which we should congratulate Peru - we will finalize an agreement on a global plan to fight climate change, aimed at enabling us to transition towards a low carbon or carbon free world economy and to adapt to climate change.

For my country, this is clearly an honor as well as a huge responsibility. It is the largest international conference we have ever organized in France: 20,000 delegates, 20,000 guests, 3,000 media representatives. All public authorities, first among them the President of the Republic, are joining in the effort to make this meeting a success. The Minister of Foreign Affairs Laurent Fabius will have the honour to chair it. He will be chairing, but the success or failure of the conference will be the success or failure of all of us.

What we want to achieve in Paris / How we will define success,
to answer Francesco Rutelli's question

I prefer to quote Jean Monnet: "I am not optimistic, I am determined."

What we want is to build an Alliance based on 4 pillars complementary to each other:

1. firstly, a legally binding global agreement that limits global warming to two degrees compared to the pre-industrial age (as described very effectively by Francesca Romanin Jacur)

Work remains to be done on many points. A few are discussed below:

- the legal form of the agreement and the legal nature of its different elements. It will be necessary to address, in particular, the difficulties of ratification by the United States Congress.
- The so-called differentiation, i.e. the application of the principle of common but differentiated responsibility and respective capabilities in the various terms of the agreement,
- adaptation and development: the first historic goal of the Convention remains emission mitigation (reduction), but developing countries (small islands, African countries etc.) have great expectation on adaptation, and there is a need to find a balance, also with respect to financing, between mitigation and adaptation (and between climate and development as well). In this regard, the progress we manage to make in integrating these two goals during the Sustainable Development Summit scheduled in September in New York will be very important.

- the long-term perspective of the agreement, based on the two degrees objective: according to studies by the IPCC, at the current rate we still have thirty years of emissions, therefore we must wait for emissions to peak somewhere around 2020, cut them by half by 2050, and achieve zero emissions before the end of the century.
- Issues concerning the monitoring process and the contribution cycle to enable a progressive increase of the collective target of the agreement through cooperation and means of implementation, on both mitigation and adaptation,
- issues relating to commitments (mitigation, adaptation, means of implementation), and in particular the types of commitment and the commitment measurement, reporting and verification (MRV) system
- Lastly, the period before 2020: given the urgency, it is also imperative to get the States and the actors to make greater efforts during the years from now to 2020. Do more, faster, now, and all together.

Our ambition: to obtain a fair, strong and dynamic agreement that will show the way to Governments and actors and give them confidence to engage in the long-term pursuit of a low carbon economy

2. national contributions

- a bottom-up approach, since the Kyoto Protocol's top-down approach has been unable to involve everyone
- (a report by the Convention secretariat by the first of October to measure the effectiveness of the contributions with respect to the two degrees objective)
- national ownership is welcome: it may explain in part the delay, but hopefully 90% of communications will be received by 1 October. France will do its best, with others. The EU has taken the lead, and it is not alone.
- a primary role for measurement, reporting and verification mechanisms; as Professor Valentini showed in his presentation, measurement is essential because it helps to act better and to compare each country's actions better; transparency must also be ensured,
- contribution cycles and mechanisms to monitor these contributions, enabling us to raise the target in each cycle in order to remain below 2° C. The announced contributions must be threshold levels, it should not be possible to lower them any further.

3. a financial and technological package

to support the efforts of developing countries that make commitments

Implement the commitment made in Copenhagen for 100 billion public and private financing, and 10 billion for the Green Fund, acquired today.

Since I am in Italy, I would like to emphasize the essential role of the G7 in early June under the German Presidency: it is vital that G7 countries should clearly demonstrate their commitment.

Within this package, the following should be determined:
How to calculate climate financing,
How to promote the leverage effect between public and private,
How to redirect investments towards a low carbon, resilient economy,
How to integrate the climate change risk.

4. Actor's commitments and initiatives

This is what is called 'Lima-Paris Action Agenda', also known as 'the solutions agenda'. The idea is that it belongs to the whole society, to all the forces that are needed for a successful economic transition and transformation of society. It is not only the Governments that are required to take a stand and act on these issues, but also big cities, regions, companies, industry sectors, associations, research centres, and civil society at large. All these actors are already showing that fighting climate change is possible, feasible and less expensive than the cost of non-action. We also count on them to act as drivers to push Governments to pursue more ambitious goals.

I am sure that you share this idea, as demonstrated by your debate and by the participants gathered here.

The Secretary-General of the United Nations Ban Ki Moon had invited major Government representatives and stakeholders to a Summit in last September and had given them a platform. Initiatives have also been announced in the fields of agriculture, forests, finance, industry, renewable energy, energy efficiency, sustainable cities, resilience and transports. Our role is, among others, to continue to mobilize and encourage the formation of coalitions and the development of initiatives.

An example, as mentioned by FAO Director General José Graziano which I am happy to quote, is that of an initiative for a more intelligent agriculture to face climate change, an agriculture that works with nature rather than against it.

We expect that, within COP 21, there will be at least one day devoted to this 'solutions agenda'. But the actors also have other ways to mark their commitment: summits are planned for the private sector (Paris, May), the local communities (early July in Lyon), for science at UNESCO in July, for young people in November.

These are the four pillars against which we will be able to measure success in Paris.

Why it is possible

The Minister Laurent Fabius quotes Léon Blum: «I believe it because I hope»:

- IPCC studies increasingly open the way to certainty and less and less to skepticism, and provide valuable guidance for action, like the 2 degrees objective
- the economy and technology are on the move, the big players are waiting for clear signals, of course, but they are ready to make commitment, some are already doing so, it is becoming increasingly evident that the fight against climate change is an economic opportunity in all countries, regardless of their level of development,
- the political situation changes: climate change has become a matter of national policy, all countries want a global agreement in Paris, very large countries like the United States and China have made commitments, others like Mexico have shown the way.

Coming from the Presidency, this is commitment at the highest level. We need to ensure a transparent and inclusive negotiation process and we need to strengthen confidence, remain neutral, have a listening attitude towards all. We need to work together, in close contact with the Peruvian presidency, to identify consensus and solutions; the work consists mostly of convincing others, and we are doing our best at all levels, up to the President of the Republic.

We need this to be the agreement and the Alliance of all!

6 2.6 Quality and green economy: the Italian mission

Ermete Realacci

President Environment Commission, Chamber of Deputies

Although the upcoming Paris Conference is not receiving much public attention in Italy, the same does not apply to other countries. In the United States, President Obama and Hillary Clinton are placing strong focus on the fight against climate change. France will use its best efforts to ensure that the Conference to be held in Paris brings results.

However, with regard to environmental issues, Italy suffers from a lack of political culture and, above all, of information. Concerning the latter, let me give you an example: before the Copenhagen Conference I sent letters to famous TV anchors - the same ones we see today - to draw attention on the importance of the event. One of them called me, and politely told me he was very interested in those topics, however, "politics was currently what audiences wanted to hear about, and therefore he could not cover the event". Just as politely, I answered "So, are the heads of States going to Copenhagen to discuss sex and football?" Most media consider environmental issues as if they were inconsequential secondary topics.

Instead, it must be recognised that Pope Francis's encyclical, 'Laudato Si', and his personal commitment greatly helps to address climate change issues. The Pontiff's message contains a very powerful mix of great themes touching on theology, science, the destiny of man and of the Earth, along with extremely practical matters such as car sharing, waste recycling, or the types of plastics. I am certain that the economics for humans advocated by Pope Francis is an economics that can speak Italian, because the themes of beauty, social cohesion and ties with the local communities integrated with innovation are in our DNA. His exhortation to create a broad alliance for the protection of the environment, the Earth and humans themselves has an authoritative urgency.

With regard to Italy, Bill Clinton used to joke that "there is nothing wrong with the United States that cannot be fixed by what is right with the United States." I think this also applies to Italy. We are a country with an enormous number of problems: we have deep inequalities, the South struggles to revive its economy, lawlessness and corruption are pervasive, the bureaucracy is suffocating, but at the same time we also have great resources, talents and skills of which we are often not fully aware.

In the area of separate waste collection, for example, Milan tops the European rankings together with Vienna, and the capital of Lombardy is the world's leading city

for organic waste collection. In the province of Treviso, separate waste collection has reached 85%. Of course, we also have Sicily and many other critical situations, but these should not make us forget our excellence.

The crisis has produced deep, positive changes, not only in consumption patterns but also in habits and lifestyles. If a few years ago someone had told me that in Milan 30,000 people would be using car sharing services, I would have thought that person to be overly optimistic. Instead, 120,000 Milan residents now use shared transport. A great number of these are young people for whom the automobile is no longer a status symbol.

Huge changes are underway in the energy sector. Last year, China's economy grew by "only" 7%, yet its polluting emissions decreased by 1%. This means that a turnaround in the trend is taking place and greater attention is being paid to the environment in China as well. In Italy, the new management team of ENEL has decided to close the Porto Tolle plant and another 22 old and polluting sites.

Italy needs to monitor these innovation processes. In part, it is already doing so. Examples of this are green chemistry and concentration thermal solar energy: however, we must take care to prevent these sectors from leading nowhere, as unfortunately was the case some years ago with personal computers. Politics can influence the direction that will be taken.

From this point of view, one of the most significant measures was the ecobonus granted for energy efficiency in building, which has proved to be an extremely effective tool to revive one of the most important sectors for employment, and one of the most severely impacted by the crisis. The difference in the energy bill between a well built house and one that is poorly insulated is €1,500-2,000, much more than the average additional IMU property tax (€230 per household) paid in 2012. The ecobonus and the tax credit have generated investments of €28 billion and 420,000 jobs, between direct employers and the supply chain. It was an extremely effective anticyclical policy.

As to the tendency to underestimate our potential, I would like to recall that Italy is one of the top five world countries with a manufacturing trade surplus of more than one hundred billion dollars. Only China, Germany, Japan and South Korea do better. Italy's economy can recover, and is already recovering, if it decides to leverage its strengths from a green perspective and to put to good use its quality, beauty, and mix of traditional skills integrated within innovative technologies. Think, for example, of what has been done in the winemaking sector. Today, Italy (along with France) is the world's leading wine exporting country. In the mid eighties, we went completely off track when we started to pursue low prices and large quantities: before the methanol crisis of 1986, Italy produced over 50% more wine than it does today, but the value of exports was the equivalent of approximately €700 million. In 2014, after the changes produced by the response to the methanol crisis, we produced 41 million hectolitres and the value of exports was more than €5 million. As the winemaking sector demonstrates, investing in quality and local excellence is highly advantageous.

We cannot hope to compete with Guangdong through low salaries and reduced rights. Instead, we must enhance product quality, innovation, specialisation and the knowledge and skills of local communities. The challenge of the future is rooted deep in the past, even for politics. There is a passage of the Siena 'Costituto' of 1309, which I find amazingly suited to the present day: *"Rulers' highest priority should be to beautify the city as much as possible, so that it gives joy and delight to foreigners, and honour, prosperity and growth to the city and its citizens"*. Italy can make it - if it focuses on quality and green economy and restores its beauty and honour.

7 2.7 Environmental sustainability and economic crisis

Cesare Pozzi
LUISS University

I would like to try and go against the tide by proposing a series of observations on the current situation of environmental sustainability. I hope that these can stimulate a more general sense of reflection that can lead to a more effective planning model.

In this sense, one fundamental premise is the fact that the structural crisis the world has been plunged into since 2008 (and which is a long way from being resolved, because one only emerges from a structural crisis once a different model for life is established), has thrust all of our environment-related decisions into the spotlight, with these now closely linked to problems relating to social sustainability.

If we are starting from this premise, then it is indispensable – as well as useful – that we begin with a reflection on the normative and operational steps that have been taken up until now in order to try and guide us and govern the social and economic system, both during the current crisis and, above all, before it. Obviously, when we speak about concrete situations, we must concentrate – in order to simplify the issue and avoid opening a discussion on the theme of sovereignty, which would lead us far away from the key subject – on "those who have responsibility for their own actions" and thus on our "Italian" situation. With regard to the topic of "crisis", it is widely established that this has brought about a profound change in Italy's economic and production system, contributing to the lack of recovery currently being registered.

Understanding the reality of the situation is made more complex when you reflect on the data. In the period between 1999 and 2011, we profoundly changed our structure, progressively accumulating – at growing rates – a current account deficit of over €350bn. From 2012 onwards, as a result of a series of restrictive political decisions, another abrupt change was registered, leading to a return to marginally positive current account balance, but at the cost of a drastic reduction in overall living standards that itself led to a fall in imports. In the two aforementioned periods, we have seen our manufacturing production output decrease by over 35% in comparison with the starting figure in 1999, while worldwide manufacturing production grew by over 60%! The worry that the economic competition that developed within the European Union during this period, via the provisions set out by the single currency for the Euro area countries and the common Community rules for all countries of the Union, is thus proved to be well-founded. The above figures for the Italian manufacturing industry are even worse, as Kaldor could attest to for our country, than those registered during the Second World War, given that they have been felt over a longer period of time, thus consolidating their negative effects to the production and social systems, laying the foundations for numerous problems linked to the possibility of future recovery.

This structural system change – which can be clearly understood on this simple analytical basis – began for us long before the great collapse and can – but above all, being an indisputable fact, must – constitute, if properly analysed and studied, a forum for the exploration of new development opportunities to be created across new sectors of the Italian economic system. Obviously, this is only possible providing we

understand the mechanisms of what has happened in recent years and can draw up a realistic picture of the current production system in terms of localisation, typology and available resources.

These are the premises upon which we must analyse the Italian strategy, which must be permanently linked to the issues of environmental and social sustainability.

The divide we currently see between these two areas – environment and society – is the source of the widespread dissatisfaction with the results achieved by our strategy thus far. Despite the enormous enthusiasm that practically all of the principal players have shown for this type of planning and activities, the less-than positive results achieved seem to me to be indicative of an implementation and normative model at odds with the reality of Italy's economic and social system.

This enthusiasm and the conviction that the issue of the environment represents a great opportunity cannot fall away at this point, quite the opposite. It goes without saying that in order for these opportunities to be grasped, they must be properly framed by a context of knowledge and understanding of the reality of the situation. Otherwise, we run the real risk of investing great effort without effectively changing the economic and social system, which should be focused on reinforcing the sustainability of our country's development and capacity for international competition, thus becoming a benchmark for anyone moving down this particular route.

I would therefore like to quote Pope Francis, who has supplied us with one of the clearest social analyses we have available to us thanks to his simple, universally accessible language. The Pope states that "ours is no longer an era of change, but a changing era".

In a changing era we are aware, continues the Pope, of how the worst instincts of man can emerge, as schemes and structures that were once credible and consolidated cease to be useful.

In an era of change you can still manage things with the old models we used to interpret reality, with the old ideas and the old theories, given that these still hold partial validity. In an era of change, it is possible to adapt historic, consolidated theories and models to the changes. These will continue to function, providing responses tied to the reality of the moment and useful in managing the evolution of society and the economy.

But this is no longer true in a changing era. The old models and the old theories can no longer be adapted – they must be completely changed from the foundations up, because otherwise the responses they provide would be misaligned with reality and unhelpful in determining the effects of the decisions taken.

In a changing era we must find the courage to understand that the way everything was decided and done in the past no longer works and that it is necessary to discover coherence with our reading of the social and economic situations, aware that human systems do not work in an unvarying way in the face of the predetermined, inescapable laws of nature.

Specifically, if we take our economy's journey towards increased environmental sustainability, the entire system we can broadly define as negotiation and that we have developed thus far has been based on a theoretical vision of the economic/social system which appears to be fideist and lacking any real scientific basis. On first the theoretical and then the practical levels, this system of negotiation fails to sufficiently carry the system towards the objectives originally set. This depends on the phenomenon of operators and companies adapting to the rules and procedures imposed, yet pursuing different goals and objectives.

In the economic and social process, when an overall objective is set a whole

host of rules orientated towards sub-objectives coherent with and connected to the principal objective are also established. Yet over the course of the process we see that realisation of these sub-objectives does not guarantee the realisation of the principal objective, even where the rules are respected.

A good example of this is the de-carbonisation of the production system, which can be seen by all. At this moment in time we must acknowledge that the attempt to implement a model and a social system compatible with the objective of respecting the environment and ensuring the survival of mankind has failed: in too many cases, one of the two objectives has had to completely step aside for the other, in order for us to be able to state that the current regulatory system can reconcile respect for the environment with economic and social development.

By continuing to adapt past rules to fit the current situation, we risk simply seeing our economic, social and environmental reality change despite our regulatory action, without really influencing this process. Though this situation is true on the global scale, it is even more applicable in Italy, where we are watching this change with a particular inertia which stems from – and is a product of – our inability to govern the processes most closely linked to the collective and to our own land. I would here like to emphasise – without going into it at too much length – the conflict posed by a global environmental objective pursued with international regulations, when these should then be applied region by region, collective by collective and production system by production system in every local area.

This brings me onto another theme that is closely linked to the argument we are discussing – that of our country and the settlement model being established.

Let us start from the consideration that Italy is a particularly delicate country from an orographical point of view, distinguished from the historical and artistic perspectives and with a strong anthropomorphic presence both from a settlement and production-related perspective. These elements place Italy in an advantaged position to cast itself as one of the driving forces behind a change in the perspectives used for the analysis of the territorial, social and economic situations, of the models used to interpret these and of the processes by which we develop environmental action for the management of the land and of the activities implemented.

One possible synthesis on what has been done so far, given the pressing need for new analysis, new interpretation and new consequential action, is represented by the wait-and-see philosophy of: "let's equip ourselves and set off".

The initial alarm, which saw some analysts say: "*it is absolutely necessary to do something to invert the environmental slump*", was met in political terms by a message of mediation, which essentially put forward the idea that "*we'll never reach the final objective, but let's start to do something*", consequently obtaining only a partial slowing down of the changes, due to the incomplete attempt to change the production system.

Today, however, it is evident that the root philosophy must be changed, including a more engaging slogan of the likes of: "*Those who love me will follow me*".

A more complete, more challenging statement of intent for change. A way of tackling the governance of change that starts from the centrality of the objectives we wish to pursue (environment, society, production, localisation) and implements operational processes that are closely linked to the realisation of said objectives and engage and direct the action and the change of the parties involved.

Italy's industrial policy over the last few years has not gone in this direction. It is no coincidence, for example, that our economic and social action has brought about the desertification of our own land. We must weigh up our past action with current results.

When we talk about desertification, we are also talking about the effects we are witnessing after the concentration and urbanisation of people in just two large metropolitan areas of the country: Milan and Rome. We have decided – perhaps subconsciously – on one hand to put pressure on our infrastructural systems in order to enable the movement and resettlement of people to these two urban hubs, and on the other to pursue economic and social policies that have, in fact, forced our young people into economically motivated emigration to other countries, in many cases economic competitors of own. The phenomenon is worrying from both a qualitative perspective – with human resources trained in Italy and then gifted to other countries – and a quantitative point of view: consider the fact that our current emigration rates are almost equal to those registered in the early 1970s (though in that case it was largely non-qualified workers emigrating).

Historically, Italy is the country with the most extensive exodus of people in the world after China: depending on how you calculate the figures, there are currently over 50 million people of Italian origin residing outside Italy. In the first 20 years of the 1990s, until the Americans implemented the Immigration Act, 600,000 Italians emigrated every year. We now find ourselves in a comparable situation, with the same decisions and consequences to face up to. The main difference, other than the quality of emigrants, is that our current demographic curve is completely different to how it was at the beginning of the 20th Century, meaning that the haemorrhage of human resources poses a considerably greater threat to the future development of our country.

It should not be forgotten that in 2014 alone, we witnessed the birth of a little over 500,000 babies, including those born to immigrants. The year which saw the most births in Italian history was 1965, with one million, fifteen thousand babies born. It constitutes more than double the number of births last year, including the flow of migrants, which account for 25% of the total.

With these figures in front of us, it seems incomprehensible that our social policy does not prioritise action designed to prevent our best resources from emigrating.

In order to demonstrate the delicate nature of the process, I will focus solely on my specific area of activity, which is linked to university: university courses are structured in a manner so far removed from the reality of Italy's economic and production systems that the students are trained in a way that binds them to go and work abroad when they obtain their degrees, leaving no benefit for the national collective from all of the educative effort invested in them. There is a lack of collective attention on the coherence between our academic preparation processes and the reality of the current production and social system, as well as with their true potential for growth in one sector or another. We are in a situation in which the right hand doesn't know what the left hand is doing, and as a consequence we are unable to achieve coherence between the organisation of university education and our country's economic and social structure.

The same lack of coherence is seen in the level of localisation of the population. Young and old are leaving entire areas of the country (and if we reflect on our own local areas we can all confirm this to be at an advanced stage): small- and medium-size towns, the South of Italy and mountainous zones above all. There are communes and indeed entire provinces where the average age of the inhabitants is quickly rising to around 70 years old. In this light, it is tough to say what future our country has in store.

And perhaps there is no point talking about a decarbonised future for a system that risks have no future at all. Absurdly, we risk actually benefitting the environment through the absence of notable human production settlements across the large majority of our country.

I am in agreement with the previous speech from Lanza, who rightly underlined the fact that we have reached the environmental objectives we set ourselves because we stopped producing, not because we produced better. This conclusion is in sync with the fact that we have observed the destruction of 30% of our manufacturing capacity.

The problem is that lost capacity cannot be reconverted according to environmental and decarbonisation rules. In order to generate sustainable production, we need a production base – even one that is technologically antiquated – from which to start, comprising manufacturing processes, land, human operational capacity and a community that knows – and wants – all of this.

On the contrary, areas of land without production facilities still have to swallow environmental policies and end up paying a part of the cost of the technological development of other reasons. We need to use these considerations to take infrastructural decisions that are completely different to those currently taken in Italy.

Let's compare ourselves for a moment with an exemplary manufacturing country: Germany. Germany demonstrates that you can manufacture in many different ways, relying on a network of towns of a maximum of 200,000 inhabitants, where the citizens are both consumers and producers at the same time, as should be the case in a capitalist society. The risk of a settlement model characterised by the emergence of large urban hubs, as we're seeing in Italy today, and where the large cities – though appealing in their skills and ideas – in reality take away value as a result of their structural incapacity to accommodate the manufacturing and production entities that allow the urban and social tapestries to develop virtuous cycles of reciprocal self-fuelling. We need to accustom ourselves to viewing large cities as a great exchange market for goods and services (a medieval vision, if you like, but still an accurate one), while manufacturing needs a completely different territorial and social system of much smaller dimensions.

Big cities benefit financial capital, they benefit large-scale distributors of goods and services that become able to rely on a large, concentrated market with lower distribution costs. The territorial management of a large city is complicated and costly, meaning that medium-sized countries struggle to support more than one.

With reference to the German model, we notice that the urbanisation trends are completely different.

Going back to the new settlement model, I believe that we must set ourselves the general objective of establishing a system that makes it pleasurable to live in this area.

Adam Smith said that in a market economy, wealth is flow and not stock: it is not the assets but the capacity to generate wealth in a coherent way and with a certain cultural trajectory. We cannot produce and sell things that do not correspond with our model of life, otherwise the risk is that the entire production system limits itself to being a contractor on behalf of somebody else, without truly being able to complete create new added value. In Italy, this prospect would have no future.

The challenge is therefore to abandon the wait-and-see strategy of "let's equip ourselves and set off" and instead begin to do "something", knowing that "doing" more today than we did tomorrow requires general coherence between the economy, society and the land. This can only come from politics, in the form of a vision of a system.

In this context, the issue of investing in research can also be traced back to a political issue, in this case industrial politics. The capitalisation of R&D efforts, in any economic and social system, depends on the presence of companies that as a result of their dimensions, organisation and capacity can give a production- and market-based perspective to these efforts. It is this that generates the need to carry out research,

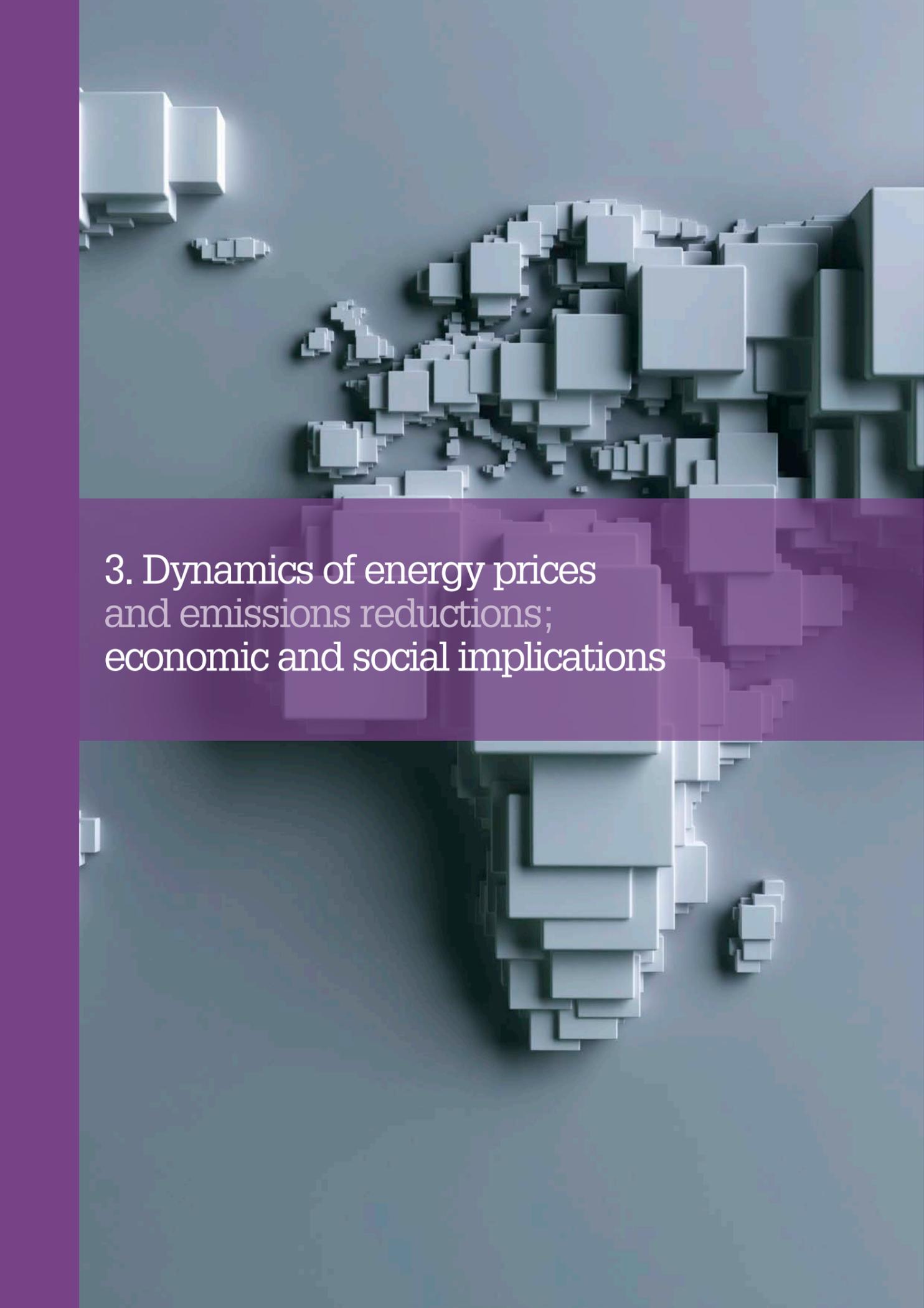
starting in places where the production structure is able to cultivate new development opportunities and sustain the growth of production companies, who will be able to take full advantage of the base and advanced research capacities of our system.

In this our cultural heritage helps us: Italians have long been global pioneers in various fields of research, stretching back to the times of Voltaire who, despite the chauvinism, always argued that we were ahead of the French and the English in all respects. And this was just 200 years ago.

History confirms this across many specific sectors: in pharmaceuticals, the first work on penicillin was Italian, as was the first personal computer, and there was Marconi's research too. The problem we have always come up against is the need for companies capable of transforming the results of research into goods and services and thus into production activities with high added value, as our international competitors have been able to do.

A system policy thus becomes an essential element if we are to bring together all of the proposals put forward during this fruitful day of analysis and reflection, in order to place them within a general project to transform our country and our production system to the advantage of the national collective.

This is the only direction we can consider adopting as we look to map out a sustainable route towards the future.



3. Dynamics of energy prices and emissions reductions; economic and social implications

1 3.1 Introduction to a phase of instability

Alessandro Lanza

CMCC and IEFE Bocconi University

In order to understand the role of the dynamics of the price of oil in climate change, we must start by stating that Italy has indeed hit the targets set by the Kyoto Protocol in regard to reducing greenhouse gas emissions.

When the Protocol was adopted, in December 1997, many analysts believed that the parties had set an overly ambitious target, considering our country's high energy-efficiency level. I was one such analyst and my opinion remains unchanged. The target was indeed hit, seemingly proving the less optimistic analyses wrong, but it is worth remembering the effects of the international crisis, which stunted our economic growth and, as a result, reduced the demand for energy and thus decreased emissions. To put it simply, in real terms our GDP in 2009 was equal to that of 1995. There is no better illustration of the crisis we have experienced.

Between 2008 and 2012, total emissions from our country decreased by 7%. In this particular case – considering all aspects of the situation – we can say that the economic crisis made a substantial contribution to achieving an otherwise unachievable target.

If we wish to view the world in a very optimistic light, it is possible for us to interpret these facts as the result of a further increase in energy efficiency, and indeed this is a part of the explanation.

However, a substantial fall in the price of oil did occur and this should not be overlooked.

As is often the case, the press – and as a result public opinion – tends to report these recent events as if they are the worst on record: this is not the case. In 2014, the price of oil decreased by 108US\$/barrel to 62US\$/barrel in the space of a year. A substantial decrease, yes, but for the sake of example it is worth pointing out that in 2008 the price of oil doubled in just six months.

These different trends demonstrated how it is perennially impossible to make predications in regard to the price of oil. In 2008, Goldman Sachs presented a scenario in which it predicted that the price of oil would rise to 200US\$/barrel by 2010. This prediction – like so many others – never came to fruition.

We are yet to understand – within this scenario – who will win and who will lose as a result of low prices.

Consumer/importer countries benefit, none more so than China and India. Europe benefits less because tax represents a substantial barrier between the initial price of energy and the price to the consumer.

The low levels of oil prices represent a serious problem for energy-producing countries too. And not just the well-known ones, such as Saudi Arabia, but also those less in the spotlight, such as Venezuela and Russia. A hypothetical Russian crisis, triggered by low oil prices, could destabilise the entire area and I don't believe such a scenario to be desirable for any member of the international community. Therefore, though I am well aware of the impossibility of predictions, I believe that the price will increase again in the medium term.

A scenario of low oil prices obviously damages countries like the United States, which produces energy such as shale gas and non-conventional oil, as these are only competitive if the price of crude oil is sufficiently high. It is no coincidence that we are registering the first natural gas plant closures.

Ultimately the oil companies suffer, especially those that do not belong to oil-producing companies as they have for years been experiencing difficulties linked to the margins of refinement being reduced to the bare minimum.

The issue of such a low price of oil – especially if it stays low for a while – brings European attention back onto the question of a carbon tax. It is a widely held worry that low energy prices may trigger unexpected increases in consumption and thus drive up emissions. An increase in the price of fossil fuels linked to their carbon content would not be a bad move, regardless of the fact that this has been debated on a national and European level for many years without any notable results.

2 3.2 The close coupling between Energy and Climate

Fatih Birol
Executive Director IEA

Good evening everyone.

Unfortunately my commitments in Paris have prevented me from being in the beautiful city of Rome. Sadly, we're not here to speak of Rome's wonders, but of energy trends and their impact on climate change.

Climate change represents the biggest challenge facing humanity and energy plays a key role in the climate. More than 80% of the emissions that cause climate change are linked to the energy sector. This means that if we do not resolve the problem of the energy sector, we have no chance of finding a solution to the problem of climate change. If we analyse energy trends (as in the IEA's Energy Outlook), we can see that global emissions are in line with a temperature increase of 3.6°C by 2100. This scenario is dramatically higher than the universally recognised target of 2°C. A world hotter by 3.6°C is not a world where it is sufficient to simply take off your jacket to adapt to the change. I know there are many experts here who know the negative implications much better than I do, but they truly are catastrophic implications.

Over the last two months, we have listened to very important political declarations regarding the Paris 2015 Conference. And none more so than the European Union, a leading party in the fight against climate change which has announced an emission-reduction target of 40%. This was followed by the United States and China, with presidents Xi Jinping and Obama signing an historic agreement against climate change. Powerful declarations from Mexico and other countries followed. So we have reason to feel optimistic ahead of Paris.

Another factor which makes me feel optimistic is the figures recorded last year (2014) in terms of CO₂ emissions. In 2014, for the first time in the last 40 years, there was no increase in global CO₂ emissions. Historically speaking, emissions have stabilised on two previous occasions, but in both instances this was caused by global economic recession. Last year, the global economy grew, but carbon emissions remained constant (for the first time ever, economic growth was not matched by increased emissions). There are many reasons for this, including: the drive towards renewable energy sources, the transition from coal to gas or other low-carbon technologies and a more efficient use of energy.

This is a positive moment, given the stabilisation of global emissions and the political impulse provided by Europe, the USA and China.

In June 2015, in order to make a constructive contribution to Paris, the IEA will release a complete report on the role of the energy sector in the mitigation of climate change. In other words, it will outline what needs to be done if we are to reach a legally binding, international agreement in Paris, starting from the energy sector and the necessary steps needed in sustainable energy investment. The report – which will contain out observations – will be published on 15 June.

In that regard, I would also like to mention the ministerial meeting of the International Energy Agency, set to take place in November. It will be presided over by United States Secretary of Energy Ernie Moniz and see participation from the 29 other Energy ministers of the IAE member states as well as ministers from China, India, Brazil and other country. There will also be around 30 CEOs from important energy industries. We will be discussing energy-related issues and you can be sure that climate change will be top of the agenda. I hope our meeting can constitute a strong signal from the energy sector to the Paris COP a few weeks later.

In this context, I would like to express my appreciation to the Italian government for its active contribution to the IEA's activities.

I can't wait to host the Italian Minister for Energy at our meeting in November and see the Italian authorities in Paris.

Thank you all.

3

3.3 Is there an “optimal” price for energy?

Carlo Bagnasco
CEO Energetic Source

I would like to thank President Francesco Rutelli for the invitation: I am honoured and pleased to support this prestigious meeting. Drawing the attention of public opinion to these issues is of the essence, in order to prevent the upcoming Paris Climate Conference from missing the chance to finalise a stable climate agreement. Paris will host the 21st Global Conference on these issues, which several commentators, including Prof. Fatih Birol, in attendance today, have described as “the last chance”. It is very appropriate, therefore, to discuss these topics now, in an effort to raise awareness and influence governments, and many other stakeholders as well.

All of us, in our daily actions, as entrepreneurs or managers, or even as ordinary citizens, must be aware of the extent to which environmental issues concern us directly.

This is why we, as Energetic Source, pay constant attention to the environment in our business decisions. Our job is to sell energy and gas, and we seek to do this by offering the most incentives for energy from renewable sources. We purchase energy from all over Europe, but we always prefer to buy from partners who generate from clean sources. Additionally, we are working to engage in generation, and for this purpose we are conducting negotiations with Italian authorities for a €600 million investment for natural gas storage in Basilicata, for which we hope to see a positive outcome within a reasonable time frame.

We are aware of living in a time of geopolitical uncertainty, which has far-reaching effects on energy price dynamics. The most visible of these is arguably related to oil, for which the media are constantly providing us with updates, and of which even the less knowledgeable public now is or appears to be aware when filling up their tanks or reading utility bills. As we all know, things are actually much more complex. Prices fluctuate because of a variety of interests that sometimes converge and sometimes conflict.

Let us try for a moment to simplify, in order to get to the real crux of the matter under discussion today, the true objective we all want to achieve: emission reduction.

Clearly, the only way to achieve it is to reduce consumption resulting from the use of fossil fuels.

On the other hand, we cannot stop the world.

How can we ask the US to agree to a binding emission reduction, although President Obama has made significant steps forward in this respect – just when the country is experiencing a powerful economic recovery after the difficult years of the financial crisis?

How can we ask China, with any reasonable hope of success, to put into question its model of growth and development, which has allowed to become the second largest world power?

The only way is to encourage these countries to move towards the use of renewable sources by making them increasingly more affordable to use through the

creation of a single energy market, first European, then transatlantic and subsequently perhaps even global, in order to achieve important economies of scale that will make investments cost effective, with a positive impact on global emissions. While ambitious, the goal is not unattainable.

Let's start from Europe, which has already made great strides in the process of reducing emissions into the atmosphere, and push to complete the “internal energy market” project that should have been accomplished by 2014.

Then, let's take action to ensure that Europe speaks with a single voice and conducts TTIP (Transatlantic Trade Investment Partnership) negotiations with the United States to achieve a level playing field in the energy business.

Let us now see, in concrete terms, what are our 4 proposals from the perspective of an energy producer or distributor:

1. First, we should analyse the positive effects of the economic levers proposed during the Marrakech COP7 (started with COP3, known as the Kyoto Protocol) where flexible mechanisms were first introduced, such as JI (JOINT IMPLEMENTATION), which allows companies of the Annex 1 countries to execute projects aimed at obtaining credits from greenhouse gas emission reduction (ERU: emission reduction units), and CDM (CLEAN DEVELOPMENT MECHANISM), which allows Annex 1 countries to obtain CER (certified emission reduction) credits from clean renewable energy projects and energy efficiency). The idea behind these mechanisms was to recognize certificates (ERU for JI projects and CER for CDM), for investments in “clean projects”. Without going into the technical details of their operation – especially because these mechanisms are no longer in force (JI) or will be completed within the end of this phase (late April 2015) – the idea is to recognize investments in “clean projects”, carefully analyzing where these are executed. In my opinion, one of the mistakes made by the EU with the old mechanisms was to recognize credits for projects that were executed in certain countries, e.g. China, which, at the global level, did not implement policies that had any actual effects on the overall system. Our first proposal is to pursue the objective of promoting projects on renewable sources and energy efficiency, but paying particular attention to the type of beneficiary projects and their location in countries that meet, first and foremost, the global emission reduction policies.

2. Improvements to the MSR (Market Stability Reserve) proposed by the Barroso Commission in January 2014.

In summary, the MSR aims to monitor the number of allowances in the market. Therefore, it is the EU that controls the supply of allowances. From the economic point of view, this means putting a cap and a floor to the price of EUA allowances (the contract that grants the right to emit one tonne of CO₂). The fixing of cap/floor prices may produce the following effects, either positive or negative:

- a. Reduction of price volatility, hence of trading and liquidity;
- b. Cap/floor prices may not promote energy efficiency, for example by favouring the generation of energy from non-renewable sources.

In this case we recommend not setting caps and floors, for the reasons I have just explained.

3. Allocation of “backloaded” allowances to provision the innovation fund.

During the Parliament's last Environment Committee of 24 February 2015, the following proposals were made:

- a. Allocate backloading allowances to the Market Stability Reserve (MSR);
- b. Make the MSR operational as of 2018;
- c. Do not auction any allowances that are unallocated at the end of the period (either remaining from the new entrants reserve or unallocated due to terminations and significant reductions in plant capacity).

Our proposal is to allocate all allowances to the “innovation fund” to finance low-carbon investments in the industry. In this regard, it should be noted that the proposal already contains within itself a positive element, in that it rejects the initial idea of reallocating “backloaded” allowances in a subsequent phase (the quantities involved were around 300 million tonnes of allowances in 2019 and 600 in 2020).

4. The last point I would like to discuss is a question I would like to ask all of you: Why not link the supply of allowances on the market to the demand?

Both the European MSR (Market Stability Reserve) and the PNA (PIANO NAZIONALE DI ALLOCAZIONE: National Allocation Plan) are based on a rigid supply concept (defined and not modifiable) of the allowances issued on the market.

What we are proposing is: why not “link” the supply to the demand, for example by setting the supply of allowances in Year T as a function of demand in Year T-1? This is based on general market pricing principles where the price is formed as the point where supply meets demand. Of course, I expect supply to be always lower than demand in order to achieve the objective pursued by the next COP23 (Paris).

These are our proposals: they can be implemented immediately and their positive impact is certain. In conclusion, we at Energetic Source are not afraid of global competition and we are ready to play our part, both in Italy and, in perspective, in Europe, in order to uphold our “responsible sale” approach in the energy market.

As our new tag line states: “We Are Energy.”

4 3.4 The Climate Equity

Vittorio Prodi

Former Member of European Parliament

Firstly, I would like to make a premise: the atmosphere truly is a global common good, and should be managed as such.

Industrialized countries have exceeded in climate-altering emissions (mainly, but not only CO₂) and are responsible for the largest part of the stock of this gas that exceeds the 270ppm limit, characteristic of the pre-industrial situation (we are now close to exceeding 400 ppm).

This is why developing countries have insisted on the concept of a “Common, but differentiated responsibility”, which however has not yet found a consensus as to the weight of this principle in the management of global warming mitigation.

I have always thought that justice and equity are the underlying principles of any solution, precisely because we are aware that the atmosphere is a common good.

Emissions per capita per year currently stand at approximately 7 tonnes; by 2050, we should reduce them to 1 tonne per person per year, a level that can be considered sustainable. At this level, each one of the 7 billion inhabitants of the Earth is entitled to a free emission permit. Each excess emission must be paid within the “cap and trade” mechanism under the Kyoto Protocol, which should use the market to “price” greenhouse emissions. Many African countries have emissions below this limit and could offer their unused permits on the market.

The sale of these permits could generate resources that are severely needed for adaptation to climate change (e.g. to combat desertification), which is a major cause of displacement of the hundreds of people (climate refugees) that we see arriving every day in the ports of the south of our continent.

According to the differentiation principle, therefore, Americans should pay approximately 19 tonnes of CO₂ out of the 20 emitted per person per year. In Italy, we should pay about 7 out of 8.

Other resources could be allocated to countries with large forests, which, if kept intact, act as the planet’s “lungs”: they provide an essential service that should be adequately compensated.

Instead, it was the European Commission itself that for many years advocated the free distribution of almost 50% of emission permits. This is certainly not the way to ensure the functionality of a market.

In any case, all uses of fossil fuels, not just the energy generating ones, should be subject to the rules governing greenhouse gases at the source, i.e. at the time of being marketed.

It seems to me that for Paris we have given up on global rules, preferring to settle for: Intended National Commitments, and hoping that they will converge in the negotiations.

However, this would result in a loss of the global dimension and of the possibility of collecting resources specifically linked to adaptation to climate change. If we abandon the Kyoto Protocol, we should implement a “carbon tax” with all the reservations relating to border equalisation that this would imply.

Lastly, I would like to recall the intertwining of interests that subsidize and promote the use of fossil fuels (see “Capital vs. Climate” by Naomi Klein) One truly global achievement is satellite observation of the Earth (in particular the Copernicus constellation, commissioned by the European Union), which will provide a flow of freely available images and data that will prove decisive for the management of our planet.



4. The political basis of an international climate agreement

1 4.1 Speech by Paolo Gentiloni Minister for Foreign Affairs and International Cooperation

Distinguished Speakers,
Members of Parliament,
Members of the Diplomatic Corps,
Ladies and gentlemen,

The topic we are discussing today is certainly complex and rife with insights, because of its implications in areas concerning all the sectors that make up our society.

As Ministry of Foreign Affairs of a country with a strong industrial base like Italy, we are deeply aware of the responsibility of having to present or defend, along with other State Administrations, our country's position on this issue in a number of international forums, from the European Union to the United Nations. Even more acutely so, when we know that the domestic implementation of international climate Conventions involves a significant impact on us and our lives.

We believe that global warming, for example, needs to be addressed with effective, feasible and sustainable proposals and solutions. The global scientific community now has the knowledge to make this possible.

To this end, it is essential for Governments to have the political determination to assume international legal obligations, and subsequently to align their countries' internal systems and social behaviours with those obligations.

We know that this will be the real challenge that we will have to face in a few months in Paris, during the 21st Conference of the Parties to the UN Convention on Climate Change. We are going to Paris with the aim to reach a historic Agreement, after 20 years of negotiations and mediation by the United Nations.

In Paris, we will need to create an environment of mutual trust between States, if we seriously want the commitment of all of us to lead to a virtuous situation of greenhouse gas emission reduction and to achieve the goal of keeping the global temperature rise below 2 degrees centigrade.

The heart of the negotiations, as we know, is the presentation, by the States parties to the United Nations Convention, of the national contributions - i.e. the programmes, projects and mitigation policies - that each country intends to implement internally.

Only when the overall picture of these national contributions is complete will it be possible to determine the essence of the new global Agreement. It depends on us, our Parliaments and our Governments.

The European Union presented its national contribution, on behalf of the 28 Member States, in March 2015, in full compliance with the time limit set by the United Nations. In this document the EU agreed to the binding objective to reduce domestic greenhouse gas emissions to at least 40% below 1990 levels by 2030.

In this way, Europe intends to convey to the international community as a whole a message of commitment, determination and leadership.

The EU, which has unified its Climate and Energy policies, is also strongly pressing for sustainable energy as a virtuous driver to reduce emissions without compromising economic growth.

The recent approval of the package of measures that make up the initiative called Energy Union goes precisely in this direction: along with energy security, strong focus is also placed on energy efficiency, the development of renewable energy sources in all sectors, technological innovation and research.

Another EU initiative, perhaps not as well known but very significant, is the Climate Diplomacy action plan, whereby the Commission and the Member States work together to ensure the success of the Paris Conference.

The “EU climate diplomacy” acts by:

- urging other parties to the Convention, in particular the G20, to submit their national contributions in a timely manner;
- creating synergies with the more receptive emerging countries to increase pressure on major CO2 emitters;
- responding to the expectations of developing countries on credibility and predictability of climate finance.

Italy is strongly committed to promoting renewable energy sources in all international forums. In addition to benefiting our most innovative businesses, and therefore our economy, their use is key to the policy that aims to reduce harmful and polluting substances in manufacturing and energy processes.

There are areas of our planet (sub-Saharan Africa, to mention but one) where, if the same energy efficiency and sustainable energy measures that the Western world is now trying to advance were to be adopted from now on, the harmful effects of pollution would be greatly reduced. Virtuous examples of sustainable and positive behaviours might even become established.

Alone, these countries cannot succeed: it is up to us to give them strong support.

Our commitment to the more fragile countries must certainly take into account mitigating actions, but should forget to support projects for the containment of problems posed by climate changes that are already underway.

Unfortunately, as detailed studies have shown, still too little is being done to achieve the objective of limiting the temperature rise to less than two degrees; nor, for that matter, can the efforts made in the national contributions, in themselves, prevent completely the consequences of global warming.

This is why I would like to thank the Centre for a Sustainable Future for raising the issue from such an innovative, present-day, specific and urgent perspective.

The proposals presented today are concrete, effective and targeted contributions, which - while remaining within the necessary UN negotiating framework - attempt to reach further by accompanying it with initiatives aimed to achieve the common goal.

For example, it is being suggested to effectively reduce food waste by half, with a potential saving of 250 million tonnes of CO2 per year, in Europe alone. This issue is also covered in the Expo Milano 2015 Charter, which reaffirms the Italian Government’s very appropriate choice to use Expo Milano as a container of best practices for the planet’s sustainable development.

This is the value and the meaning of today’s Meeting: through the description of these concrete proposals, we are offered the opportunity to reason about a variety of themes that can be developed alongside climate change negotiations.

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In a “political culture of sustainability”, any human activity that aims to meet the needs of the present generation should not compromise but rather strengthen the ability of future generations to determine and satisfy their need better than we have done so far.

As Mikhail Gorbachev pointed out a few decades ago:

“When future generations judge those who came before them on environmental issues, they may conclude ‘they did not know’: let us not go down in history as the generation that knew, but didn’t care.”

For our part, we are committed to turning this culture into an inspiration, a basis and a priority for our foreign policy, both as part of the UN negotiations, for the effective implementation of the international community’s climate change objectives, and “beyond” and “after” the Paris Agreement.

Thank you.

2 4.2 Speech by Gian Luca Galletti Minister for Foreign Affairs and International Cooperation

I would like to thank the President of the Chamber for hosting us and Francesco Rutelli and the Centre for a Sustainable Future for having organised this meeting. I hope it can begin to focus Italian public opinion on the Paris conference.

It has been said that Paris is a strategic, decisive, unmissable conference, and for once these adjectives are not excessive. In Paris, the international community will play perhaps the last card we have in our hand to efficiently tackle the phenomenon of climate change with an effective decision taken by all countries.

The history of these conferences – COPs, as they are known, denoting Conferences of the signatory Parties of the United Nations Framework Convention on Climate Change of 1992 – does not make for cheerful reading.

With the exception of COP3, which was held in Kyoto in 1997 and gives its name to the famous Protocol, there have been more failures and successes (none of us have forgotten the disappointment of the Copenhagen Summit), more expectations than results.

Yet COP21 will take place in Paris under different conditions to past summits. In December 2014, at COP20 in Lima, we outlined a journey that should lead to the long-awaited agreement. A journey that has already begun, and the time between now and December will see a packed schedule of events designed to ensure that a global agreement will be sealed in the French capital.

The Lima understanding is the result of the knowledge, now held by all countries, that we can no longer delay a shared solution on climate change. It was no coincidence that just before the conference in Peru, the two countries that emit most greenhouse gases in the world, China and the United States, publically announced their commitment to reducing emissions.

For those not familiar with the situation, neither China nor the United States – for different reasons – were bound to launch an emissions-reduction programme by the Kyoto Protocol.

This was the case for the United States because they never ratified the Protocol, while China was considered a developing country and thus was not bound to reduce emissions.

These two countries alone emit almost half of the CO₂ produced by human ac-

tivity around the world. Without them, any agreement would risk emulating Kyoto in having high cultural value, yet being ineffective at reducing global emissions. Indeed, since the Protocol was signed and in while it remained in force (2008-2012), global emissions actually increased.

Until 2013, at least.

This is why, in order to make the possibility of an agreement more realistic, we must acknowledge a fact that, despite its historic significance, has so far not been properly underlined. The International Energy Agency has certified that in 2014, the increase in greenhouse gas emissions ceased. This has already happened a couple of times in the past, but 2014 was particularly historic given that emissions did not increase despite the fact that global GDP grew by 2.6%.

In the past, occasional reductions in the growth of greenhouse gas emissions coincided with periods of serious economic crisis. This confirmed the idea that development – the increase in global wellbeing – was linked to oil. And that a fall in emissions was linked to recession and to the impoverishment of the global community.

The 2014 fall showed that this was not the case and that development was possible without increasing the amount of CO₂ in the atmosphere. Quite simply, it was the first year the planet demonstrated sustainable development, increasing its global GDP without increasing greenhouse gas emissions.

For the community of scientists and politicians working on the environment, it was an historic achievement. It had always been said that in order to interrupt the trend of global warming, we had to break the link between GDP growth and increasing emissions. This has happened. We have received the first sign – though perhaps not the definitive one. We will see what the end-of-year data for 2015 looks like, given the fall in oil prices.

Having said that, we are certainly at a turning point for the global economy.

I've always believed that referring to these talks as climate negotiations, as we commonly do, is reductive. What we discuss at the COPs, and the agreement we hope to sign in Paris in December, is not just an international commitment to limit greenhouse gases, but rather the definition of a new model of global development, one that puts an end to industry's dependence on carbon and directs development – and thus energy production – towards different, clean sources.

In reality, Paris will see us discuss a new industrial revolution that, after two centuries of the global economy being “powered by coal and oil”, blazes a different, sustainable trail for the third millennium. This is the reason we are about to hold COP21 – the reason we've been debating how to tackle greenhouse gases for 21 years. The real consequence of climate change is a radical shift in our economic system and the way we produce energy, which is the key component of development.

While these are the universal themes of the challenge, there are then a series of considerations pertaining to geographical and political areas and national circumstances, leading naturally to a complication of the issue.

The foremost of these factors is the issue of inequalities between rich countries and poor countries. Costs can also vary according to the dependence of the various economies on oil and the access each country has to fossil fuels, while the effects of global warming can also vary. For the majority of countries, global warming has negative effects, yet for nations such as Russia and Canada it can mean the recovery of large areas for agricultural and thus production purposes, the opening of polar routes and other advantages. The medieval history of Greenland illustrates how, in

other periods of history, global warming brought with it famine and disaster in some areas, yet benefits in others.

I believe that the decisive impulse, the true acceleration towards a possible agreement, has been provided by the Earth itself.

For many years, climate change has caused alarm for scientists, yet in reality has lacked tangible consequences for the majority of the planet's population. Certainly, the fact that the Maldivian government held an underwater meeting a few years ago to warn of the islands' fate caused a stir, but ultimately the problem seemed to pose little threat to our lives. Yet in recent years, things have changed – things are changing. We have realised that the problem doesn't just mean polar bears having fewer icepacks in the North Pole or the sea rising by a few centimetres. Climate change has triggered a series of extreme events, the violence and regularity of which has never been seen before. The American public has experienced – and continues to experience – devastating hurricanes. It has counted the victims of our climate in the New Orleans tragedy. The same goes for Asia, South America and our very own Europe and Italy, where floods and landslides have intensified, causing enormous damage and claiming an intolerable number of lives.

As well as experiencing its share of devastating meteorological events, China has seen pollution leave its cities uninhabitable. The government has realised that it must contain pollution and has thus launched a huge programme of investment in renewable energy worth over \$80m in 2014 alone.

Pope Francis, who will dedicate the next Encyclical to the safeguarding of creation, has said that we must respect nature or nature will destroy us.

The Earth assumed the tragic task of making every one of its inhabitants understand just what climate change means. And what's happening now is merely a gentle warning of what could come to pass if we do not intervene immediately and effectively.

But in Paris the delegations of nearly 200 countries will not discuss this. The negotiations will be technical and political. Thus the proposals put forward by the Foundation for a Sustainable Future on the contribution Italy can make to the topics up for discussion by the delegations are most welcome.

Recently, at the headquarters of the Latvian Presidency of the Council of the European Union in Riga, we summarised the situation.

First of all, we agreed on a political consideration: that the success of the Paris Conference is essential for the climate and other concerns. Failure would be extremely damaging for the credibility of multilateral negotiation processes, which are in progress on many issues, and we know how much today's international situation necessitates cohesion and capacity on operative agreements.

At the European Union we have emphasised the need for intense effort in the months leading up to the conference. We must not make the mistake of believing that an agreement will be reached merely because we cannot fail. All the conditions for a result are there, but success is not a foregone conclusion. We must start working now to identify possible points in common, making the most of all occasions – official and non-official – to continue the dialogue on the substance of the agreement and look for possible compromises.

The only compromise we cannot make is that of establishing a non-ambitious agreement which is unable to keep us en route to achieving the safe-harbour threshold of 2°C, and for this we need everybody to contribute.

We in the European Union have done our homework and presented our “national contribution” in the definitive Lima Roadmap. We are confident that the other key figures in the negotiations are doing the same thing and will be ready to unveil their contribution to the Paris agreement as soon as possible. This is a crucial phase. National contributions are, in effect, the official definition of the commitment each country brings to the conference in terms of emissions reductions and also economic contributions. This national contribution should be backed up by the necessary information on its quantifiable nature and suitability to reaching an appropriate percentage of global emissions.

Thus far not many national contributions have been presented, yet the commitment was to deliver them by March. Europe and the individual countries of the European Union will work to monitor this issue because what counts is not just the quality of the contributions, but also the quantity of contributions delivered, given that we are discussing a global agreement that applies to us all.

The goal that Europe intends to pursue is the establishment of an agreement that is long-lasting and credible in the long-term, yet also flexible and able to adapt to evolving circumstances. An agreement that has clear, robust, transparent and common rules that start from a legal symmetry between the commitments of the various countries and are founded on reciprocal efforts.

We are aware of the high expectations the global community has for the Paris summit.

We must therefore ensure that even the most distant, non-technical players and the public opinion of all countries grasp the fact that the stakes are high and that the differences and disagreements are numerous, yet that the result we aim to achieve is something that has never been done before and has the objective of creating a framework for the start of a paradigm shift, of an economic and social transformation without precedent.

I mentioned a new industrial revolution earlier. This is the concept that should provide the direction for the new, inevitably complex agreement. The nature of the change to the development model we want to bring about cannot be summed up in a simple formula or slogan.

This is a momentous turning point, where humanity decides to invest in its future – to build a different, better tomorrow.

