

Environmental health policy: A priority for a global health renaissance

by [Éloi Laurent](#), Fabio Battaglia, Alessandro Galli, Giorgia Dalla

Libera Marchiori, Raluca Munteanu

On 21 May, the Italian Presidency of the G20 together with the European Commission will co-host the World Health Summit in Rome. A few days later, the World Health Organisation will hold its annual meeting in Geneva. Both events will obviously focus on the Covid tragedy and on reforms that could prevent similar disasters in the future. “The world needs a new beginning in health policy. And our health renaissance starts in Rome,” said European Commission President Ursula von der Leyen on 6 May. We share this hope and want to see it succeed.

As members of civil society, we have been called upon to contribute to the collective discussion that will lead to the drafting of the “Rome Declaration”. Based on a [report we are releasing today as part of the Well-being Economy Alliance](#) (WeALL), we believe that the notion of an environmental health policy should be at the heart of the Rome Declaration and,

beyond that, it should inspire the overhaul of health policy at all levels of government. In essence, we are calling on the delegates at these two crucial summits to recognise the fruitful interdependencies between the environment, health and the economy.

The key principle is to make the link between health and the environment the core of global health and move from a cost-benefit logic to co-benefit policies. Our inability to respond effectively to the twin crises hitting health and the environment stems in large part from our perception of the costs that resolute action would have for the "economy". But we are the economy, and the economy forms only part of the true source of our prosperity, which is social cooperation. The health-environment transition does of course have an economic cost, but it is clearly lower than the cost of *not* making the transition. The limits of the monetarisation of life are becoming more and more apparent, and every day it is becoming clearer that the supposed trade-offs between health, the environment and the economy are wrong-headed and counter-productive. Conversely, the gains in terms of health, jobs, social cohesion and justice from co-benefit policies are considerable. Health systems are the strategic institutions in this reform, so long as much greater emphasis is placed on prevention, but other areas of the transition are also involved: food

production and consumption, energy systems, social policy (particularly the fight against inequality and social isolation) and educational policy.

To take simply the example of energy, it is abundantly clear that today's global energy system, based 80% on fossil fuels, makes no sense from the point of view of humanity's well-being, as it is simultaneously destroying current and future health. Air pollution resulting from the use of fossil fuels is playing a grave role in the health vulnerability of Europeans facing Covid-19 (responsible for 17% of deaths according to [some estimates](#)); yet reducing air pollution in Europe's cities would bring a key health co-benefit: it would reduce the risk both of co-morbidity in the face of future environmental shocks such as respiratory diseases but also of heatwaves, which are becoming increasingly frequent and intense on the continent. When all the co-benefits are taken into account, first and foremost the reduction of morbidity and mortality linked to air pollution (which, according to recent studies, are much higher than previous estimates, with [100,000 premature deaths in France](#) each year), the switch to renewable energies would lead to savings of around fifteen times the cost of their implementation.

Beyond these areas we have identified, there are many others where health, the environment and the economy are mutually reinforcing. Together they form a foundation on which to erect

policies that
aim for the full health of a living planet. As the Rome Summit
and the WHO
Assembly approach, we therefore want to challenge the
participants with two
simple questions: What if the best economic policy were a
genuine health
policy? What if the best health policy were
a genuine environmental policy? As the countries of Europe
know very well,
crises are the cradle of new worldviews, the catalysts of new
approaches that
can gain traction. Rome was not built in a day, but the co-
benefit approach can
light the way to a renaissance in health.

The imperative of sustainability economic, social, environmental

OFCE[\[1\]](#), ECLM[\[2\]](#), IMK[\[3\]](#), AKW[\[4\]](#)

It was during the climax of the so-called Eurozone sovereign debt crisis that we engaged into the independent Annual Growth Survey – [the project](#) was first discussed at the end of the year 2011 and the [first report](#) was published in November 2011. Our aim, in collaboration with the [S&D group](#) at the European Parliament, has been to challenge and question the European Commission contribution to the European Semester, and to push it toward a more realistic macroeconomic policy, that is to say less focused on the short term reduction of public debt

and more aware of the social consequences of the crisis and the austerity bias. For 7 years, we argued against a brutal austerity failing to deliver public debt control, we warned against the catastrophic risk of deflation. We also alerted on the social consequences of the deadly combination of economic crisis, increased labor market flexibility and austerity on inequalities, especially at the lower part of the income distribution. We cannot claim to have changed alone the policies of the Union, but we acknowledge some influence, although insufficient and too late to prevent the scars let by the crisis.

Today, there is a need to take this initiative a major step forward. The adoption of the [UNSDGs](#) calls for a new approach to economic governance and to economic growth. The measurement of economic performance needs to evolve into the measurement of well-being on all three accounts of sustainable development – economic, social and environmental. A broad range of policies have to be mobilized coherently to this effect, which must move fiscal policy from a dominant to an enabling and supportive role. Moreover, those policies need to be anchored on a consistent and inclusive long-term strategy, and should be monitored closely to check that they deliver sustainability.

So far, the EU has not properly embraced this agenda, and the still prevailing European Semester process is an inadequate process to lead the EU towards achieving the UNSDGs. In the same way as the iAGS challenged the dominant orthodoxy in the macroeconomic field, the [iASES 2019 – independent Annual Sustainable Economy Survey](#), the new name of the iAGS – is our contribution to support a strategy towards sustainability and show the way.

The iASES 2019 scrutinizes the general outlook of the EU economy. The coming slowdown largely results from the gradual attenuation of the post-Great Recession recovery momentum and the convergence of growth rates towards a lower potential

growth path. The slowdown of growth coincides with a revival of political turmoil – *Brexit*, Italy's public finances, the trade war and turbulences in some emerging countries. [The upturn will come to an end at some point, and the euro area is not yet prepared for that, as imbalances persist and the institutional framework remains incomplete\[5\]](#). The euro area has moved into a large trade surplus, which may not be sustainable. Nominal convergence remains an important issue that should be addressed by political willingness to coordinate wage development more actively, beginning with surplus countries. Moreover, the incomplete adoption of a Banking Union may be insufficient to ensure banking stability in case of adverse shocks. The ECB could have to come to the rescue with extended unconventional policies, complemented with automatic stabilisation measures working across borders within EMU.

The social situation has slightly improved in the EU since the worse of the crisis and, on average, the unemployment rates across European countries are back at their pre-crisis levels. However, differences across countries and sections of the population are still huge. [Policy makers need to be aware of possible trade-offs and synergies between economic, social and environmental goals in general and the Sustainable Development Goals \(SDGs\) in particular\[6\]](#). In line with the SDGs and intended goals of the European Pillar of Social rights iASES aims at promoting policies – expanding social investments, pro-active industrial policies, reducing working time, increasing collective bargaining to limit primary formation of inequalities – that address these goals and overcome the direct and indirect negative consequences of unemployment.

Climate change is arguably the most serious challenge that we collectively face. Computing carbon budgets can be useful to warn policy-makers about the effort to be delivered in order to put society on the road to environmental sustainability. The iASES evaluates the “climate debt” which is the amount of

money that will have to be invested or paid by countries for them not to exceed their carbon budget, leading to three key policy insights. There are few years left for major European countries before exhausting their carbon budget under the +2°C target. [Consequently, the carbon debt should be considered as one of the major issues of the decades to come since in the baseline scenario it represents about 50% of the EU GDP to stay below +2°C\[7\]](#). Framing the climate question in the words of debt is deliberate as the concept of excessive deficit applies today totally to the procrastination we demonstrate there.

[\[1\]](#) Directed by Xavier Timbeau with Guillaume Allègre, Christophe Blot, Jérôme Creel, Magali Dauvin, Bruno Ducoudré, Adeline Gueret, Lorenzo Kaaks, Paul Malliet, Hélène Périvier, Raul Sampognaro, Aurélien Saussay, Xavier Timbeau.

[\[2\]](#) Jon Nielsen, Andreas Gorud Christiansen.

[\[3\]](#) Peter Hohlfeld, Andrew Watt.

[\[4\]](#) Michael Ertl, Georg Feigl, Pia Kranawetter, Markus Marterbauer, Sepp Zuckerstätter.

[\[5\]](#) See « [Some Challenges Ahead for the EU](#) », *OFCE Policy Brief*, n°49, February 5, 2019.

[\[6\]](#) See « [Social Sustainability: From SDGs to Policies](#) », *OFCE Policy Brief*, n° 50, February 5, 2019.

[\[7\]](#) See “[An explorative evaluation of climate debt](#)”, *OFCE Policy Brief*, n° 45, December 11, 2018.

Renew the mix: Carry out the energy transition, at last!

By [Aurélien Saussay](#), [Gissela Landa Rivera](#) and [Paul Malliet](#)

The five-year presidential term in France will have been marked by the success of COP21, which led to the signing in December 2015 of the Paris Agreement to limit the rise in global temperatures to 2°C by the end of the century. Despite this, climate and energy issues do not seem to be priorities in the upcoming presidential debate.

These issues nevertheless deserve to be dealt with in depth, given that the decisions required entail a long-term commitment by France. In order to meet the goals France has set itself in the Law on the energy transition and green growth (LTECV), it is necessary as soon as possible to undertake the changes required in our energy mix and to improve its efficiency in order to hold down demand from the main energy-consuming sectors, i.e. residential, services, transport and industry.

The recent parliamentary report from the Committee on economic affairs (CAE) and the Commission on sustainable development (CDD) [\[1\]](#) pointedly notes the delay in the implementation of LTECV. In particular, the report highlights the limited progress made in exploiting the main source of energy-savings, the construction sector. It also notes the delay in increasing the share of renewable energies in our energy mix, particularly with regard to the generation of electricity.

To this end, the Multiannual electricity programme (PPE) for the period 2016-2023 does not seem sufficient, in the current situation, to meet the objective set in Article I, Section 3 (L100-4) , Paragraph 5 of the LTECV, which calls for reducing the share of nuclear power to 50% of France's electricity mix

by 2025. To achieve this, it will be necessary to revise the PPE at the beginning of the next five-year term.

The main obstacles to the implementation of the ambitious investment plans needed to achieve the law's main objectives – France's transition towards a low-carbon economy – are fear that the economy will become less competitive, particularly energy-intensive industries^[2], together with the low acceptability of carbon taxation and the risk that all this will have a recessionary economic impact.

While an analysis of the redistributive impacts of carbon taxation remains a topic for research, work done by the OFCE in partnership with the ADEME has shown that fears of a negative macroeconomic impact are unjustified. Far from weighing on the prospects for an economic recovery, the energy transition could, on the contrary, bring about a resurgence of growth for the French economy over the next thirty years – starting right in the next five-year term.

This result is the macroeconomic translation of the continuous reduction in the cost of the technologies needed for the transition, in all its dimensions: the production of renewable energy, the management of intermittence, and the improvement of energy efficiency. Our analysis shows that changes in the full cost of renewable electricity (i.e. the levelized cost of electricity, LCOE) make a complete change of the energy paradigm possible, without any major additional cost compared to traditional technologies – even in a country with an extensive nuclear power industry like France.

A policy brief recently published by the OFCE, "[Changing the mix: the urgency of an energy transition in France, and the opportunities](#)" [in French], presents the main conclusions of this work. First, it demonstrates that achieving an energy transition corresponding to the LTECV would generate about 0.4% additional GDP and more than 180,000 jobs by 2022, at the end of the next five-year term. While this is a modest effect,

our projections indicate an expansionary impact of 3% of additional GDP over the longer term up to 2050 – i.e. additional annual growth of 0.1% over the period.

We have also estimated the impact of a more ambitious forward-looking effort to decarbonize the French economy: increasing the share of renewables to up to 100% of the electricity mix by 2050. This scenario presupposes accelerating the construction of the infrastructures generating renewable electricity – mainly onshore and offshore wind along with solar photovoltaic – starting in the next five-year term. This increased effort would result in a larger gain of 1.3% of GDP by 2022, reaching 3.9% by 2050.

This last exercise shows that an energy transition comparable in magnitude to Germany's *Energiewende* is definitely achievable in France, both technologically and economically.

Accelerating the energy transition in France during the next five-year term would meet a threefold objective: it would give the economy an additional boost to growth; meet the goals for the reduction of CO₂ emissions and energy consumption set by the LTECV; and achieve France's contribution to the goal endorsed by COP21 of limiting global warming to a rise of less than 2°C above pre-industrial temperatures.

[\[1\]](#) Joint information mission on the application of the Law of 17 August 2015 on the energy transition for green growth, 26 October 2016.

[\[2\]](#) See on this topic, « [L'état du tissu productif français : absence de reprise ou véritable décrochage?](#) » [France's production system: absence of a recovery or a genuine take-off?], OFCE Department of innovation and competition, 2016.

Measuring well-being and sustainability: A special issue of the Revue de l'OFCE

By [Eloi Laurent](#)

This issue of the [Revue de l'OFCE \(no. 145, February 2016\)](#) presents some of the best works that are being produced at a rapid clip on indicators of well-being and sustainability.

Why want to measure well-being? Because the idea that economic growth represents human development, in the sense that growth represents a good summary of its various dimensions, is simply false. GDP growth is not a prerequisite for human development; on the contrary, it is now often an impediment (as is illustrated by the exorbitant health costs of air pollution in India and China, two countries that concentrate one-third of the human population).

Achieving growth is not therefore sufficient in itself for human development; there is a need for specific policies that deal directly with education, health, environmental conditions and democratic quality. If the multiple dimensions of well-being are not taken into account, one dimension, typically the economic dimension, is imposed on and crushes the others, mutilating the human development of both individuals and groups (the example of health in the United States is particularly striking in this regard).

Why want to measure sustainability? Because today's global growth rate of 5% is of little importance if the climate, the ecosystems, the water and air that underpin our well-being have irrevocably deteriorated in two or three decades due to

the means deployed to achieve that growth. Or to put it in the words of the Chinese Minister of the Environment, Zhou Shengxian, in 2011: "If our land is ravaged and our health destroyed, what benefit does our growth bring?" We need to update our understanding of well-being so that it is not a mirage. Our economic and political systems exist only because they are underpinned by a set of resources that make up the biosphere, whose vitality is the condition for the perpetuation of these systems. To put it bluntly, if ecological crises are not measured and controlled, they will eventually do away with human welfare.

Indicators of well-being and sustainability must therefore enter a new, performative age: after measuring in order to understand, we now need to measure in order to make change – to evaluate in order to evolve. Because the change called for by these new visions of the global economy is considerable. This time of action invariably involves choices and trade-offs that are far from simple. This underscores the dual purpose of this issue of the *Revue de l'OFCE*: to show that indicators of well-being and sustainability have reached maturity and that they now can change not only our vision of the economic world but also the economic world itself; they can make clear the types of choices available to public and private decision-makers so as to carry out the change needed. In this respect the two sections of this special issue clearly highlight the issue of the relevant scale for measuring well-being and sustainability.

The first part of this issue is devoted to the relatively new topic of measuring regional well-being in France. Measuring well-being where it is actually lived presupposes moving down the scale to the local level: the need to measure and improve human well-being as close as possible to people's lived reality, along with the scale of spatial inequalities in contemporary France, demands a territorial perspective. There are at least two good reasons why territories (regions,

cities, *départements*, towns), more than nation-states, are the vectors of choice for the transition towards well-being and sustainability. The first is that they have grown in importance due to the impact of globalization and urbanization. The second is their capacity for social innovation. Following on from the late Elinor Ostrom, we talk about a “polycentric transition” to mean that each level of government can seize on the well-being and sustainability transition without waiting for a push from the top.

Monica Brezzi Luiz de Mello and Eloi Laurent (“Beyond GDP, beneath GDP: Measuring regional well-being in the OECD” – *all OFCE Revue articles in French*) gives the initial results of the theoretical and empirical work currently underway in the OECD framework (interactive access on the site <http://www.oecdregionalwellbeing.org/>) that measures certain dimensions of well-being at the regional level and applies these new indicators to the French case in order to draw useful lessons for public policy.

Robert Reynard (“Quality of life in the French regions”) provides an overview of recent findings by the INSEE using regional quality-of-life indicators. These can be used to develop a new typology of French spaces, highlighting eight major types of territories, which are distinguished both by the living conditions of their inhabitants (employment, income, health, education, etc.) and the amenities that these areas provide for their people (living environment, access to services, transport, etc.). The new representation of France that emerges constitutes a valuable decision-making tool for those in charge of policies aimed at promoting equality between the regions.

Kim Antunez, Louise Haran and Vivien Roussez (“Diagnoses of quality of life: Taking into account people’s preferences”) looks back at the approach developed by France’s regional monitoring body (*Observatoire des territoires*) and highlights indicators, offered at appropriate geographical scales, that

can be used to account for the multidimensional character of quality of life in France. Here too, regional typologies explore the link between the diverse amenities in people's environments and the diverse aspirations of the people who live in them, so as to highlight the imbalances that exist and the public policy levers that can be used to reduce these.

Finally, Florence Jany-Catrice ("Measuring regional well-being: Working *on* or *with* the regions?") discusses a fundamental aspect of the debate about measuring well-being in the French regions: the participation of citizens in defining their own well-being. She shows in particular that the impact of the indicators depends on whether those who develop them work on the regions or with them – it is only in the latter case that the region and its inhabitants become active players in the development of a common vision.

But, in contrast to these localized approaches, the measurement of sustainability requires moving up the geographical scale to the national or even global level. This is the subject of the articles in the second part of this issue, which deal with a subject whose importance has been emphasized by the recent law on the energy transition: the circular economy. Here there is a crucial difference to be made between a seemingly circular economy, which concerns a product or business, and genuine economic circularity, which can be understood only by enlarging the loop to develop a systemic vision.

This is what Christian Arnsperger and Dominique Bourg aim to demonstrate ("Towards a truly circular economy: Reflections on the foundations of an indicator of circularity") by examining the main issues and questions that designers of an indicator of a truly circular economy would need to take into account, if it were ever to be developed formally and technically. They conclude in particular that without a systemic vision oriented towards the reduction, rationing and stationarity intrinsic to the permaculture approach, the notion of the circular economy

will forever remain vulnerable to misuse that, however well intentioned, is ultimately short-sighted.

Vincent Aurez and Laurent Georgeault (“Indicators of the circular economy in China”) attempt to assess the relevance and the actual scope of the assessment tools developed in recent years by China to flesh out an integrated circular economy policy that aims at ensuring the transition to a low-carbon model with a restrained use of resources. These instruments, which in many respects are unique, but still inadequate, are distinguished by their systemic and multidimensional character, and therefore constitute an original contribution to the field of sustainability indicators.

Finally, Stephan Kampelmann (“Measuring the circular economy at the regional level: A systemic analysis of the management of organic matter in Brussels”) draws on the theory of social-ecological systems to carry out a particularly innovative exercise. He uses a battery of indicators to compare the economic, social and environmental impact of two possible pathways for the municipal management of flows of organic matter in Brussels: a centralized treatment using anaerobic digestion, and a process based on decentralized composting.

Thus while well-being is best measured at the local level, to assess sustainability properly, including at the regional level, the impact felt beyond local and national borders has to be taken into account. The trade-offs between these dimensions, including the exploration and possible transformation into synergies at regional and national levels, then turn out to be the most promising projects opened up by the welfare and sustainability transition.

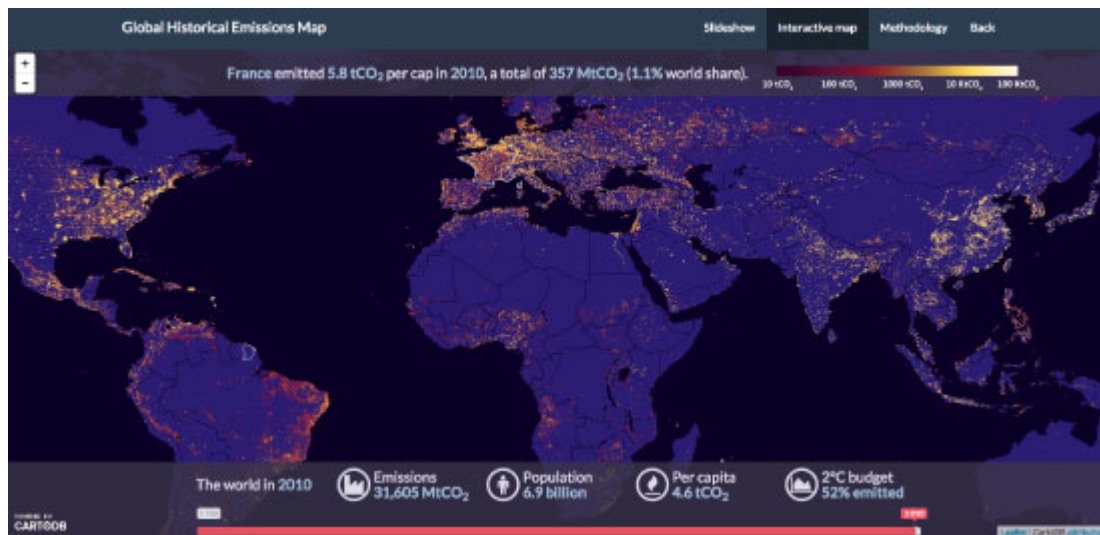
From the suburbs of London to global conflagration: a brief history of emissions

By [Aurélien Saussay](#)

A [new interactive map](#) of global CO2 emissions from 1750 to 2010 is helpful in understanding the historical responsibilities of the world's different regions for the climate crisis.

The 21st Conference of Parties (COP 21) ended on 12 December 2015 with a historic agreement. As 195 countries come to an accord on the need to limit global warming to 2 degrees by the end of the century, it is a good time to review the history of CO2 emissions since the beginning of the Industrial Revolution. Right to the end of the negotiations, the question of the historical responsibility of the different countries has remained one of the main obstacles blocking the path to a global climate agreement. The recently industrialized emerging countries and the developing countries that are just beginning their economic take-off rightly refuse to provide efforts comparable to those of the developed countries.

This feeling is confirmed by a [new interactive map](#) retracing 260 years of CO2 emissions from fossil fuel combustion and cement production on the surface of the planet^[1]. This map can be used interactively to explore the emissions of each country and their distribution in space over the last two centuries, both in their entirety and per capita. It can also be used to follow trends in global emissions and the gradual consumption of the total carbon budget for holding global warming to below 2 degrees.



By combining historical data on emissions per country issued by the [CDIAC](#) (from 1750-2010) with decadal data on population density produced by the European [HYDE](#) project (also 1750-2010), it is possible to estimate the distribution of emissions over space and time around the planet's surface – on a grid with a resolution of 5' of arc (5' being equal to 1/12th of a degree, i.e. about 10 km by 10 km at the equator).

This interactive map shows the contribution of each of the world's regions since the mid-18th century – while at the same time offering a gripping account of the gradual spread of the industrial revolution over the last two centuries.

These data illustrate several key points that help to understand the debate about differentiated historical responsibilities:

- Up to the mid-20th century, only Europe and the United States (and to a lesser extent Japan) contributed significantly to global emissions.
- It was only in the last 30 years that, led by China, the rest of the world “turned on”.
- Driven by rapid economic growth in the emerging countries, emissions have taken off in the last fifteen years.
- When weighted by distribution of the world population, emissions are highly concentrated spatially. This conclusion

is bolstered when using even finer data, notably the location of power stations and the most energy-consuming manufacturing plants (cement, aluminium, and paper, for example).

This brief history of CO₂ emissions across the globe reminds us of the West's special responsibility in the fight against global warming. The precocity of the Industrial Revolution in the West allowed the economy to take-off much earlier than in the rest of the world, but it also led to the emission of a disproportionate share of the total emissions budget that we are entitled to if we are not to exceed the target of two degrees of warming.

This differentiated historical responsibility, which was recognized by the Paris Agreement, requires Western countries to make a special effort in the fight against global warming. This responsibility must thus be reflected in a greater effort in terms of financial and technological transfers so as to ensure that the emergence of the developing countries minimizes the use of fossil fuels, without hindering their economic take-off.

[\[1\]](#) These emissions do not include emissions from changes in land use (LUCLUF) or fertilizer use. Unfortunately, it is very difficult to reconstruct these emissions for the period under consideration.

After the Paris Agreement – Putting an end to climate inconsistency

By [Eloi Laurent](#)

If the contents of the 32-page Paris Agreement (and the related decisions) adopted on 12 December 2015 by COP 21 had to be summarized in a single phrase, we could say that never have the ambitions been so high but the constraints so low. This is the basic trade-off in the text, and this was undoubtedly the condition for its adoption by all the world's countries. The expectation had been that the aim in Paris was to extend to the emerging markets, starting with China and India, the binding commitments agreed in Kyoto eighteen years ago by the developed countries. What took place was exactly the opposite: under the leadership of the US government, which dominated this round of negotiations from start to finish right to the last minute (and where the EU was sorely absent), every country is now effectively out of Annex 1 of the Kyoto Protocol. They are released from any legal constraints on the nature of their commitments in the fight against climate change, which now amount to voluntary contributions that countries determine on their own and without reference to a common goal.

In doing this, the Paris Agreement gives rise to a new global variable, which we can accurately track over the coming years: the factor of inconsistency, which compares objectives and resources. At the end of COP 21, this ratio was in the range of 1.35 to 2 (the climate objective chosen, specified in Article 2, lies between 1.5 and 2 degrees, whereas the sum of national voluntary contributions declared to reach this would lead to warming of 2.7 to 3 degrees). The question facing us now is thus the following: how to deal with this climate

inconsistency by bringing the resources deployed into line with the ambitions declared (bringing the climate inconsistency factor to 1)?

The answers to this question were actually set out during the two weeks of COP 21, but they did not survive the negotiations between states and therefore were not included in the final text in an operational form. They are three in number: climate justice, the carbon price and the mobilization of territories.

Climate justice, whose decisive importance was rightly highlighted in particular in the opening speech of the French President ("It is in the name of climate justice that I speak to you today") is actually contradicted in the text of the Agreement: while the text mentions the term "justice" only a single time, it provides that the parties recognize "the importance for some of the concept of 'climate justice'". The whole point of climate justice is precisely that its importance is not confined to only a few nations but concerns all the world's countries. So there is still a huge amount to be done in this field, particularly on the question of the distribution of efforts at mitigation and adaptation.

The need to put a price on carbon (and thus give it social value), which has been gaining in support, as was highlighted from the opening of COP 21 under the aegis of Angela Merkel and the new Canadian government, still appeared in the penultimate version of the text. It disappeared from the final version (under the combined pressure of Saudi Arabia and Venezuela). Yet there is no doubt that it is by internalizing the price of carbon that we will put the economy at the service of the climate transition. But it seems at this point that the world's governments have decided to outsource this internalization function to the private sector. It is necessary to quickly take this in hand, both internally and globally.

Finally, the way the Agreement deals with the crucial role of

decentralized territories, both to compensate for the shortcomings of the nation states and to be laboratories for a low-carbon economy, is too brief and too vague. The summit organized by the Mayor of Paris on December 4 nevertheless showed clearly that towns, cities and regions have become full participants in the fight against climate change, reviving the spirit of the 1992 Rio Summit. It is essential to set up as quickly as possible an organization for genuine cooperation between the territories and the nation states, in France and elsewhere, to breathe life into the Paris Agreement.

It can be seen clearly in the light of these three decisive issues, that the most severe criticism that can be levelled at an architectural agreement, which is a programme of intentions rather than an actual plan for action, is not to be progressive and dynamic enough and not to anticipate sufficiently its own shortcomings and its coming outdatedness by opening the way for new principles, new instruments and new players. Moreover, what are we to make of the fact that we have to wait until 2020 for its implementation, while the signs of climate change are visible all around us?

The easing of this time constraint may well come from the big country that proved to be the most constructive before and during COP 21: China. It was China that, five days before the conclusion of the Agreement, was the source of the best climate news since the announcement of the slowing of Amazon deforestation in the 2000s: global CO₂ emissions, after almost stabilizing in 2014, should decrease slightly in 2015. This decrease is due to their reduction in China under the combined impact of the economic slowdown (the decision to end hyper-growth) and the de-carbonization of growth (related to lower consumption of coal). This is in turn due to the increasingly strong pressure being placed by the Chinese people on their government, because they have understood that the economic development of their country is destroying the human development of their children. It can thus be hoped that China

will contain global emissions over the five years between now and 2020 and thereby make the Paris Agreement more acceptable... on the condition of using this to put an end to climate inconsistency.

Our house is on fire and we are only watching Paris

By Paul Malliet

As the 21st Conference of the Parties, COP21, began last week, all eyes were on Paris in the expectation of an ambitious global agreement that would limit the increase in global average temperature to 2°C and lead countries to begin swiftly to decarbonize their economies. But there is another battle taking place right now that is being ignored, even though it could have catastrophic consequences.

The primary forests and peatlands of Indonesia, located mainly on the islands of Sumatra and Kalimantan (and considered one of the Earth's three green lungs), have been ravaged by fire for months as a result of an unexpectedly long dry season, which was in turn fueled by an extremely large-scale El Niño phenomenon[\[1\]](#), but also and above all by the continuation of slash and burn practices, which, though illegal, are intended to deforest the land needed to expand the cultivation of palm oil.

This led to the release of 1.62 gigatons of CO₂ into the atmosphere in the space of a few weeks, tripling Indonesia's annual emissions and pushing the country up from the planet's

6th largest emitter to 4th, behind China, the US and India and ahead of Russia[\[2\]](#). By way of comparison, this represents nearly 5% of global emissions for the year 2015.

Yet the issue of deforestation was central to Indonesia's contribution to the global effort to reduce greenhouse gas emissions, accounting for more than 80% of the effort agreed[\[3\]](#) up to now. Moreover, under the UN REDD+ (Reduction Emissions from Deforestation and Forest Degradation) mechanism, launched in 2008, Indonesia has benefitted from \$1 billion of international funding since 2011 precisely in order to fight against deforestation and to promote the management of sustainable forests.

However, due to the lack of a rapid and substantial response that would undoubtedly have contained the fires, this effort has literally gone up in smoke in recent months. Three reasons for this can be put forward at this stage. The first concerns the material capacities that Indonesia has for responding to disasters like this. For example, the authorities had only 14 aircraft, and relied mainly on the local population to fight the spread of forest fires by building containment basins. The second element concerns regional geopolitical issues. Indonesia has some diplomatic tension with its neighbors, and the fires raged for a number of weeks before the government agreed to accept international aid. Finally, the existence of a culture of corruption at various levels of government has led to years of deforestation, further weakening the ecosystems facing fire hazards.

Nevertheless, it is utterly clear today that discussion about the ways and means for dealing with climate disasters like this are completely missing from the discussions going on in the COP 21 process. It is more urgent than ever that the international community is capable of providing a framework that includes the capabilities for responding to these types of events, which unfortunately are likely to occur with increasing frequency, with consequences liable to profoundly

affect regional relations. Strengthening funding for the fight against deforestation is of course paramount, especially since in this case the cost of avoiding a ton of CO₂ is very low; but it is mainly at the level of practices that substantial progress can still be made, either by introducing greater transparency in fund management or through greater integration of local communities and NGOs in the implementation of new practices.

In his opening speech at COP 21, Francois Hollande declared that, “what is at stake with this climate conference is peace”. The conditions for peace are indeed likely to depend increasingly on societies’ capacity to adapt to climate risks. The disaster of World War II led the international community to create a body of peacekeepers with a mandate for “the maintenance or restoration of peace and international security”. How many ecological disasters will be required before we see the appearance of green helmets?

[\[1\]](#) According to the World Meteorological Organization (WMO), the 2015-2016 El Niño is listed as one of the three most powerful recorded since data began to be collected in 1950, and the coming decades are likely to see extreme events occur with heightened frequency as a result of climate change.

[\[2\]](#) World Resources Institute, *With Latest Fires Crisis, Indonesia Surpasses Russia as World’s Fourth-Largest Emitter*, 29 October 2015.

[\[3\]](#) In 2009 Indonesia undertook to reduce its greenhouse gas emissions by 29%, or even 41% (with international aid), compared to a baseline scenario (Source: National Action Plan for Greenhouse Gas Emissions Reduction (RAN-GRK)).

The COP 21 conference: the necessity of compromise

By [Aurélien Saussay](#)

On Tuesday, 6 October 2015, the United Nations Framework Convention on Climate Change (UNFCCC) released a preliminary version of the draft agreement that will form the basis for negotiations at the Paris Conference in December. Six years after the Copenhagen agreement, widely described as a failure, the French Secretariat is making every effort to ensure the success of COP 21 – at the cost of a certain number of compromises. Although the text's ambitiousness has been cut down, the strategy of taking "small steps" is what can make an agreement possible.

The project has renounced a binding approach, where each country's contributions were negotiated simultaneously, and replaced that with a call for voluntary contributions, where each country makes its commitments separately. This step was essential: the Kyoto Protocol, though ambitious, was never ratified by the United States, the world's principal emitter of carbon at the time – and it was the attempt to build a successor on that same model which resulted in the lack of agreement at Copenhagen.

The countries' commitments, called Intended Nationally Determined Contributions (INDC), fall into three broad categories: a reduction in emissions from the level of a given base year – generally used by the developed countries; a reduction in the intensity of emissions relative to GDP (the amount of GHGs emitted per unit of GDP produced); and finally, the relative reduction in emissions compared to a baseline

scenario, called “business-as-usual”, which represents the projected trajectory of emissions in the absence of specific measures.

Most emerging countries have chosen to express their targets in terms of intensity (China and India in particular) or relative to a baseline trajectory (Brazil, Mexico and Indonesia). This type of definition has the advantage of not penalizing their economic development – at the price, of course, of uncertainty about the level of the target: if economic growth exceeds the projections used, the target could be met even while the reduction in emissions achieved would be lower than expected. Moreover, part of the target is often indexed on the availability of financing and of technology transfers from developed countries – once again, a perfectly legitimate condition. Due to the contribution that having a plurality of targets makes to a fair distribution of efforts between developed, long-standing emitters and countries that have been developing recently, this represents an essential source of compromise.

With regards to the level of emissions targets set for 2030, while some are trivial – note the case of Australia, which is proposing *to increase* its emissions over 1990 levels – many involve accelerating existing efforts. To meet its commitments, Europe must reduce its emissions twice as rapidly from 2020 to 2030 as it does in the previous decade, and the United States one-and-a-half times; China will need to reduce its carbon intensity three times faster than it has in the last five years, and India two-and-a-half times faster.

As a guide, if the INDCs made public to date were fully realized, then according to the research consortium Climate Action Tracker [\[1\]](#), global temperatures would rise 2.7 °C above pre-industrial levels by the end of the century. This simple calculation must, however, be qualified, since the plan is for commitments to be revised every five years, and they can only be tightened. This system of iterative negotiations

should make it possible to move steadily closer to the goal of 2°C that is still being upheld officially.

To be effective, it is necessary to check on whether these commitments are actually met, which requires independent monitoring. In this respect, while guidelines have been highlighted in the current version of the draft agreement, the final negotiations will need to clarify the mechanisms actually used. In the absence of an effective verification procedure, successive revaluations of commitments could turn into a global game of liar's poker, and ultimately undermine the fight against climate change.

Moreover, the existence of relatively ambitious commitments should certainly not delay the implementation of the necessary adaptation measures, which are at present the subject of a single article in the provisional draft, with no reference to the funding that will be devoted to this. This is one of the project's main weaknesses, as the question of funding is barely mentioned – the Green Climate Fund, which was to be endowed with 100 billion dollars by 2010, has received only 10.2 billion to date.

In turning the page on Copenhagen, the draft agreement for Paris could constitute a real step forward for climate protection. It is the result of a change in method and a series of compromises which, though scaling down ambitions, are absolutely necessary to the very existence of an agreement. Demanding greater requirements for the proposal's targets could lead to the failure of the negotiations, which would be far more damaging. In its current version, the draft agreement provides a robust foundation for the future coordination of efforts against climate change.

[\[1\]](#) The Consortium of the following research organizations: Climate Analytics, Ecofys, NewClimate Institute, and Potsdam

Climate justice – the “Open Sesame” of the COP 21 climate conference

By [Eloi Laurent](#)

Climate negotiations cannot be limited to technical discussions between experts about the reliability of scientific data: they need to take the form of an open political dialogue that is nourished by ethical reflection involving the citizens. What should be the focus of this dialogue? With COP 21 opening in two months in Paris, it is becoming increasingly clear that the key to a possible agreement is not economic efficiency, but social justice. The “green growth” that was a goal in the past century has little mobilizing power in a world plagued by injustice. It is much more important to highlight the potential that resolute action against climate change holds for equality at the national and global level.

Three issues indicate how social justice is at the heart of the climate negotiations. The first concerns the choice of the criteria for allocating the carbon budget between countries in order to mitigate climate change (the approximately 1200 billion tons of carbon that remains to be emitted over the next three to four decade so as to limit the rise of ground temperatures to around 2 degrees by the end of the 21st century). Various indicators can be used both to estimate the

carbon budget and to distribute it equitably among countries; while these indicators need to be discussed, we cannot under any circumstances ignore this issue in Paris. It is demonstrable that [the application of hybrid but relatively simple criteria on climate justice](#) would lead to cutting global emissions almost in half over the next three decades, which would ensure meeting the goal of 2 degrees, and even targeting the increased rise in temperatures to 1.5 degrees, thereby enhancing the fairness of this common rule with respect to the most vulnerable countries and social groups.

The second issue concerns adaptation to climate change, that is to say, the exposure and sensitivity to extreme weather events and rising global temperatures that is differentiated between countries and social groups. Here too it is important to select relevant indicators of climate vulnerability to fairly allocate the available funding (which should increase to \$100 billion per year by 2020). But it will be very difficult to mobilize the necessary sums without [shifting the climate negotiations from the current quantitative logic to a price logic](#).

Finally, combatting inequality seems to be the most effective way to involve citizens in the climate dialogue. The fight against climate change must be understood not as a social threat or an opportunity for profit-making but as a lever for achieving equality: a chance to reduce disparities in human development between countries and within countries.

The case of China shows how constraints on cutting CO₂ emissions can turn into a tool for reducing inequality: the limitation on coal consumption simultaneously reduces the country's greenhouse gas emissions and the damage caused to the Chinese population's health by fine particles, which are distributed very unevenly around the territory and therefore within the population. The same applies to the much desired regulation of automobile traffic in France's urban areas, which represents both a gain for health and a reduction in

emissions related to mobility. This dual climate-health dividend (reducing emissions to contain global warming has an indirect effect, i.e. improving health) must therefore be at the heart of the Paris negotiations. The fight against climate change offers a chance to reduce the inequalities that will be so devastating: by cross-checking the “social” map and the “climate” map, we can anticipate that the impact of heat waves will be felt strongest in regions where both climatic exposure and the share of elderly people living alone are at high levels. The climate risk is a [socio-ecological risk](#). Inequality associated with this risk is [environmental inequality](#) [article in French]. The goal of COP 21 should not be to “save the planet” or even less to “save growth” but rather to “save our health” by protecting the most vulnerable from the worst of the climate crisis.

Shale gas: recovering a mirage?

By Aurélien Saussay

A report posted online on April 7 by [Le Figaro](#) assesses the gains that could be expected from the exploitation of shale gas in France: the report concludes that this is an opportunity to revive the French economy and cut France’s energy costs by substituting domestic production for our imports of gas. It estimates that the macroeconomic impact would be substantial: in the “likely” scenario, more than 200,000 jobs would be created, with an additional 1.7 points of GDP on average over a 30-year period.

The magnitude of these figures stems directly from the assumptions used in the report, especially in terms of geology. The production costs for a shale gas field and the volumes that could be extracted depend on the field's physical characteristics (depth, permeability, ductility of the rock, etc.). However, without carrying out any experimental fracking, it is very difficult to make a future estimate of all of these parameters, and hence of the final production cost.

It is nevertheless possible to see how these parameters are distributed in the only territory that has extensively exploited shale gas up to now: the United States. By reviewing the production data for the US deposits accumulated over more than ten years, a realistic distribution of production costs can be modelled. This is the approach adopted to develop the SHERPA model, which is described in an OFCE working paper published today, [Can the U.S. shale revolution be duplicated in Europe?](#)

More than 60 shale gas deposits have been explored in the United States since it first began to be exploited in the early 2000s. But only 30 have been put into commercial production, and six of these account for over 90% of the total US output of shale gas. Based on the geological assumptions corresponding to the median of the six best deposits, the Net Present Value (NPV) of France's gas resources comes to 15 billion euros – 15 times less than the 224 billion estimated in the aforementioned report. To reach this latter figure, it must be assumed both that the cost of drilling and well completion will be similar in France and the United States, and that the French deposits are comparable to the best American field, around Haynesville, Louisiana ... but the characteristics of that field are exceptional: the average output of its gas wells is nearly four times the average of the five other main deposits. While it is of course impossible *a priori* to exclude that this latter assumption would hold, it

is very unlikely.

This uncertainty emphasizes the need to carry out experimental drilling to guard against overly optimistic scenarios. The case of Poland is instructive: the projections of the US Energy Information Agency (EIA) pointed to very large shale gas reserves in a country that is heavily dependent on imports of Russian gas. The Polish government, keen to strengthen its energy independence, decided to try to speed up domestic production, offering up to a third of its territory for operating concessions. The first wells were disappointing: it turned out that the rocks in the Polish deposit contained too much clay, making them too ductile and impeding good fracturing of the rock – an essential step for exploiting shale gas, regardless of which technology is used. After the trials, Poland's substantial reserves, touted as the largest in Europe, proved to be unworkable.

This kind of evaluation should be made in a way that is public and transparent. Professional prospectors, whose main activity is to assess the geological reality of a hydrocarbon deposit previously estimated on paper, in fact have an interest in overestimating the pre-drilling assessments in order to sell their services. An example from abroad once again shows the extent of the problem: in May 2014, the US EIA reported that the estimate of the exploitable volume of shale oil in the US Monterey deposit, hitherto regarded as one of the most promising, was being slashed by 96%. After a review, it was clear that the first estimate, made two years earlier, had been based entirely on the calculations of private independent prospectors, without the intervention of the governmental services of the US Geological Survey.

To ensure a realistic assessment of France's resources of shale gas, experimental drilling needs to be entrusted to a public body, with fully transparent results and methodology. Only an approach like this can ensure that future scenarios are objective and not unduly optimistic.

