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is a research and campaign group exposing and challenging the privileged access and influence by corporations and their lobby groups in EU policy making. This corporate capture of the EU leads to policies that exacerbate social injustice and accelerate environmental destruction across the world. CEO works in close alliance with public interest groups and social movements to develop alternatives to the dominance of corporate power.

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was established in 1974 as an international network of activist scholars committed to carrying out critical analyses of the global problems of today and tomorrow. It builds alliances with grassroots social movements, and develops proposals for a more democratic, sustainable and just world.

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**Ecologistas en Acción** is one of the largest environmental and social grassroots organisations in Spain and forms part of very diverse platforms and international global justice networks. It locates itself in the 'social ecology' arena, analysing environmental problems against the background of a critique of globalised production and consumption. The urban-agrarian-industrial model needs to be changed and transformed in order to end the current ecological crisis and social injustices. To contribute to such transformation, Ecologistas en Acción proposes concrete and viable alternatives where the redistribution of wealth and a focus on equity are central.

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This book may be critiqued as being pessimistic. But in reality it is attempting to prepare us for very great change – nothing less than the total collapse of industrial civilisation. **Ramón Fernández Durán** sees this collapse emerging from the current global crisis which is characterized by systemic chaos, ecological disaster and resource wars. He views the beginning of the end of fossil energy as the core element of this crisis which will bring a historic rupture. Indeed, **The Breakdown of Global Capitalism: 2000–2030** describes the first phase of a long decline of industrial civilisation that may last for two to three centuries.

This book is part of a much larger volume that **Ramón Fernández Durán** worked on for the last two years of his life. It contains the core thesis of that unfinished, more complex work, referred to by him as 'the book of my life'. The current text culminates his rich political and ideological legacy and is also his last farewell.

Despite his engagement with the harsh realities of the crisis, and journeying through some very complex terrain, Ramón Fernández Durán asserts the hope that human beings will one day declare peace with the planet and with humankind.

Libros  
en acción



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RAMÓN FERNÁNDEZ DURÁN

The Breakdown of Global Capitalism: 2000-2030

The beginning of the end of fossil fuels:  
a total historical rupture



Ramón Fernández Durán

# The Breakdown of Global Capitalism: 2000-2030

Preparing for the beginning of the collapse  
of industrial civilisation

**Ramón Fernández Durán** (1945-2011), founding member of Ecologistas en Acción, is an indisputable reference for grassroots social movements. He has contributed significantly to critical thinking and social mobilisation with his many books. Some examples are - *The Explosion of Disorder* (1992) on globalisation; *Against the Europe of Capital* (1995) on the neoliberal policies of the European Union; *Global Financial Capitalism and Permanent War* (2003) on the financialisation of the economy; *Tsunami of Urbanisation* (2006) on geopolitical and socio-economic changes, the housing bubble and financial crisis and *The Twilight of the Tragic Era of Oil* (2008) on the role of fossil fuels in capitalism.

Ramón is also a reference for the articulation of powerful collective responses. Again, he has contributed significantly in this arena – for example, the anti-NATO mobilisations, the global justice movement and the formation of Ecologistas en Acción. But, above all, Ramón is a reference for our humanity – an example of how to be and act in the world.





# The Breakdown of Global Capitalism: 2000-2030

Multidimensional crisis, systemic chaos, ecological  
ruin and a war for resources

Preparing for the beginning of the collapse of  
industrial civilisation

**THE BEGINNING OF THE END OF FOSSIL FUEL:  
A TOTAL HISTORICAL RUPTURE**

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**Ramón Fernández Durán**  
(Ecologistas en Acción)

**Title:** **The Breakdown of Global Capitalism: 2000-2030**  
Preparing for the beginning of the collapse of industrial civilisation

**Author:** Ramón Fernández Durán

**Original concept, layout and publication:** Ecologistas en Acción

**Illustrations:** Isabel Vázquez

**Cover image:** A fisherman scrapes his hands across the top of a barrel while  
cleaning part of an oil spill site in Dalian, China on July 23, 2010.  
(REUTERS/Jiang He/Greenpeace)

**English Edition** prepared by:

- Ecologistas en Acción (Libros en Acción),
- Corporate Europe Observatory (CEO),
- Transnational Institute (TNI)

**Translation** from Spanish by Rebecca Farro Howard

**Edited** by Eleanor Ashe

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**First English edition:** May 2012

Printed on 100% recycled, ecological paper free of bleach.

ISBN: 978-84-939415-4-3

Depósito Legal: M-14482-2012



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Editors:

*Libros  
en acción*



To Ana,  
my love and comrade, who has supported and accompanied me throughout all these years, particularly during the last times. Without her invaluable friendship and love I would not have been able to face this last phase of my life in the way I am doing it. Besides, she has been a constant source of learning on feminist issues, and I have always been delighted with the way in which we shared our reflections, dreams and visions of life, as well as our shared socio-political commitment.  
A big kiss for you, my beauty.  
You deserve the best!

## **Acknowledgements**

I would like to thank Kolya Abramsky, Luis González, Iván Murray, Jaime Pastor, Pedro Solé, Tom Kucharz, Fernando Cembranos, Manolo González, Fernando Prats, Yayo Herrero, Dough Tompkins and Ana Hernando for their comments on this introduction to the book, as well as contributions from companions and people close to La Maloca (Josi, Goyo, Alejo, Luz, Chus, Agus, Elena, Charly, Isabela, Marta, Cristina, Sandro, Isidro, Emma, Silvina, Dani, Ángel, Cristina, Chusa, Flori, Pepe and Ana), who helped me with their reflections as well as their laughter during the summer gatherings in the magical nights on the foothills of Montgo. At the same time I would like to thank Chusa Lamarca for the final edit of the text, and Isabel Vazquez for her illustrations. I would also like to thank the Deep Ecology and the Transnational Institute for their support and for Ecologistas en Acción that will coordinate the editing of this initial work as a book as well as Virus editorial and Baladre, who are coediting.

This is a more complete, polished and updated text compared to one with the same title that was posted on different websites in 2010. This new version is available in an electronic format on [www.ecologistasenaccion.org/IMG/pdf/el\\_inicio\\_del\\_fin\\_de\\_la\\_energia\\_fosil.pdf](http://www.ecologistasenaccion.org/IMG/pdf/el_inicio_del_fin_de_la_energia_fosil.pdf)

Moreover, this work is an Introduction to a much longer book that will take longer to see the light, due to the health problems of the author, but it synthesises its fundamental thesis. The final book will surely be developed by Luis González, a companion from Ecologistas en Acción and a great friend, who will also give his own valuable seal. I am deeply grateful for his invaluable help.

“In the markets we see groups behaving like wolf packs. If we let them, they will attack and destroy the weakest members.”

**Anders Borg**, *Swedish Finance Minister, in the face of a speculative attack on Greece (May 2010)*

“This time, the crumbling empire is the unassailable global economy, and the brave new world of consumer democracy being forged world-wide in its name. Upon the indestructibility of this edifice we have pinned the hopes of this latest phase of our civilization. (...) All around us, shifts are under way which suggest that our whole way of living is already passing into history (...) Ecological and economic collapse unfolds before us and, if we acknowledge them at all, we act as if this were a temporary problem, a technical glitch (...) For all our doubts and discontents, we are still wired to an idea of history in which the future will be an upgraded version of the present”

*Uncivilization: The Dark Mountain Manifesto*

“The soviet system stopped working for reasons similar to those which made the western model of the social State non operative, and more importantly, it happened more or less at the same time (...) We are all being dragged by the sinking of a ship (Modernity) whose hull has already broken. One of its parts sank first and very quickly, while the other is resisting a little bit longer. That is all.”

*We are the Same: The crisis of Modernity as a common problem.*

**A.G. Glinchikova**

“Who would have thought that from the summit of Mount Palatine the Roman Empire was not eternal.”

*The Big Crunch.* **Pierre Thuillier**

“One day industrialisation will have to confront the depletion of resources and its own waste.”

*Las Ilusiones Renovables.* **Los Amigos de Ludd**

“We are heading towards a new era characterized by resources exhaustion (particularly oil and gas), the continuous decrease of the available net energy and the disappearance of the space for waste disposal available in Nature without unacceptable consequences for human societies.

We are already entering a century which will be defined by ecological limits, and by our response to those limits. The temptation will be to apply to the crisis that we will face in this century the same attitudes and behaviour that were both justifiable and profitable during the past century. If that would be the case the result will be a monumental historic catastrophe. In no other areas will that be so obviously true as in our relation to coal (the last fossil fuel “still abundant”). To put it simply, if we burn it, we will cook planet Earth and ourselves, at the same time that we will lose the economic benefits we pursue. We have only a tiny window of opportunity to walk towards a future desirable for our species by reducing fossil fuels consumption and moving towards a regime of renewable energy and a model of just and sustainable economy.

The final countdown has already started.”

*Blackout: Coal, climate and the last energy crisis.* **Richard Heinberg**

“The basis for the creation of sustainable human development must arise from within the system dominated by capital, without being part of it, just as the bourgeoisie itself arose in the ‘pores’ of feudal society.”

*What every environmentalist needs to know about capitalism.*

**Fred Magdoff and John Bellamy Foster**

“One of my main conclusions is that our species is simply not sufficiently wise (or I prefer the term sapient to differentiate between a native capacity and an actualized capability) to deal with the world we have created (...) and I doubt it can avoid its collapse in the XXI century (...) as it must face the ecological crisis.”

*Bottleneck: Humanity Impending Impasse.* **William Catton**

“The first thing you have to do to get out of a hole is to stop digging.”

**Chinese proverb**

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## Foreword to English Edition

Ramón Fernández Durán, a Spanish activist and writer, who died in May 2011 was a co-founder of *Ecologistas en Acción*, and has always been very close to Corporate Europe Observatory (CEO) and the Transnational Institute (TNI). He was a board member of CEO, and an associate fellow of the TNI, and a permanent source of inspiration. We first met in Madrid at the 1994 Alternative Forum "50 Years is Enough – The Other Voices of the Planet" (a mobilisation against the World Bank and IMF) and again in December 1995 at the Counter Summit during the EU Summit. Both events were important seeds for the global justice movement and for the creation of a European network challenging corporate Europe. From that point we remained closely connected through our work.

Ramón's lucid analysis, reflected in numerous books and articles, has had an important influence on our thinking and the memory of his committed political activism will stay with us to inspire and challenge us.

Ramón combined his great intellectual capacity and deep political commitment with an even greater kindness, warmth, humour and radical coherence in the way he lived (and died). It is also typical that his last work is a book looking towards the future of our societies and of our planet.

This book is his political testament, an introduction to a more ambitious book which he had worked on for several years. In this book, Ramón wanted to prepare us to face the breakdown of global

capitalism, and the collapse of industrial civilisation. The global crisis we are living through and which has at its heart and apex the peak in fossil fuel supplies, will lead to a deep historic rupture.

Ramón was brilliant in explaining the role of the financialised economy in the current system, and a pioneer in unmasking the neoliberal project behind the European Union. In this book he goes beyond exposing the flaws of the system. The deep crisis which began unfolding in several layers gave him the urgency to try to anticipate how it would evolve. Without evading any difficult confrontation, he has attempted to better prepare the global justice movement for what is yet to come. TNI and CEO do not necessarily endorse all the contents of the book, but we deeply believe that helping Ramón's words reach further is worth every effort.

Knowing his end was coming soon he wrote *"I am a little sad to leave in these times when history seems to accelerate, determined by the energy, environmental and climate change crisis that threatens the planet and human societies."* Almost a year since Ramón left us, the crisis has indeed exploded and we are facing every day new challenges and uncertainties. In this situation we sorely miss Ramón and often wonder what his reflections and actions would be. It is in this spirit therefore, that we want to share with a wider public his valuable last work.

*Corporate Europe Observatory  
Transnational Institute  
May 2012*

## **I. THE BEGINNING OF THE END OF FOSSIL FUEL: A TOTAL HISTORICAL RUPTURE**



This is further exacerbated by a series of internal economic and socio-political imbalances that are generated by the deployment and the crisis of the forces of capital at a global level. However, our belief is that it will be the ecological limits, the depletion of resources, fossil fuels in particular, which will put an end to the unbridled race, rather than the internal contradictions induced by the current model. Meanwhile, global capitalism has been developing a world social structure that is truly inhuman and that bears no relationship to the desires and aspirations of the majority of peoples. An example is the savage division between centres and peripheries, between owners and non-owners, and in particular between stock-holders, salaried workers, independent workers and those who are totally excluded.

During the exceptional period between the collapse of what is often referred to as the *Eastern Empire of Real Socialism* (1989–1991) and the crisis of Wall Street (2007–2008), it would appear that the ‘Western Empire’ definitively consolidated and broadened its reach on a world scale, inaugurating a type of vacation from history. A more agile, high-tech, industrial system, one that was flexible, consumer-based, ‘democratic’ and glamorous, managed to impose itself and gobble up another that was clumsier, bureaucratised, with limited goods and services, heavily repressive and above all grey. Fukuyama (1992) called it The End of History, to characterise the planetary triumph of global capitalism with a liberal-western bias.

However, all of this was in fact only a temporary mirage fostered for more than 20 years by cheap – very cheap – energy, a period marked by the lowest energy costs in history, as a result of the spectacular fall in oil prices during the mid-1980s and the 1990s (Fernández Durán, 2008; Greer, 2009). Low energy costs also led to the key addition of ‘Communist’ China in the new global capitalism, strengthening its globalisation power. Moreover, without the incorporation of the new world fabric (and all the peripheries of the global south) with its immense, cheap and hugely exploited labour force, along with its abundant resources, this type of capitalism would not have been feasible. Additionally, it would not have emerged without the phenomenon of substantial, cheap, immigrant labour that moved to central nations from the periphery, and to other emerging centres in the global south.

All of this inevitably resulted in the destruction of the labour force in the central space, along with the conquest of the soul, fostered by the Society of Consumption and the Global Village.

However, the financial crisis, with its epicentre in Wall Street, demonstrated that the transition just described was only a passing phenomenon, even if its impact was extremely powerful. In this sense we could say that the Wall Street crisis is for Global Capitalism what the fall of the Berlin Wall was for Real Socialism. That was the spark that activated a multi-dimensional and growing global crisis and a corporate collapse that had been incubating for a number of years, certainly since the beginning of the new millennium. In any case, the breakdown of global capitalism, and the resulting collapse of industrial civilisation, will not be a swift Hollywood-style process, but will have its own dynamic, with significant breakdowns that have already begun and are now unstoppable (Greer, 2008).

## **An exercise in political fiction with a strong dose of reality**

The main objective of this text is to examine the ongoing process of the collapse of global capitalism and to imagine ways in which we can influence the eventual outcome. In short, this is an exercise in political fiction, but based on very real foundations and with a mobilising and transforming impetus. We are conscious that the world faces a devastating outlook for the next two decades (2010-2030), with all the odds stacked against humanity. In fact, we believe that the devastation may become deeper and harsher as further decades pass, lasting well beyond this century. We wish, therefore, to stimulate a collective reflection on this period, a period that is awesome in its collapse, paralysing the responses of many, and setting in train a long decline in industrial civilisation. A tidal wave awaits us, and we must meet it with a prepared and co-ordinated response.

Readers may well ask two questions at this juncture. The first, 'Why these particular dates (2010-2030)?' The main horizon that has been indicated, 2030, is because of the fact that around that time there will be very substantial, decisive changes in relation to the supply of fossil fuel. The availability of coal will enter a crisis stage at that point. This crisis will be added to a decline in the overall flow of fossil energy that has in fact already begun. We have now entered into a Peak Oil phase, and it is expected that we will enter into a Peak Gas stage in the early 2020s. The foundations on which global capitalism has become an overwhelming force will therefore be really undermined around the 2030s.

Of course it is possible that global capitalism will explode in the coming years into a series of new authoritarian and conflictual 'regional capitalisms', reducing its current world dimension to a residual level. And, while the impact of the peaks in world oil and gas will be formidable, there could be an effort to partially reduce it by turning massively to coal (something that is already taking place) and to other energy sources (nuclear and renewables). However, global capitalism currently has no alternative plan B to fossil fuel that is either feasible or available and therefore is absolutely dependent on fossil fuel. For this reason, by 2025 or 2030 at the latest, and perhaps prior to this (2020), the decline of available, exploitable and usable coal will be added to the decline in oil and gas, activating the progressive collapse of industrial societies, since these will no longer have the sap that makes them viable (Heinberg, 2009; Zittel and Schindler 2007; Prieto, 2010).

Other resources are also impinging on the coming crisis. First is the issue of fresh water, Blue Gold as it is called, a vital resource, the increasing scarcity of which is already manifest in broad swathes of the globe (including the Arab world), and its control and access will likely generate significant conflicts in the future. Second is the issue of environmental systems. Up to now, these systems have been used in a predatory and gratuitous form that has included a high level of contamination (including genetically modified) and the dumping of every type of waste. The generous 'biosphere' that has been available to be engulfed by the urban-agri-industrial metabolism, or to be used as a garbage dump, is now rapidly closing-up (Fernández Durán, 2011).

The possible dates we have indicated are therefore not unreasonable, although of course they may experience plausible variations, given that in any human – especially geopolitical – processes it is difficult to specify exactly how they will evolve. This is particularly so when we are talking about complex systems that could vary to a very significant degree, particularly at breaking points. Throughout the text we focus on these breaking points, and especially on the threats of social conflict that are inevitable in otherwise uncertain outcomes.

The second question from readers may be as follows: 'Is this exercise in political fiction not excessively apocalyptic?' We modestly

believe that this is not the case. The current reality is extremely serious for millions of people in the world and it will be so for billions in the next decades, ending up by affecting all of humanity. No one will be immune from its impact, although undoubtedly those who initially suffer the worst consequences will be the weakest social sectors and the most outlying territories. However, when the breakdown of global capitalism deepens and the long decline of industrial civilisation sets in, nobody will be immune from its effects, not even the elite, although there will be winners and losers, depending on how the processes unfold.

Some responses will undoubtedly view our approach as apocalyptic, but these will come from a predominantly elitist and middle-class grouping that believes these events will not take place and above all will not affect them. The elite close their eyes to reality and seek shelter in their unshakeable faith in progress and above all in technology, holding that this final element will always impede the worst. However, we believe the opposite to be true, that attempts to maintain the current hyper-technological society at any cost could precipitate an even more abrupt collapse of industrial society. Therefore, we hold that reality must be faced head on, without masking it. While we expressly wish to avoid an apocalyptic tone, we feel a strong duty to outline future scenarios that we and those who follow us most likely face.

## **The current crisis in global capitalism began around 2000**

The title of this book notes the years 2000–2030 as the period for the breakdown of global capitalism, and this is no coincidence. We believe that while the global financial crisis began in the summer of 2007, a number of serious structural changes occurred earlier that indicate the year 2000 as the beginning of the crisis of global capitalism. Several of these changes come to mind quite readily. Inevitably, the change in the cost of fuel is top of the list. In recent years, there has been a very significant increase in energy prices, specifically in the price of oil. After maintaining a stable price structure more or less constantly since the mid-1980s, reaching an historic low in 1998, oil prices suddenly shot up in the early years of the new decade, and the price of crude oil and of gas has accelerated since then, with only slight fluctuations. Next, the year 2000 saw the collapse of the dot.com bubble, leaving serious financial disarray in its wake. And prior to that, in 1997–1998, a monetary–financial crisis throughout South-East Asia (with the exception of China) had significant repercussions in the countries peripheral to the new global capitalism (from Russia to Latin America).

The end of the twentieth century and the early years of the twenty-first saw the rise of resistance to the current world order, manifested in a series of socio-political struggles globally. From this resistance emerged the Anti-Globalisation Movement and the World Social Forums. New and important resistance movements emerged also in Latin America, e.g. Que Se Vayan Todos! in Argentina, the Water War

and Gas War in Bolivia, and the Aymara rebellion in the highlands. Finally, 9/11 marked an important change in world governance with the Bush administration's response to the downing of the Twin Towers in the heart of Wall Street by Al Qaeda. From that point onwards the United States sought to maintain its world hegemony *manu militari*, in Afghanistan and Iraq, attempting to control the world's supply of oil and gas in the Middle East and Central Asia, and also in the Near East, via Israel. A further goal was to support the dollar in the face of a strengthening euro. This heightening of control began to unfold at a time when global capitalism was becoming increasingly multi-polar and the West was beginning to gradually lose its dominant weight on the economic and cultural front though not on the financial or military front.

After that, the West, especially the United States, set itself on a crazed race forward to maintain its global superiority, promoting major deregulation of financial markets, reducing taxes on the rich, and lowering interest rates to encourage growth. All of this was combined with a Keynesian-type expansion of credit to stratospheric levels, through the financial world of Wall Street. The result was a series of inflationary bubbles (e.g. property, equities, new financial products), with disastrous worldwide dimensions. These bubbles began to explode in the summer of 2007, culminating in the collapse of Lehman Brothers in September 2008. At the same time, the price of oil reached alarming levels (from \$70 in 2007 to \$150 in 2008), reinforced by speculation and eventually becoming one of the leading causes of the bursting of the financial bubble.

At the same time, global capitalism, renewed and multi-polar, began to push for a global governance that was increasingly authoritarian, in the heat of the War on Terror. This attempted to 'legitimise' the response of the United States and the Western world, but also had a strong component of socio-political repression, adopted by a number of emerging States to drown possible domestic responses. Such governance became a type of planetary State of Exception, implying a significant regression regarding political rights and citizens' rights. The 'happy globalisation' of the 1990s had come to an abrupt end, and the global crisis that emerged openly in 2007, in all its multi-

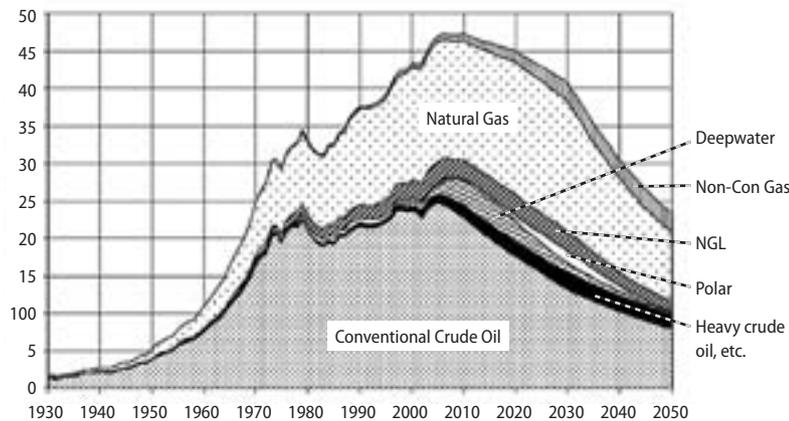
dimensionality, sounded the death-knell of the self-regulating market, harking back to the Great Depression of the 1930s.



## Peak Oil and the consequences of the new era of declining energy

This section deals with the progressive exhaustion of a hitherto unending flow of fossil fuels, oil in particular (see Figure 1), and the serious consequences of this for humanity.

**Figure 1: ASPO profile of past and future oil and natural gas extraction**



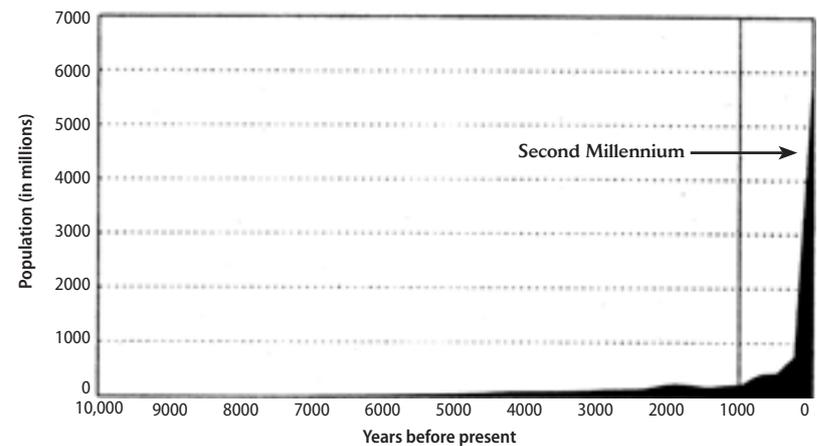
Source: Prieto (2010)

Historically, after every crisis of capitalism, capital itself became strengthened and more concentrated (the Schumpeterian concept of ‘creative destruction’). However, that will not occur this time, even if

it appears to do so for a brief period. This is because declining fossil fuel supplies will have dramatic consequences for the dynamics of the accumulation and the centralisation of capital, in particular financial capital. Peak Oil will mark the beginning of the end of the era of fossil fuels, and everything indicates we are in fact now reaching this point or are about to reach it (Heinberg, 2006 and 2007; Greer, 2008 and 2009; Prieto, 2010).

And so ends the first phase of the Oil Era, an era that lasted some 150 years. During this period, the world population grew six-fold and the urban population multiplied more than 50-fold (Fernández Durán, 2009). This was unparalleled growth in historic terms, a growth that would not have been possible without an open tap on Black Gold (see Figure 2).

**Figure 2: World population evolution throughout history**



Source: Christian (2005)

Moreover, this era witnessed a huge boom in financial capital, manifested as debt at the heart of a system that was based on the confidence that future expansion would act as a subsidiary guarantee of current debt. Undoubtedly the second half of the twentieth century was the golden age of the Oil Era, when consumption shot higher and the metropolitisation of the planet exploded. The second phase

of the Oil Era, now dawning, will witness a decline in the flow of oil, followed by a decline in the flow of natural gas, along with a significant increase in price. This will have an impact on everything that depends on that fuel and will essentially involve the entire industrialised productive (and services) apparatus, along with transport and territorial dynamics. Clearly, such a profound disruption will have tremendous repercussions.

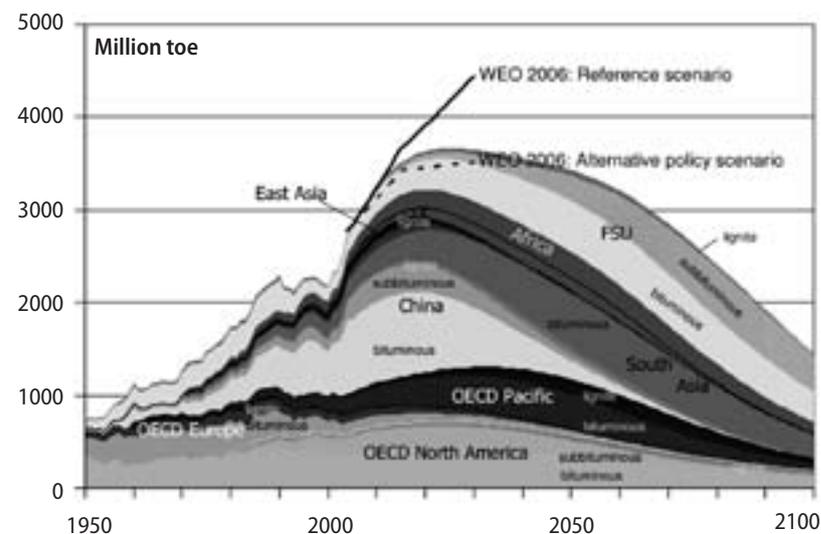
This is particularly true since oil provides a very important energy subsidy, bringing down the costs of obtaining other sources of energy (carbon, gas, hydroelectric, other renewables and even nuclear). Moreover, oil is also used to obtain and transport all types of minerals and materials. This has generated a situation of unprecedented global abundance. However, with Peak Oil, the era of cheap energy will be over forever, something that will impact on the entire economic system and above all on the monetary–financial system. The impact will be particularly harsh in terms of motorised mobility and industrialised agriculture, the two Achilles heels of the current urban-agri-industrial system, especially in its more globalised dimension. Additionally, the so-called law of decreasing yields will become patently clear in the next few years.

During the past 30 years cheap energy has made possible new technological developments (e.g. Information and Communication Technology (ICT)). At the same time, these technological developments enabled an increase in energy efficiency per product unit. However, this energy efficiency has been completely overwhelmed by an increase in growth and consumption, causing a spike in every type of energy demand – the so-called Jevons Paradox or Jevons Effect. All of this has allowed for a heavy substitution of human labour by machinery (generalised automation), increasing productivity to a significant degree and reducing labour conflict at the same time. Moreover, future capital has been imported into the present, through the massive expansion of credit, which has strengthened growth and consumption at the cost of the overwhelming indebtedness of societies.

However, as noted above, the decline in the flow of fossil energy, via Peak Oil and later Peak Gas, will have a significant impact on economic growth, due both to the sudden increase in prices and to

its progressive scarcity, leading eventually to a downward spiral that is endless (Heinberg, 2006). This will result in the breakdown of the current financial system, based as it is on a massive expansion of credit. The financial system will indeed be the first to break once the energy decline really kicks in, as it will no longer be able to sustain its constant expansion, and the rapid decline in growth will make it impossible to pay the debts that have been contracted (Bermejo, 2008).

**Figure 3: Past evolution and possible future world carbon extraction**



Sources: Zittel and Schindler (2007) and Heinberg (2009).

The oil ceiling coincides with that of the other fossil fuels, because these others cannot compensate for oil. As a result, one might say there could be three ceilings in one. However, in formal terms Peak Gas will come a few years later (Figure 1), in the middle of this decade (2015), and Peak Carbon in the middle of the following decade (2025) (Figure 3) (Heinberg, 2006, 2007 and 2009; Bermejo, 2008). The ending of the era of fossil fuels will then be rapidly underway, and will continue for a few more decades. However, the Oil Era will end much sooner than the world oil supply dries up, because global capitalism, made possible by Black Gold, will crumble when its decline begins.

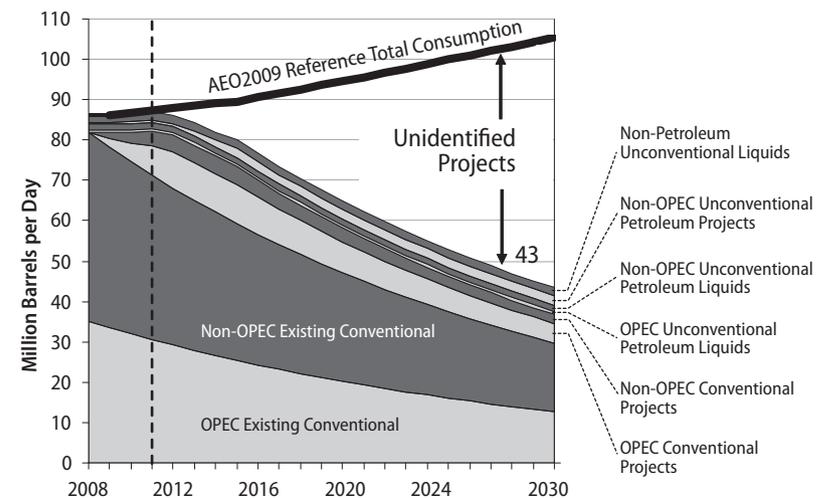
In the past, when societies experienced energy crises they generally managed to weather them by controlling a greater energy flow. This has been a frequent pattern in the wake of significant crises and collapses. Such a process, punctuated by significant breakdowns and regressions, and by historic socio-political complexity, has been strongly impelled by fossil fuel for more than 300 years. It has been known as the Era of Industrial Civilisation. This era has had the daring to challenge the laws and the limits of the biosphere. But it is now on the point of beginning its decline – after a dazzling and extravagant *belle époque* finale during the past thirty years, having come through the threatening energy crisis of the 1970s (Fernández Durán, 2008). However this time it will not be possible to avoid calamity, in its overwhelming global dimension, and society will not emerge from it enjoying a greater energy flow.

Energy decline is therefore unavoidable, as is the breakdown of global capitalism and the long decline of industrial civilisation. Without being fully aware of it, we have already entered on the downward path. We await the imposition of the dictatorship of net energy; and the law of entropy will explode with unusual force, something we have so far managed to ignore. This gloomy scenario is because there is no feasible or available energy plan B (hydrogen, fusion, etc) that can sustain industrial civilisation. Because of the energy intensity of fossil fuel, no other source, or combination of sources, can fill the tremendous gap that it will leave in its decline. Furthermore, a number of centralised or industrialised renewable energy sources that are being put forward today, e.g. photovoltaic solar and thermo solar, sources that in fact produce the lowest net energy when we consider their entire life cycle, would not be feasible without the energy subsidy they currently receive from cheap oil and abundant state subsidies.

## Physical inability to close ‘the jaws of the crocodile’ - energy supply and demand

According to forecasts from the International Energy Agency (IEA), in order to meet world oil requirements in 2030 there is a need to bring additional supply into the market, a supply that would equate to that of six new Saudi Arabias (IEA, 2009) – a material impossibility as indicated in Figure 4.

**Figure 4: Foreseeable evolution of world supply and demand of liquid fuels**



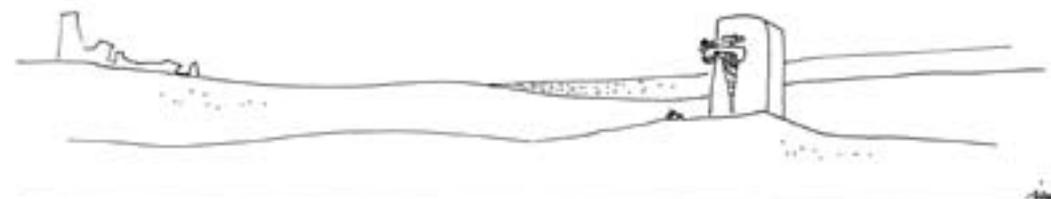
Sources: Prieto (2010), IEA (2009)

The energy forecasts for the evolution of the global urban-agri-industrial system are daunting and the fossil fuel supply, oil in particular, is about to begin its decline, without any feasible alternatives in operation. The IEA has stated that ways to close these 'oil jaws' will be found, through 'not yet identified' extraction projects, but recognises that as of 2012 the 'jaws' will begin to open for the first time (Prieto, 2010). However, a recent report from the German Army (Bundeswehr), cited by *Der Spiegel*, places Peak Oil in the year 2010 (Schulz, 2010), echoing an ASPO (Association for the Study of Peak Oil) forecast that had earlier indicated a similar timescale, predicting also strong negative impacts and resulting socio-economic uprisings.

Oil does not have an easy substitute, as it is our principal fossil fuel energy source. Given its high energy density (three times that of carbon), its easy management and transport, the multiplicity of its potential usages (petrochemical industry), and above all because of the difficulty of substituting for it in motorised mobility (by road, ocean and air), it functions as the key circulatory system of global capitalism. Global capitalism depends on black oil derivatives to meet 95 per cent of its requirements (Heinberg, 2006). Likewise, there is an extreme dependence on crude oil in the agribusiness sector and in a highly urban world. However, massive efforts will be made to cover the enormous energy and functional void that oil will create in its decline. This can only be partly compensated for by turning to natural gas, liquids from the treatment of coal (very expensive) or the more than contested and high-impact agri-fuels, which furthermore have a low energy density. These alternatives would in any case be extremely difficult and expensive to put in place.

For this reason the impact of Peak Oil will be intense in the short and medium term, as it can only be partially compensated for by turning to other fossil energy sources, such as renewable and even nuclear alternatives. The powering of vehicles by natural gas or by electricity, for example, calls for the construction of a new electric energy distribution infrastructure, which in itself implies a massive consumption of fossil fuel. Moreover, it is important to underscore that the partial energy options that are available will be reduced as we

enter the decline of natural gas and later that of carbon, producing an abrupt energy collapse by 2025–2030 (Heinberg, 2009).



## **Technological impossibility of ‘broadening’ the ecological planetary frontiers**

Up to now the threat of fossil energy decline has spawned the development of a number of complex technological solutions (Fernández Durán, 2011). However, the ‘broadening’ of the global ecological limits that such solutions demand have already been exceeded in terms of the planet’s bio-capacity and already decisively affect many planetary ‘environmental services’. Moreover, if this complex technological push is attempted in the future, the global ecological frontiers will become even narrower. The reason is that in the attempt to ‘narrow the limits’ through technology, increasingly scarce fossil fuel sources will be depleted more rapidly, creating an even more profound breakdown in a short period of time. These efforts therefore are condemned to failure.

Cheap and abundant fossil fuel has impelled technological invention, the extraction of resources, and an explosion in automation, the production of goods, and consumption - of food in particular. Technology can do marvellous things and has been doing so for 200 years, most notably in the past 30 years. The development and growth period of Information and Communication Technology (ICT) has made current global capitalism feasible and has in fact impelled it. However, the rising expense of energy will render impossible many of the extractive projects that provide material inputs for the current global urban-agri-industrial metabolism and the Information Society

itself. The result will have a negative impact on the viability of complex technologies, making it increasingly difficult and expensive to technologically address the negative fall-out emerging in this metabolism. Furthermore, it must be noted that it is only in central spaces of global capitalism that such technologies have actually taken hold, and this at enormous expense.

The increasing expense and scarcity of available energy, above all in terms of net energy, will fundamentally change the productive, technological, territorial, social, political, cultural and even symbolic landscape. The prosthetic-machine driven culture of recent decades, a characteristic of our hyper-technological society, will progressively enter into crisis and will gradually head to the garbage dump of history. In this way, the growing substitution of human and animal work by machines will grind to a halt. Generalised automation will enter into a profound crisis and there will likely be a slow return to human and animal work in productive and reproductive processes. In fact reproductive human work, largely carried out by women, has never disappeared. This implies a return to a new social conflict, as the ‘energy slaves’ that we have enjoyed begin to disappear – currently, the average citizen in the United States uses 100 such ‘slaves’ a day.

History in the past two centuries has been marked by the progressive substitution of human and animal muscular strength, along with other sources of previously used solar, renewable and non-industrialised energy (wood, wind, water currents), by fossil energy, nuclear (in a residual manner) and other forms of a renewable nature, industrialised and centralised. From now on we will witness the opposite process, although this will not be abrupt, homogenous or tension-free. The twentieth century has witnessed the greatest and swiftest productive and socio-political expansion in history, in terms of scale, reach and complexity, but the twenty-first century will likely see its contraction and simplification, in parallel with the great decline of energy resources (Heinberg 2007 and 2007; Greer, 2008; Sempere and Tello, 2007).

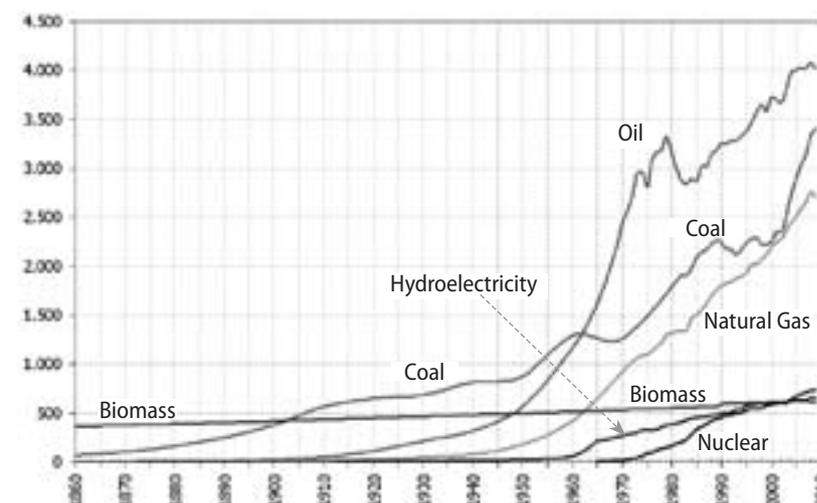
## Energy crisis, climate change and ecological collapse – a deadly triangle

The massive use of fossil fuels has activated two new, significant dimensions of the global crisis: climate change and an ecological collapse. The first issue, climate change, has received much attention in terms of debate and discussion, while the second, ecological collapse, has up to now been a great unknown, receiving even less attention than the global energy crisis that we face. This is particularly the case regarding the destruction of the biosphere, with global capitalism now provoking the sixth extinction of species in the history of the world (Fernández Durán, 2011). The development of productive forces, sponsored by the functioning of capital and made possible by fossil fuels, has had a fatal downside – the development of destructive forces generated by the urban-agri-industrial metabolism. And these forces have hit the biosphere with appalling consequences (Valdivielso, 2008).

This destruction has become more critical in recent times as higher quality, more accessible fossil fuel became exhausted, and there has been a need to exploit new resources of an increasingly lower quality. The problem of accessing these oil sources has become more particularly acute and more difficult to reach and place on the market – e.g. heavy oil, bituminous sands, crude oil in deep or very deep water, arctic oil or oil in tropical jungles. Increasingly, carbon (coal) is used to meet accelerating energy demands, especially for electricity, and because carbon is the most contaminated of the fossil fuels, it is the one that contributes most to the ongoing problem of climate change.

Indeed, the twenty-first century is becoming the century of carbon, as was the nineteenth (Figure 5) (Murray, 2009). Besides, in the twentieth century, the Era of Oil, carbon did not disappear from usage. Indeed carbon consumption increased five-fold during this time, even though it was not so 'visible'. Today, carbon is responsible for nearly half of the world's electricity generation, reaching 50 per cent level in the US (Heinberg, 2009). Dirty carbon is the key energy driver of our hyper-technology society, dependent as this is on a vast ocean of cheap electricity for its operation.

**Figure 5: Evolution of world energy production/extraction 1860-2009 (in million ToE)**



Source: Iván Murray (2009)

It is obvious then that the energy crisis, climate change and a global ecological collapse are intimately related and configure a deadly triangle for the future of humanity and planet Earth. Interestingly, one of these vertices is being discussed at length, even if superficially, in a number of corridors of power. The political sphere seems to have taken on the concept of climate change and its consequences. But it has totally overlooked the more imminent energy crisis and the eco-

logical collapse that is already taking on the dimensions of a global ecocide.

This focus on climate change by elements of the establishment is ironic, given the fact that the energy decline is a more significant problem in the short term. Despite the gravity of the problem of climate change, it has not yet impinged on the central dynamic of capital growth and concentration, although of course it will do so in the middle and long term. Likewise the imminence of ecological collapse, perhaps the most serious problem for the future of humanity, is becoming a greater problem for the dynamics of capital growth and accumulation than ongoing climate change, whose worst consequences have been manifested to date in the ecosystems and territories of the most peripheral spaces and on the most impoverished populations.

We will attempt to address the reason for this enormous paradox later in the text (Fernández Durán, 2011b). In the meantime, it is important to remember that ecological problems must always be contemplated from a perspective of political ecology, that is to say, the logic of power. These problems form part of the operating system of global capitalism, and its power structures (political, business, and military) are prepared to reveal some problems and hide others. This is all well planned and accords with self-interest, wariness of tensions and fear of social conflict. It is effectively managed through the manipulation of information, language and political discourse.

## **Breakdown of social reproduction and the crisis of care – the great forgotten**

The logic of the operation and expansion of global capitalism is not only hitting the limits of the biosphere but is creating increasingly unsustainable situations in terms of inequality and the social reproduction capacity of human societies, above all in the major metropolises of the planet. Many of these vast spaces are now increasingly socially polarised and ungovernable. This is particularly true of the mega-cities of the global South, where a multitude of anti-social behaviours proliferate and where an effort is made to confront them with a heavy increase in repression and in prison populations. In these metropolises, poverty and violence hit hardest at women, on whose shoulders fall the tasks of care and social reproduction.

There is a growing conflict between the logic of capital and the logic of life. Capitalist expansion depends on two essential arenas in order to continue growing: nature and the domestic sphere, both free up to now, and both to a great extent reaching the limits of their capacity to sustain. The impetus for this is twofold: first the energy and ecological collapses currently underway, and secondly the unstoppable crisis of the tasks of care and reproduction. These tasks are essential to the maintenance of human and non-human life. Moreover, all human beings are interdependent and eco-dependent – the idea of a competitive *homo economicus*, independent of others and of nature, is an absolute fiction (Herrero, 2008; Orozco, 2008; Charkiewicz, 2009).

However, the invisibility of the energy and ecological crises and of

social reproduction is very notable. The Global Village has an enormous capacity to hide things, and furthermore the institutional and corporate message has been that, despite everything, we are walking towards 'social and environmental sustainability'. These attitudes have fostered an unusual complacency towards global capitalism. Such complacency is also lubricated by the consumption capacity of the middle classes, particularly in the central countries and above all among the global elites. Moreover, the pattern of living and consumption of those sectors is what drives the demands of the world population, activated by a publicity industry that projects them to the entire world. But the global urban-agri-industrial system is like an iceberg, and we are only shown its benign side, that is to say its visible side. Its darker, deeper side is hidden from us, invisible in media terms, remaining generally submerged. Or it is projected every once in a while to spark collective fear, generate passivity and guarantee the governance of societies.

However, this dark side is becoming increasingly difficult to hide because of the multi-dimensional global crisis that is underway. The crisis is creating a situation where a significant part of humanity has become superfluous to the dynamics of capital. The poor hold no interest for the power capitalists, either as producers (there is too much labour) or as consumers (there is too much misery). The world of labour has therefore entered on a serious downside *vis-a-vis* global capitalism, but this situation will undoubtedly change when the energy crisis explodes in all its ferocity and globalisation breaks down, demanding once again the input of human and animal labour.

## Between two slogans: 'Save the Planet' of the new Green Capitalism and 'Business as Usual'

Global capitalism is today hovering between continuing with 'Business as Usual', within the current energy, environmental and geopolitical conditions, and adopting the 'Save the Planet' position of the new Green Capitalism. Up to now, the first position has been clearly represented by the United States and to a greater or lesser extent by other central and emerging world powers, e.g. Australia and Canada, also China, India and Brazil; in other words those who did not sign the Kyoto 1 Protocol. The second position is represented mainly by the European Union and to a much lesser extent by the others who signed the Kyoto Protocol or who benefit from it, but who today tilt toward the first group. These others are mainly Russia and Eastern Countries who benefited through the sale of what is known as 'hot air', i.e. the CO<sub>2</sub> that has not been emitted since 1990 as a result of the industrial collapse of the USSR and its area of influence.

Prior to the outbreak of the global crisis (2007–2008) and up until the failed Copenhagen Summit on Climate Change, it looked like it would be possible (although not without tensions) to implement the so-called 'Green Way' of global capitalism, which would be made concrete in Kyoto II with a global reach, further developing the path that had been undertaken by Kyoto I.

The election of Obama to the presidency of the United States seemed to indicate that the so-called 'Green Way' was unblocked, as



it also had support from a significant part of the corporate world (the world of Davos principally). However, the outbreak of the global crisis, the force of dominant economic interests and the growing tensions within the G20 (the main world state actors who represent 85 per cent of the world GDP and two-thirds of the global population) are stalling the 'Green Way', despite the fact that China is becoming the main exporter of infrastructure for renewable energy and Brazil is a giant of agri-fuels.

The Cancun Summit once again certified the growing drift towards 'Business as Usual', to the detriment of the 'Green Way', as evidenced by the fact that oil has once again surpassed \$100 a barrel, after having dropped in 2009 towards \$40 a barrel due to the fall in growth provoked by the recession – recovering once again at a world level in 2010, primarily due to the economic boom from emerging nations, which once again propelled the consumption of Black Gold, renewing the gradual but steep increase in prices.

Moreover, the profound crises and events that are taking place in the Arab world could mean that in a short period of time oil prices will sky-rocket. At time of writing Libya was in crisis, and there was talk that oil could reach \$200 a barrel. The strong rise in price of crude oil is perhaps the best indicator that we are already at the point of Peak Oil, given the incapacity to substitute the supply that a member of OPEC like Libya creates. Libya is of secondary importance because it 'only' produces 1.6 million barrels a day, while world consumption is 86 million barrels a day. The situation in the Arab world has set off all the alarms, with talk once again of an energy crisis. This occurred briefly in 2008 when oil reached nearly \$150 but it immediately disappeared from public debate when it fell abruptly in 2009 to a quarter of this historic figure.

It is interesting that there is such a weak collective memory in this area, and we can only assume that it is fuelled by a determination to avoid publicly confronting an energy crisis of historic dimensions such as the one we are currently mired in. Only when the tremendous force of the true facts put global capitalism between a rock and a hard place, will the power structures in different societies begin to accept this incontrovertible reality. Rises in the price of crude oil affects the

entire operation of global capitalism, and can therefore endanger the 'recovery' that has begun. Moreover, these oil price rises fully impact all societies in the world because of the consequent rise in the price of every other commodity (e.g. food, transport, energy), and contributes to new cycles of socio-political conflict. The strategic thinking centres in the main industrialised countries are fully aware they do not have available alternatives to confront this serious energy crisis. For this reason they flee from public debate, vainly hoping that the situation will resolve itself.

However, returning to the 'Green Way' of global capitalism, which consists in trying to carry out an energy transition, without questioning the logic of global capitalism, and therefore without putting a stop to capitalism's intrinsic need for constant growth and accumulation, using everything at hand to achieve this, but with an impromptu 'Green' technology added. Of course this involves continuing to rely on oil and natural gas, while aiming to contain their use. But above all it promotes nuclear energy, agri-fuels and centralised renewable energy. This renewable energy, of much lower density, is the epitome of all these choices, with a strong technological component, and is the 'Green' banner that is waved at every turn.

Moreover, agri-fuels and nuclear energy are promoted as the most adequate ways to combat climate change, as they do not emit CO<sub>2</sub>, we are erroneously informed. Proponents obfuscate regarding the negative side-effects of these, e.g. in the case of agri-fuels, the aggravation of the greenhouse effect due to the further push on the 'agricultural frontier', the boosting of industrialised agriculture and the breakdown of the traditional rural world. Coal is also not ruled out but comes with the label 'clean' and with proposed complicated mechanisms to capture and store CO<sub>2</sub> aiming to reduce its impact.

However, this means more energy consumption and more costs, apart altogether from a very complex and expensive technology. Energy transition is a square peg in a round hole because, as we have already pointed out, there is no available or feasible plan B, even though it is claimed that there is. Moreover, this transition is accompanied by the so-called emissions trade - the Clean Development Mechanism (CDM) and Reducing Emissions from Deforestation and

Forest Degradation (REDD). The latter involves mechanisms to reduce emissions by stopping deforestation and the degradation of forests. However, these hide a growing transnational appropriation of natural forests and their biodiversity, as well as impelling forestry mono-crops, and the process is greased by monetary transfers to the elites of the global South. All of these measures are intertwined with the interests of capitalist expropriation and are increasingly financialised, making possible their expansion and encouraging the creation of new markets and speculative bubbles.

However, the 'Green Way' is showing itself to be increasingly expensive and complex, and therefore the situation appears to be once again tilting toward the 'Business as Usual' scenario. Certain obligatory 'Green' touches are adhered to, on the one hand, while on the other ecological restrictions are lifted to boost growth. This is a schizophrenic position. The current 'Business as Usual' focus (current because it cannot be as it was before, even if it wants to) consists in growing and increasing the systemic complexity, consuming increased amounts of energy, and resources, in the cheapest possible way, according to the geological, socio-political and territorial determinants. Its *energy mix* would include components of fossils (to a greater extent than in the 'Green Way'), more nuclear, more coal-to-liquids (CTL) - a conversion of coal into liquids similar to oil, more agri-fuels, more centralised renewable energies (although with far less weight than in the 'Green Way') and far less complex regarding the use of coal in any form. Therefore, no 'clean (and expensive) coal', to appease a restless population.

One example of the renewed 'Business as Usual' attitude is the United States, whose policies have undergone certain changes with Obama - conditioned and modified by Republicanism and the powerful oil sector. Others are Australia (although the new Labour government has introduced certain changes), the countries of the Persian Gulf and to a greater degree China and India. In each case there are different reasons for adopting this position - but essentially these are countries who did not adhere to Kyoto I and who are opposed to Kyoto II.

The rest of the planet remains expectant, above all the 170 states outside the G20 and in particular those which do not have fossil fuels

(or are exhausting them), waiting to see what the powerful do and what crumbs they might obtain from the two models. For now it would appear that the updated 'Business as Usual' position has won. This is particularly true after the enormous failure of Copenhagen, where the EU was marginalised, and because of the lack of substance in what was obtained in Cancun. In the next two decades, we will see how these positions become concrete, metamorphosing and even mixing these two 'extreme' paths of the evolution of global capitalism. Neither position is aimed at an open reduction of global energy consumption or a sustainable energy re-conversion. The intrinsic need for constant growth and accumulation makes the race ahead obligatory, in one way or another, exhausting fossil fuels of increasingly lower quality and higher costs.

The only actors who can bet on a certain forced post-fossil transition are those weak and peripheral states without economic or political-military capacity to access fossil fuels that are increasingly scarce and expensive. Such states are without financial clout required in a world market that uses strong currencies, and the majority of them could not resort to military strength if the confrontation between the global power structures over fossil fuels grows worse. But in this forced detour, they could lose their sovereign stability. On the other hand, a few actors have recently emerged who have openly questioned this deadly game among the powerful. They are those who denounced the so-called Copenhagen (Non)Agreement - Venezuela, Bolivia, and Ecuador.

These three nations still contain important reserves of fossil fuels and have governments supported or conditioned by broad-based social movements. But they also follow a model of resource extraction, though they do not bend to global powers, and are using a more redistributive logic regarding the revenues from fossil exploitation. In Cancun, however, only Bolivia was opposed to the insubstantial agreement that was reached and the position of Bolivia was overrun by the concluding Plenary of the COP 16. (Fernández Durán, 2011b).

## Systemic crisis, war for resources and a major demographic shift

The most probable scenario in the next two decades resulting from the current crises of global capitalism will be its breakdown as a world system, followed by the emergence of 'new regional capitalisms' at a planetary level. Regional capitalism will have a very distinctive nature, conditioned by the limits of energy, ecology and climate that the capitalist system will encounter in its suicidal detour. The breakdown of global capitalism and the irruption of regional capitalisms, in strong competition among themselves, implies systemic chaos and open rivalry for raw materials and markets among the main world state actors (the states from the group of G20 or regional groups within it – EU, IBSA (India, Brazil, South Africa), BRICS (Brazil, Russia, India, China, South Africa), UNASUR, NAFTA (USA, Canada, Mexico). The chaos and rivalry will be compounded by an increasingly unregulated and highly conflictive competition among those states, which could lead to an open war for resources and the establishment by force of areas of influence.

Such a scenario has echoes of inter-imperialist rivalry, a rivalry that dates back to the beginning of the twentieth century, but it will also be conditioned by the transition of an industrial world that up to now has been characterised by 'abundance' to a variety of societies that will be marked by scarcity and decline (Greer, 2009). Undoubtedly this is not the option of the advocates of the World of Davos (the current world of massive, mostly Western, transnational and financial

corporations), but gradually it is being forecast as the most probable route for the desperate path of global capitalism. Besides, all of this will be punctuated by a demographic explosion, with heavy regional imbalances - an explosion that will likely be halted and reversed as the systemic crisis worsens. Nevertheless, the migratory currents will for a time continue to rise from territories that are most lacking in resources and in the strategic capacity to maintain their populations.

The systemic crisis of global capitalism will lead to profound world changes, the likes of which have not been witnessed in more than 500 years, when the dominance of the West (and capitalism) began to emerge. Enormous fluctuations that are difficult to predict may be activated as a result of the tendency within global capitalism to push its limits to the very extreme. This is already taking place in several areas (regional and planetary bio-capacity, for example), although the signs are still not clearly visible due to the capacity of the 'ghost' load that fossil fuels have provided to date.

When a system such as global capitalism abruptly withdraws from its dynamic of growth and unstable equilibrium, uncontrolled processes can be unleashed. If we look back at the ruptures caused by, for example, the French Revolution or the Russian Revolution, we observe that despite their immense force, which led to extraordinary change (Wallerstein, 2009), both were finally assimilated and at the same time boosted the system that was already emerging: industrial civilisation. This assimilation adopted two distinct paths during a major part of the twentieth century: Western capitalism of a liberal character and State capitalism with a 'communist', socialist character. And when State capitalism entered its crisis and collapse, it was incorporated within global capitalism. But this type of transition will not happen now, as we are already in the climax of industrial civilisation, and it is not possible to extend it, since its decomposition and demise has already begun.

The long decline of industrial civilisation will imply a world demographic collapse, and therefore we are close to the peak of an historic world population (Heinberg, 2008). The democratic collapse will take place long before the time forecast by bodies such as the UN, as such forecasts consider that the position of '*Business as Usual*' could continue without set-back.

## Thirty lost years and a 'Full World', with reduced options for possible futures

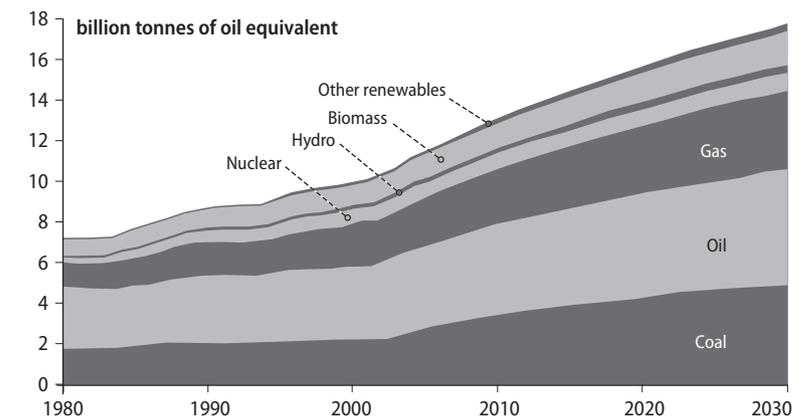
Three decades after the energy crisis of the 1970s, global energy consumption has increased by more than 70 per cent (Naredo, 2007). This strong increase in energy consumption has largely been fed by fossil fuels, and in turn the exploitation of fossil fuels has led to their progressive decline and exhaustion. However, forecasts for world energy consumption from the IEA for 2030 are indeed very optimistic: an increase of nearly 50 per cent in the next two decades (see Figure 6), a significant amount of which will come from fossil fuels, with a corresponding increase in CO<sub>2</sub> emissions. All of this is to take place in a world of 8 billion people - 1 billion more than in March 2007. Besides, we are already living in a *Full World* (Daly, 1999), in comparison to the *Empty World* at the beginning of the twentieth century. The terms *Full World* and *Empty World* refer to the rate of consumption of the environmental space carried out principally by the urban-agri-industrial system, a consumption that also depends on the number of people on the planet, with enormously diverse *per capita* levels. A third of human beings consume only for subsistence and with a low ecological impact; a social minority consume voraciously, and a broad swathe of middle classes indulge in the over-consumption of planetary resources.

By comparing the data curves in Figure 1 above (ASPO predictions) and Figure 6 below (IEA predictions), we can observe significant discrepancies regarding oil and gas projections for the period up to 2030. The IEA (Figure 6) assumes that it will be possible to continue

extracting an increasing amount, some 25 per cent more - through 'unidentified' projects. ASPO on the other hand (Figure 1) informs us that the availability of oil and gas will be reduced by approximately 15 per cent, and will be more expensive to extract, more difficult to access and of lower quality (Prieto, 2010). Besides, it has been indicated earlier in the text that coal cannot cover, in operational or energy terms, the significant supply gap that the decline of gas and oil will open up.

Apart from clarifying the contradictory forecasts of future energy supplies, these brief data also allow us to question the demographic and urbanisation projections of the UN - a body closely linked to the IEA.

**Figure 6: IEA projections of world consumption by energy sources**



Source: Prieto (2010)

Reflection on these contradictory forecasts confirms for us that in the past 30 years of heavy expansion of global capitalism we have missed the opportunities to respond to some dramatic scenarios. We have passed over the possibility for a non-traumatic post-fossil fuel transition. And we will lose even more ground in the future if we do not begin to react now. We no longer have the luxury of decades within which to operate a theoretically-grounded, gradual transition toward a post-fossil fuel world, as was the case in the 1970s. Rather,

the paltry amount of exploitable fossil fuels remaining will soon begin to tragically reduce existing possibilities for the future. If we decide to continue pushing industrial society, a dynamic that all existing power structures and the logic of the system itself are counting on, the energy resources needed to begin a real and orderly post-fossil transition will be severely curtailed. Therefore, when the future is the present, in 2030, there will be practically no resources available for such a transition. Moreover, the biosphere will have become an increasingly degraded space, with serious problems of habitability, resulting from the worsening of the ecological crisis and the intensification of climate change.

We will then not be in a *'Full World'*, but rather a *'Replete World'*, plagued with conflict and violence, where a brutal and unprecedented demographic collapse is highly probable. For this reason, the post-fossil fuel transition could become more abrupt and chaotic. In any case, the transition will take place when we reach the geological limits of fossil fuels. Moreover, if a true post-fossil fuel transition has not yet begun when we reach Peak Carbon, there will not be enough available net energy to maintain the urban-agri-industrial system and to tackle a transition that only begins then (Heinberg, 2009; Greer, 2008).

The capacity therefore to intervene and change the dominant path is small and much reduced, but it is not yet at zero point, though during the next two decades we certainly have a full wind against us. However, it is essential to recognise that a new world energy regime of a post-fossil fuel nature, above all one that is emancipating, will not emerge without strong organisation, a capacity for social co-operation, and the willingness to engage in political conflict, ingredients that are not operating today in the vast majority of modernised spaces.

The post-fossil fuel transition, and the way it unfolds, is not just a question of confronting the exhaustion of fossil fuels, but will depend on human energy, political will and the social struggle that will be invested in the transition (Abramsky, 2006, 2010). Moreover, it depends on whether the remaining energy resources are collective property or are privately owned. And everything indicates that the degrowth between now and 2030 will be chaotic, not ordered and just. Nevertheless, it is essential to cultivate and reinforce the seeds

of an ordered, just and sustainable transformation, even in a totally adverse environment, in order to later fortify and generate sufficient critical mass so that the reverse can become true, in future times.

It is also necessary to point out that a post-fossil fuel regime could be extremely authoritarian, implying a *'re-feudalisation'* of social relations. All of this depends on how it takes place and on the conscience, organisation and social strength available to steer it in an emancipating direction. In 20 or 30 years we will see an energy, productive and socio-political system that is very different from the current one. It is not yet clear what form it will adopt, what technology it will have, who will benefit and who will pay the costs, although it is possible for us to venture trends and establish possible variations that we may be able to influence. This is what we are attempting to name in this text. However, while we believe it is possible to make certain predictions with a certain amount of confidence, the concrete form they will adopt is something else and is unknown to us.



## **Financial–corporate collapse, rupture of globalisation, and geopolitical breakdown**

In our understanding, one of the possible future scenarios will emerge in the form of a triad: a collapse of the current financial–corporate world, a rupture of global capitalism, and a breakdown of the hegemony of the United States, and of the dominion of the West in general. These are intimately related, although their occurrence may not be simultaneous. But as has been indicated they will occur within the next two decades, and sooner rather than later. The overwhelming military might of the United States may delay, though not by much, the crisis of US hegemony, a crisis that has been obvious for many years. However, its high dependency on oil, which is increasingly sourced offshore, makes the US particularly vulnerable to the energy decline. Moreover, its heavy dependence on the world of Wall Street and on the dollar as the world currency, along with its elevated fiscal deficit and debt - 10 per cent and 100 per cent of GDP respectively (IMF, 2010), makes the US very sensitive to any financial and monetary crisis. We have been observing this since 2007-2008, although up to now the worst has been contained. What is more probable is that the crisis of the hegemony of the US will be anything but peaceful.

The systemic crisis has therefore entered a phase of progressive breakdown and geopolitical re-composition that will lead to the financial, economic and socio-political decomposition of global capitalism. Peak Oil will herald a permanent and abrupt fall in global economic

growth and a collapse of the world financial system as we know it.

The most fragile link of global capitalism is its financial dimension, although this may appear to be its most powerful, and in the interests of which everything must be sacrificed. In fact, the main central states have dedicated significant amounts of money, obtained by issuing debt, or through monetary mechanisms, to save their financial systems and to contain in whatever way possible the depreciation of assets of all types (equities, real estate, financial). A true global financial coup! And global capitalism has managed, momentarily, despite nearly destroying itself in the attempt, and above all by razing the social order, or its remains, to pay exorbitant interest for the debt that has been borrowed. In this way, the financial–corporate world has managed to move ahead, in some cases becoming more concentrated and taking on greater global scope.

However, at the same time there have been significant re-balances of world power to the detriment of the West. The West increasingly concentrates a greater debt (public and private) and the East more capital, and both are woven together by a network of financial centres and fiscal havens, where a gigantic volume of multinational capital resides and operates without control. And all the while, the so-called *creative destruction* has begun to operate again, at least partially and momentarily.

However, the onset of energy decline implies a deepening of the systemic crisis. Instead of ‘creative destruction’ we are about to witness ‘destructive destruction’, for the first time in the history of capitalism, in particular since the industrial revolution. The industrial revolution produced another revolution – the financial revolution. The private banks loan more money than they possess, thus generating money based on debt, and this does not raise any ‘problem’ if the economy is in constant growth. But if this premise is not fulfilled (beyond a certain time), the system collapses. This is particularly true if a persistent economic decline takes hold, a decline that has no end, as is expected (Heinberg, 2006). It is even more certain as regards current global capitalism, highly financialised and deregulated as it is, and based on a pyramid of endless debt.

The global financial meltdown is a given, and will mainly impact on

the West, marked by the highest volumes of a financial dimension, in particular of a private nature. But it will probably be closely followed by a huge impact on a significant part of the corporate world, the great trans-nationals, the majority also from the West. This is because these are funded through the main financial markets and their operation is based on low energy costs, key components that ensure world trade and the current international highly specialised division of labour. All of this will begin to explode with the onset of energy decline, particularly because of the growing scarcity and high cost of oil, sparking a progressive breakdown and disarticulation of the dynamics of 'globalisation' and the progressive decomposition of major (particularly Western) multinationals, particularly those based on private capital.

However, the collapse in the centres will differ from that in the peripheries, as we are already observing. Emerging states such as China, India and Brazil are experiencing a significant growth rate, while in the Western world, the United States, the EU and Japan have ground to a halt or have entered a recession. But let us not be deceived! Global capitalism operates as one, as a giant, complex, interdependent and conflictive puzzle, and we cannot understand one piece separate from the others. Moreover, it is not possible that one survives alone if the others enter into crisis. This is also true for the newly emerging centres (China and India, for example). How will they emerge without a major consumer like the United States, which up to recently has fuelled the world economy? – likewise if the consumer demands of the EU drop abruptly? And how can these countries emerge powerfully without the raw material and energy resources that are necessary for their operation?

Furthermore, the two new giants, China and India, are quickly consuming their best and most accessible coal reserves (which they depend on for more than 70 per cent of raw energy). This will decisively affect their efforts to maintain high growth rates in the future (Heinberg, 2009). The same can be said about the consequences of the current rising price of oil, which could bring the global recovery that has been underway since 2010 to a halt, leading to higher inflation and interest rates, as well as making investment of all types more expensive. Heinberg in his latest book, *The End of Growth* (2011, at press), tells us

how continuous growth has come to an end, even though there are still relatively significant expansions in some parts of the world, based above all on global capitalism, supported by the main states. Without such assisted capitalism, growth would have already come to an end. And, if it continues, the recent and steep increase in the cost of crude oil could be the definitive, final blow.

Thus the deepening of the global crisis will be manifested in unequal ways across the world and its worsening and eventual impact will depend to a great extent on the availability of energy and natural resources, as well as the way different societies are preparing to confront the energy decline, and equally their greater or lesser vulnerability in the face of the world energy crisis. However, it is important to underline here that global capitalism is principally a series of world power relationships - e.g. emissions of international money, world commercial flows, the global and state institutional framework, hierarchical military power, energy control, regulation of the labour force and migratory currents. It is all on the verge of experiencing very serious mutations. In fact these have already begun, although in an underground fashion that will soon burst through to the surface.

Finally, the breakdown of the world monetary–financial system, provoked and accompanied by the energy decline, may lead to two apparently contradictory global phenomena. It is possible that we will see processes of deflation and hyperinflation at the same time. Deflation will result from the fall in the monetary value of financial assets and real estate. This will apply to the value of assets that, up to now, have housed the monetary and financial wealth of the world: of corporations, massive private fortunes and assets of part of the middle classes. At the same time we will see inflation-spikes, or hyperinflation of the so-called real economy, as a result of the sharp price rises of energy and resources in general. This will also be driven by the race forward by states towards increasing indebtedness, due to the progressive monetisation of their debt and because of the daily more active monetary devaluation that they seek in order to propel growth via exports.

This will be particularly true in the United States when the world no longer has confidence in the dollar as the currency of world he-

gemony. Furthermore, as we have observed, this gap cannot be filled by the euro – a weak currency, without a unified state to defend it, a currency that is being hounded by financial speculation and could even explode in the short term. And neither will the gap be filled by any other currency with even less global weight than the euro - e.g. the yen, the yuan. We are already witnessing a world currency war, with strong tensions between the West and the emerging spaces, incapable of being stopped by the G20, and probably set to increase in the future – a ‘war’ that will lead to an increase in state protectionism and a fall in world trade. At the same time, the value of gold, the world currency par excellence (the Keynesian ‘barbarous relic’), will reach sky-high levels, in the face of the lack of confidence in the world monetary system. Confidence is a key, though fragile, element, in the operation of the world market.

All of this will predictably accompany the explosion of current global capitalism, manifest in an unequal manner on a world scale, before it consolidates in different ‘regional capitalisms’ at a planetary level, capitalisms that will have a strong state component and a high level of conflictive attitudes towards one another.

## **Towards new regional state capitalisms, fighting among themselves?**

When global capitalism breaks down, the most probable scenario is the creation of different regional planetary blocs, which will operate primarily under the capitalist logic, although conditioned by and adapted to new circumstances. What could these be? The scenario that we are attempting to outline will be the one that could take place after ‘the fall into the abyss’ of the current monetary–financial–corporate system. A high-ranking official in the IMF, José Viñals, has noted in 2011 with alarm that in the past three years ‘the world has twice been at the point of falling into the abyss.’ And this catastrophe was only avoided by tremendous state intervention, with all its subsequent economic and social consequences. But what will happen if we *do* fall into the ‘abyss’ (Solé, 2010). Clearly the only actors with the capacity to intervene in the face of an economic–socio–political upheaval of this nature would once again be the states who (still) have considerable power and organisational capacity, i.e. the main world states listed among the G20.

However, in these new circumstances these states will not be able to save the financial–corporate world and the great fortunes – or only partially. First, because they will no longer have the capacity to do so (Jean Claude Trichet, ECB president, has warned: ‘There will not be a second time’), the multinational nature of these financial–corporate worlds making such an undertaking even more difficult. And secondly, because in these circumstances the socio–political aspect will move to

centre stage, replacing the current primacy of the financial–economic aspect. It has been said that we are in ‘a pre-revolutionary phase without a revolutionary subject’. However, this is capable of swiftly constituting itself in an extreme situation. The ‘Que se vayan todos!’ of Argentina in 2001 reminded us of such a position at the beginning of the decade, as did later the grassroots and indigenous uprising in Bolivia. Moreover, something similar took place in Iceland following the outbreak of the global crisis. And recently the revolutions that are shaking the Arab world remind us that no political regimes last forever, especially despotic ones, when societies begin to move and their populations hold to a certain social cohesiveness.

The world that will collapse first will probably be that of private finance, with a strong Anglo-Saxon component, and to a lesser extent a ‘European’ and Japanese one. Later will come the collapse of the corporate world of private capital, hegemonic throughout the Western world. In the context, then, of both collapse and revolution, new regional capitalisms will emerge, indeed are already emerging. New state capitalism is taking hold in China and Russia and to a certain extent in Latin America and OPEC countries. These regional blocs will be propelled by giant multinational companies and will be characterised both by a strong state apparatus and a combative attitude to other regional blocs. Because of their fierce power, they will have a greater capacity for resistance to a global collapse.

The ‘new state capitalisms’ will probably be diverse, but certainly different from those we know today. It is very likely that two central elements in the current system – the financial and monetary elements – will be nationalised. There will be non-financialised capitalisms that are highly interventionist, whose operation and concrete combination of public and private capital will depend on the socio–political conflict they must face. Moreover, there will be industrial societies of scarcity, not abundance. All of this will impact on their productive and institutional apparatus, implying a significant reduction in the outsourcing of their economies, above all where this has been most intense, in the central spaces.

We will probably see an intense re-composition of elites and strong tensions within these multinational power blocs, paralleled by a redefi-

inition of the role of the state. When Real Socialism collapsed, sections of the old bureaucratic communist elites then formed part of the new private oligarchies. We may now see the opposite phenomena, should the ‘new capitalisms of the state’ consolidate (at least temporarily) – a fact that is highly likely in the current circumstances. However, the most likely scenario is that they will be grouped together in regional planetary constellations, or around strong state poles, i.e. around states of geopolitical importance, creating intra or supra state blocs, each with their own centres and peripheries. In fact, these trends already exist. And such regional entities will manage (and even ‘plan’) the different planetary markets, while the world market takes on an increasingly residual role. In this context, current global institutions will cease to exist: IMF, World Bank, WTO, and most likely the United Nations.

In the 1930s, in the middle of the Great Depression, the society of nations entered a crisis because of political–military tensions among its components resulting from the rise of Nazism and fascism, the rise of communism, and a crisis of British hegemony in the world. Now we may witness something similar, particularly because of the tremendous geopolitical gap that the crisis of US hegemony will open up. As Arrighi (1999) writes, no hegemonic transition in capitalism has been smooth or bloodless, and has always involved significant flare-ups in inter-state tensions and a level of socio–political conflict. The current situation is compounded by the fact that no new potential hegemony is envisioned that could relieve the United States of its role (China seems the only possibility) and that, more importantly, could be accepted as such by the remaining state actors that retain some semblance of systemic importance.

No new and long period of expansion is foreseen, as in other times of capitalist hegemony. On the contrary, what has begun is a long decline of systemic contraction and simplification, due to energy and ecological limits but also due to climate alterations. In this context, the most probable development is that we will witness a strong increase in conflict between the different regional planetary blocs, as we did in the first half of the twentieth century. These blocs will need to defend their areas of influence and their access to resources of growing scarcity located abroad, worsening in particular the political–military tensions

in relation to certain key world spaces (Middle East primarily, Central Asia and the Arctic, and also Western Africa and Latin America). This is where the last fossil fuels outside of the central states are located, many of them under 'Islamic soil'. Of course the supply routes will require military protection, and such protection will further raise the cost of transport from increasingly distant places. This is also true in relation to areas located in the global South and the oceans, holders of key reserves urgently required for the urban-agri-industrial metabolism (minerals, water, fish, etc).

In this sense, the political tsunami represented by the explosion of the Arab world (e.g. Egypt, Tunisia, Libya, Bahrain, Yemen) will seriously erode the hegemony of the United States and of the West in the Arab region. The cries for liberty, justice and dignity emerging from the populations (in particular where abundant youth populations are unemployed) against the dictatorships and the theocracies that have governed them for decades, with the blessing of the West, will become more intense. This implies a new 1989 (the transformations that took place after the fall of the Berlin Wall: the 'velvet revolutions' in the East and the implosion of the USSR). It will have a decisive impact on a very strategic area of the world – the Middle East – which holds more than two-thirds of the remaining reserves of oil, reserves that are of higher quality and more accessible than elsewhere. Moreover, the principal capacity of world extraction for crude oil will also take place in this region – more than 20 per cent of the total. As a result, what happens there will be critical regarding the timing and the shape of the breakdown of global capitalism.

Equally, the decades-long conflict of the Near East, provoked by the creation and behaviour of the State of Israel, could be deeply accentuated as a result of the crisis of the hegemony of the United States and the decline of Western influence in the region. It is no coincidence that these are the principal champions of the 'Jewish state'. The hard power of the United States in the region, as well as its soft power, including that of the European Union, has been seriously questioned. This is particularly true for the European Union, which has been absent, internally divided, and without initiative, and has only concerned itself with the threat resulting from the influx of refugees, and with

the defence of its economic interests and access to fossil fuels (e.g. the case of Libya). Obama has managed to have a more open attitude in relation to the changes that are taking place, obligated by current circumstances, and perhaps because he has seen that this is the best way to defend the interests of the United States. Meanwhile the EU has declared itself to be in theory a defendant of human rights in the region, giving it a cynical and deplorable image.

All of this opens new and uncertain horizons in the region, and will most likely lead to growing political–military tensions among the main global state actors regarding such a strategic world space. These tensions have already manifested themselves in recent years as major emerging actors decided to create their own military coordination structure to stop the dominion of the West in the Middle East and in Central Asia: the Shanghai Cooperation Organization (SCO). The SCO was created in 2001 as a world counterpoint to the United States and NATO (after 9/11 and the beginning of the war in Afghanistan). It is currently composed of six member states: China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan and four observers: Pakistan, India, Iran and Mongolia.

## **New geopolitical order, war for resources, systemic chaos and the breakdown of states**

The new world order that is being incubated will be very conflictive and it is possible that we will witness open wars for resources, once the 'stability' created by the world market and global institutions disappears. In very concrete terms, the world market of oil and coal could break down in the face of its progressive scarcity; the gas market only exists regionally due to strong technical determinants and is not likely to ever become globalised. In the new global market it is the West that has the most to lose as it is the West that benefits most from the current world economic, financial and institutional order. Moreover, the economic and productive weight of the West has been displaced to a great extent by emerging global actors, and therefore these may be better situated, initially, in the face of the breakdown of the financial–corporate (private) system, the global market and the current geopolitical framework.

However, this is only partly true, as it is the West that has the greatest military might – the United States to an overwhelming degree, followed by the countries of the European Union. This could give a 'competitive' advantage in the new world order, though only temporarily, as other great global state actors are also in the process of a heavy military and arms development, consuming an enormous amount of resources to prepare their 'war machines'. Moreover, behind this are the powerful business structures that exert pressure in the same

direction, particularly in the West. This perverse dynamic makes it even more difficult, perhaps even impossible, for the emerging states to begin the inescapable energy transition, consuming as it will many economic, material and energy resources on the way, making the post-fossil fuel transition even more difficult. Such a detour could therefore weaken these states or make them more fragile in the mid-term.

In this new global geopolitical framework, the most dangerous confrontation will be among the 'great elephants', the most powerful states, many of them with weapons of mass destruction (nuclear, chemical, bacterial). The worse possible scenario, a war (or wars) of a nuclear character, cannot be ruled out. Such horrors, along with the human disasters that will result, would also contribute to fatally aggravating the environmental crisis, and would lead to the destruction of extensive territories and key ecosystems that maintain life. An open nuclear war would without doubt be a suicidal confrontation, a decision that would be entirely stupid – although human stupidity has played a more important role in history than is often admitted.

As well as this 'great unrest', we will also likely witness an enormous proliferation of 'low intensity' conflicts. These 'low intensity' wars are already on the rise, above all in the so-called failed states on the periphery of the planet and sometimes on the peripheries of the major metropolises. Failed states are those whose power structures are incapable of controlling their entire territory, where in many cases there is a proliferation of 'warlords' and the private security forces of multinational corporations (Fernández Durán, 2010b). The number of failed states in the world will likely increase in the next two decades because of the growing series of crises that state structures will have to manage. Undoubtedly the newest states, the weakest, the most peripheral, states with the most complex ethnic–social realities and with fewer resources, will be the most likely to succumb. Or, in some cases, those that have precious resources but are weak, without capacity for autonomy or defence in the face of the rapacity of the most powerful. Examples of the latter are found in many territories of Sub-Saharan Africa.

Perhaps some 'grey zones' will be created that are not attached or do not belong to any specific bloc, where no one has been able to

establish complete sovereignty, and which are highly disputed by some or all. These 'grey zones' will likely increase and systemic chaos will be their hallmark. All of this will put a brake on growth and lead to a subsequent fall in the global population, as a result of an increase in hunger, illness and all types of conflict. Moreover, the heavy increase in oil costs will mean substantial increases in the costs of food production in industrialised agriculture, which will also add to this human tragedy, especially among metropolitan populations.

But the crisis will also affect the central and most powerful states. In many cases it will increase disruptive tendencies from outlying zones towards their centres of power. These tendencies already exist in, for example, China and Russia but are contained by the strong structures of central state power. The more paradigmatic case is the European Union, a peculiar supra-state regional structure which is already suffering these tendencies. Not for nothing is the EU known as the weakest institutional pole in the West. Moreover, the states in general must not only face the energy crisis, they must also face the harsh problems stemming from ongoing climate change, along with the human migrations this could generate, as well as a worsening of the ecological and resource crises. All of this will have a particular impact on the metropolises and will become clearly evident in the next two decades.

We are already seeing serious problems for states created by the institutional management of disastrous environmental impacts: floods in Pakistan, fires in Russia, the sinking of the BP platform in the Gulf of Mexico. The handling of these catastrophes has caused the legitimacy of the states involved to be further eroded. As Samuel Prince told us in 1920, disasters tend to bring social and political changes.

The new regional state capitalisms will most likely be highly authoritarian structures. In these circumstances, the states best prepared to deal with the new situation of strong tensions and crises will be the current authoritarian states which are already somewhat similar to the 'new state capitalisms', especially because they are still experiencing significant growth rates. Perhaps the least prepared will be the Western states that still have a certain level of 'democratic' practice despite all the difficulties and whose additional institutional hardening will not

take place without a serious internal crisis accompanied by sharp repression and social de-legitimisation.

Meanwhile, the power structures will turn to every type of manoeuvre and manipulation to justify this necessary authoritarian turn. In particular it will involve an impulse towards civil war that pits everyone against the other – those below, and the 'other' within, i.e. racism, xenophobia, homophobia. There will also be an irruption of paralysing, collective fear in the face of the 'other' outside, as a means of justifying possible incursions into foreign lands, rather than self-defence. The existence of an 'outside enemy' makes it possible to bring societies together, just as 'domestic enemies' do.

These state structures, despite their authoritarian power, will be extremely fragile because of their lack of legitimacy, as they will be increasingly incapable of guaranteeing a minimum standard of living and social protection for their societies. This is known as the *Offe Paradox* 'Capitalism cannot coexist with the Welfare state, but it also cannot exist without it' (*Offe*, 1984). Such will be increasingly evident as we draw nearer to the 2030 horizon, when the energy crisis will fundamentally deepen.

Therefore, these huge state dinosaurs will be less capable of managing the new scenarios of a worsening crisis of industrial society, as they will be operating within zones of scarcity and decay. This will fully affect their operation, as well as their areas of influence – those constellations of other states that are grouped together under their leadership and primacy. It will become increasingly evident how these divisive trends will substantially increase, reaching even the central states themselves. They will be dinosaurs in danger of extinction, incapable of reacting because it will be too late, as we enter the long decline of industrial civilisation. When we speak of the 'collapse of complex societies' in determined historic circumstances, we recognise that socio-political, complex organisations have problems simply trying to conserve their status quo, and have to invest more in maintaining the complexity that has been reached, leading to increasing and unmanageable costs (*Tainter*, 1988). This is the law of diminishing returns applied to institutional structures.

Moreover, complex societies are massive consumers of energy

and resources. When the marginal profit of any new investment in complexity becomes negative, the collapse and subsequent move to a situation of lesser socio-political complexity and structural disintegration becomes a forced alternative. The twentieth century was one of expansion, integration and increasing global complexity, destroying to a great extent local diversity, all of this largely due to the exploitation of fossil fuel. However, the twenty-first will be one of contraction and global simplification, which will once again become green, as fossil energy is gradually exhausted.

## **Beginning of the long decline of industrial civilisation – dangers and potentials**

Industrial civilisation has global reach, the first and the only civilisation in history to achieve this, and therefore its collapse will also be global. The beginning of this collapse, the first stage, which we call the breakdown of global capitalism, is, we believe, already occurring and will occur *grosso modo* in the 2000-2030 period. However, the collapse of industrial civilisation itself will not be sudden and total, but rather a long, complex and differentiated process, with possible fluctuations, though always heading downwards, exhibiting a gradual 'decay'. This is what Greer (2008) has called the Long Decline of Industrial Civilisation, a decline that will likely last 200 to 300 years, a period of time similar to that of its development. No one alive today will see the end of the process, but it will perhaps be socially imaginable around the year 2030. By then the crisis of our current way of life and production may be an actual fact, with increasing and generalised blackouts, a crisis in transport systems and the operation of the metropolis, a crisis in the scientific-technological system, in social and cultural organisation, institutional structures, value systems, social ethics, and cosmo-visions – in sum, everything that defines a civilisation. Even the dazzling and supposedly immaterial Information and Communication Society will be in serious crisis by then. It also will not be immune, as we shall see a global energy decline and a scarcity of resources, and its crisis will further impact on the breakdown of global capitalism.

Throughout history, complex societies have consistently been incapable of addressing the crisis of civilisation (Tainter, 1988) and have entered processes of profound collapse for different reasons. Moreover, frequently the elites put forward 'solutions' to these crises that were often counterproductive and in fact precipitated their swifter collapse. This occasion is no different and will demonstrate a clear incapacity on the part of power structures to prevent and react in the face of the crisis of industrial society. This is not surprising, as the entire existence of the elites will be jeopardised, isolated as they already are and obstinate in their own world. They will not make decisions that benefit society as a whole since this would imply a dramatic change in the policies that go against their own interests and inertias. Rather, they will try to intensify those same policies.

Despite the fact that such policies (large-scale empowerment, urbanisation, speed, specialisation and competition) adapted well in the ascending phase, this bid for continuity will lead to a greater deterioration in living, institutional and environmental conditions, and a possible orderly transition will be replaced by a more abrupt collapse (García, 2008; Heinberg 2007 and 2009). This will probably be the scenario that we must confront around 2030, when the world situation will worsen, particularly after the definitive breakdown of global capitalism and the beginning of the progressive disintegration of the different 'regional planetary capitalisms', while the energy and ecological crises worsen and climate change deepens. By that date there will be a significant exhaustion of fossil fuels, something that will become even worse around 2050, because of an abrupt fall in available supplies of coal (Heinberg, 2009).

But when the structure of world power (first) and regional power (later) begins to crack and crumble, producing very harsh conditions for humanity, there will also be new possibilities to empower, in particular from below, transforming and emancipating solutions, solutions that were previously very difficult to propose, manage and realise. These will not be easy solutions, but by then it will be more feasible that they can progress and proliferate in the face of an absence of institutional responses. Such solutions are possible if we manage to reach that temporal horizon in the best possible conditions, having sown the

necessary seeds that could then prosper, changing the correlations of power. If not, the future will be even harsher and the collapse of industrial civilisation even more abrupt. These solutions would be much easier to carry out within the complexity that is implied in (even minimally) democratic environments with 'alive' societies than in heavily repressive, 'dead' societies. The situation will be particularly delicate in highly modernised ('overdeveloped') spaces as these will be the most affected by the progressive collapse of industrial civilisation, above all in highly urbanised or industrialised territories that consume more than three-quarters of world energy: this applies especially to central spaces, but also to the more dynamic areas of the major emerging actors.

The less modernised ('underdeveloped') spaces, more rural, less industrialised, less technological, spaces that consume fewer resources and are more autonomous, will be in a much better position in the face of the long decline. This applies to some 2 billion people in the peasant farmer world and some 400 million in the indigenous worlds of the planet (Mander, 2007), worlds that help 'cool down the planet' and in general use the biomass as an energy source. Furthermore, these worlds will no longer have the enormous pressure they currently experience from modernised society in its relentless expansion, an expansion that is not only physical and institutional but also cultural. It is because vernacular societies have adapted their way of life to the environment that they are to a great extent sustainable. Conversely, it is because industrial society makes an effort to adapt the environment to its way of life that this society cannot survive, above all when it attempts to go beyond the limits of ecological capacity on a global scale (Goldsmith, 1993).

Throughout the next two decades we will probably see a progressive brake on urbanisation processes, but not a return to the rural world – at least not on a massive scale. This will be the case even if living conditions in urban-metropolitan spaces deteriorate intensely, an inescapable fact. The urban-metropolitan inertias are very strong. There is a great deal of capital invested in these highly modernised spaces and there are no alternatives outside of them for the population that has turned to them en masse. These populations have been pushed towards the huge cities, expelled by processes of modernisation and

ransacking in the rural world, and have been attracted by opportunities, riches and glamour; and like Cortes they have ‘burned their ships’ along the way.

There is therefore no easy return. Moreover, the countryside now has fences everywhere, something that is compounded by an increasing appropriation of farm land on the part of the main states and major corporations. All of this means that rural–urban conflicts will proliferate. However, as the current forms of property and power are eroded, new possibilities will emerge of social recovery from the progressive privatisation of goods that up to now has been widely practised. This recovery will depend on the degree of organisation and social and environmental awareness that societies have at that point. It is important to remember that in the past the crisis of power institutions has not normally given rise to the most equitable types of societies, and therefore it is also probable that the era of the depletion of fossil fuels could be even more despotic than the era of their abundance (Los Amigos de Ludd, 2007) – initially at least.

Therefore there could also be a ‘re-feudalisation’ of social relations, something that will be very unstable and difficult to maintain, because more than 200 years of struggle for human, political, social, economic and gender and cultural rights cannot be erased with one stroke. For this reason we may see different forms of ‘ecological and anti-patriarchal socialism’ and on the other extreme, forms of barbarism, with a wide range in between including the precarious survival of the remains of state structures that exist today, perhaps around the major urban-metropolitan spaces in crisis. The alternative will not be between socialism and barbarism, as Rosa Luxemburg noted at the beginning of the twentieth century. The two (and the extensive spectrum in between) can take place, in the twenty-first century, with a differentiated, complex and conflictive relationship among them. The way each of them prospers will depend on us.

All of this will take place in a context of a move to rural areas, and the progressive collapse of the highly urbanised spaces will create a new countryside–city relationship. As Pierre Thuillier metaphorically remarked (1995), ahead of these predictions, ‘In extremis, thanks to the Great Implosion, the disappearance of the farming class was finally

avoided.’ This will be the landscape that will most likely accompany the long decline of industrial civilisation, and the emergence of such a landscape will not take place overnight, but over a period of decades or centuries.



## The 'gods' of modernity in crisis, but not yet terminal

Humanity has lived 99 per cent of its existence very close to the stationary state (Daly, 1980), but the massive use of fossil fuels has definitively broken this trend, making exponential growth viable. And it is because of this growth, and under very specific time and historic circumstances – when Europe began to conquer the world and the expansion towards capitalism began – that the myth of limitless progress took hold and was consolidated by the emergence of the industrial revolution. Today, this myth has reached the entire world, thanks to global capitalism, and has adopted perpetual growth as a new type of religion.

Growth is considered to be both positive and necessary so that the future will be an improved version of the present, and in the interests of which everything must be sacrificed – all of this through an overwhelming dominion over nature, which science and technology have made possible. We have been told we are the chosen species, lifted above the dictates of natural law. The power of reason is replaced by that of irrational thought, and faith in science weakens while God, who was thought to be dead, returns! But these myths are gradually beginning to erode as growth regresses or comes to a halt. In the Western world progress is no longer progressing! It is in fact slowing down, and technology is increasingly unable to confront the environmental disasters caused by industrial society. For many, the future no longer looks like it is going to be an improved version of an already atrocious

present. However, despite everything, at the heart of industrial society is the firm conviction that this civilisation will not succumb like others in history. Glamorous global capitalism, epitomised by a dazzling Information and Communication Society, is set to continue. The words 'regression' and 'decline' have been buried for more than 300 years, and these modernising dynamics have reached the remotest areas of the planet.

Of course progress as a continuum without end is an empty concept, a social and ideological construct, though an attractive myth with great seductive capacity. Despite being absorbed as part of 'common sense', it embodies an essential falsehood, except in exceptional circumstances, and is beginning to erode on all sides. The ladder of modernity no longer climbs upwards to the heavens. Indeed it never really did for the general run of humanity, only for an elite minority, and for some years now the bulk of humanity has begun to descend from the bottom rungs to earth at an increasingly rapid pace. The global village gives no hint of this, of course, focusing its message on a still further reduced minority that continues to climb and remains strong, and on a nucleus of chosen ones reaching the 'eight miles'. Meanwhile, the 'middle classes' make desperate efforts not to lose their place on the rung of the ladder they have reached and are indeed falling backwards in central countries. The endless progress of modernity is no longer a way to build heaven on earth and is becoming the construction of Gaia's hell. Hell has returned! However, the global village and cyberspace hide this detour, as our attention is continually drawn to a seductive 'virtual reality', while we fail to understand and care for the deteriorating 'real reality' – still existing despite our not wanting to see it.

## **The new myths of post-modernity, supported by the Society of Image**

When Real Socialism entered into crisis and collapsed, in the space of a few weeks the masses physically broke down their own myths, literally tumbling to the ground the statues of Lenin, Ceausescu, Honecker and even Marx. The population began to embrace Western myths with unusual intensity, including of course the myth of consumption, a lifesaver in a sinking system. But today, these same people, the population of the East, are in a state of shock as everything they believed 'to be solid vanishes into the air', to quote Marx in another context. Savage capitalism has taught the majority of these populations the real face of capital, destroying all the social victories that had been obtained and burying many in misery. The freedom achieved is tentative indeed, though the people are free to emigrate, and their youth are fleeing to Western Europe if they are permitted, by Berlusconi, Sarkozy and others. In no other part of the planet has the myth of Western progress been so entirely discredited as in this vast space that runs from the old 'Iron Curtain' to the Urals and beyond that to the East. Nevertheless, these populations continue feeding off new Western myths, disseminated by the global village and by cyberspace and ignoring the remains of the still valuable rural world.

When the breakdown of global capitalism intensifies, it is difficult to foresee which myths will begin to collapse first, given that the current ones are venerated as true gods. The myths of post-modern global capitalism – consumerist and hyper-individualist – are varied and ethe-

real, and have penetrated to the core of the collective psyche. At the centre is the idea of Image, of stardom, of individualism. In this liquid and evanescent post-modernity we are living through, the new myths are built by the Society of the Image, an adjunct of the Information and Communication society, which tries to hide the social, energy and ecological crises behind its dazzling glamour. At best these crisis are perceived, along the way, as elusive flashes in news reports that are distorted and manipulated, and to which people pay less and less attention. This is the 'perfect crime' where the 'world dissemination of events corresponds to its weakest intensity and its swiftest obsolescence' (Braudillard, 1993, 1995). Meanwhile the overwhelming panorama of post-modern mythology, which apparently is set to survive throughout eternity, in reality has feet of clay, and the breakdown of global capitalism will cause considerable transformations within it.

One of the consequences of this breakdown will be a questioning of the colonial nature of global media, paralleled by a progressive loss of cultural power in the West. In fact the West, especially the United States, has already to a great extent lost its monopoly of cultural power. Hollywood is no longer the world dream factory; now multiple centres compete with their own symbolic-cultural power, as part of new and multiple options that are emerging at a global level, with considerable 'local' roots (Eisenstadt, 2002). India, China, Russia, Brazil, Mexico, Turkey, Qatar, Venezuela, for example, already have centres of media and cultural production that dispute the primacy held up to recently by the West, and their objective is to give the dynamics of their modernisation legitimacy and adapt them to their own cultural and even religious substrates.

But these new and multiple cultural forms all drink from the well of Western modernity and post-modernity, although they are metamorphosed to adapt to the needs of local power structures. And all of these transmit the new 'Bread and above all circus' mantra of an already multi-polar global village. Faith in limitless progress is today strongest in the emerging centres and in a significant part of the global South. This faith is maintained primarily on the foundation of a 'virtual reality' which is (still) capable of hiding what is happening in the 'real reality'. However, in the next two decades it will become clear that

the Western way of life cannot be generalised to the entire planet and that this has been a mirage that has lasted only a few dozen years – a mirage sustained on the sacking of Gaia and on global exploitation brought about by a hyper-technological society that is also beginning to end. This mirage principally envelops the highly urbanised, technology-savvy populations, subjugated to the Information and Communication society, which is quite incapable of understanding the gravity of the systemic crisis.

## **Will the global village and cyberspace survive the breakdown of global capitalism?**

Faith in an all-powerful technology will be one of the last beliefs to collapse, and may not begin to take place until the Society of Image and the Information and Communication society enter into crises – these still underpin the ‘gods’ of modernity and create the myths of post-modernity. But how is it possible that this virtual and ‘immaterial’ world could enter into crisis, being the ultimate example, up to now, of human creativity and cooperation? Despite the fact that we may eventually accept the possibility of the breakdown of global capitalism, we resist the idea that the spectacular social and technological construction we have come to depend on so completely could succumb one day. It appears to be maintained in the air and to live on air and has become part of our daily lives. It seems that we cannot imagine life without the Internet, which has now almost attained the same importance for us as the air we breathe and the water we drink.

However, this fantastic world of cyberspace is only understood within the context of global capitalism and its international division of labour, involving as it does a vast consumption of resources and energy, and with substantial environmental impact. Indeed it is far from being immaterial (Fernández Durán, 2009, 2010). And all of this is surely going to explode in the coming decades, or at least will see its deployment seriously conditioned. The Society of Image and the Information and Communication society will therefore not be left

unscathed.

The big question is: When will this take place? It is difficult to say, but the period between 2025 and 2050 can be put forward as a probability – the beginning of Peak Carbon and its possible collapse after a long span of soft decline (see Figure 3). The dependency on coal for electricity generation is such (40 per cent at a world level today) that its exploitation will continue to grow from now until 2025, becoming extremely vulnerable after that date, thus rendering impossible the maintenance of electricity production at its current levels. The result will be declining energy, and moreover its costs will sky-rocket further.

All of this will seriously affect the virtual world, as we will have to choose between the many needs that require electricity: lighting, elevators, water supply (vastly in demand in the developed world), sanitation, heating, ventilation, air conditioning, hospitals, transport (metros, trains, airplanes), industrial production, the food chain, electrical and electronic machinery and equipment and even the electric car, the global village and cyberspace. There definitely will not be enough for all possible and imaginable uses and it will be necessary to choose. This is the opposite of what happens today in the richest zones of the world, although of course not in broad swathes of the planet, where populations daily suffer the repercussions of such choices, with continuous power shortages (Heinberg, 2009).

The decision that will be implemented regarding declining availability and increasingly expensive electricity will almost certainly be politically, not technically based. A number of theorists and writers have already pointed to the possibility of the progressive breakdown of the virtual world. In some circles the generation of this virtual world has become known as the Fatal Error, because of the impact its curtailment will have on global capitalism, highly dependent as it is for its daily operations on a continuous flow of electricity (Virilio, 2007; Ibarrondo, 2005; Greer 2008, 2009).

From now to 2025 the elevated costs of operating the global village and cyberspace will be covered to a great extent by significant state contributions of many types (including strategic – military, satellites, for example). This financing will also keep afloat that world of Image

– glamour, superstardom, the superficial world. Without such state contributions, this world will not be possible in its current configuration, sustaining millions of jobs in the main countries.

It is highly unlikely that both worlds – the global village and cyberspace – can be maintained for long in their current versions, if we accept the more than likely probability of the different scenarios that are indicated. However, cyberspace will not disappear, at least not in the short and mid-term, even if it suffers a strong contraction. There will be very important motivations on the part of power structures to maintain this world, as it enables the governance of the masses, even though this also poses a considerable threat to power since it puts the possibilities for horizontal communication outside its reach and dominion. However, such ‘inconvenience’ seems increasingly less problematic, after the initial explosion of the anti-globalisation movement, a movement that was facilitated by the possibilities for interaction opened up by the Internet – a major contributor to the emergence of this ‘cloud of mosquitoes’.

Moreover, cyberspace also gives the authorities new potential for supervision and control. In fact the individual and collective energies dedicated to this distract a de-structured and hyper-individualist society from the possibility of forming itself into a real social force, with the capacity to promote substantial resistance and change. Of course in some circumstances the Internet has played a relevant role in boosting and bringing together new social dynamics on the margin and against established power structures, e.g. the election of Obama in the United States, opposition to the rigging of elections in Iran, popular eruptions in the Arab world – though the latter have also been empowered by *Al Yazira*. However, we have also seen the Internet and new media used in favour of neo-fascist options, e.g. by the Tea Party in the US. The Internet is a two-edged sword – its importance must not be downplayed but it must also be placed in its proper context.

Finally, the strategic elements that make viable the operation of cyberspace could be very difficult to maintain and substitute in the mid-term, e.g. the entire network of satellites that allow for its activity and that are also critical for the operation of systems like the US space programme. The cost of repositioning these satellites will explode

with the energy decline and it will be increasingly more expensive to maintain such a spatial super-structure. The United States is already abandoning its space race in the face of the immense costs involved. And the EU is increasingly incapable of keeping to the deadlines and the necessary investment to guarantee its Galileo project – in fact such was the case even before being hit by the global crisis and the euro crisis. Moreover, the emerging global actors who have crazily joined the space race will soon face the same limitations, especially when the breakdown of global capitalism intensifies. The conquest of space has been a Mid-Summer Night's Dream, a demonstration of the extravagance imposed by industrial society on the biosphere.

## **The end of the expansion of the 'I' in new multicultural mass societies**

In the past 30 years, the unstoppable development of the world of Consumerism, Image, Communication and Entertainment has led to an abysmal leap into the dynamics of social individualisation; this leap joins other leaps throughout history and largely surpasses them. In the highly urbanised central spaces new multicultural mass societies have emerged that are extremely dysfunctional, with intense individualism and unsupportive hedonism, and in which the few remaining authentic community structures survive mainly within migrant ethnic groups, i.e. those on the lowest rungs of the social structure, who embrace them for protection, support and resistance, particularly on a socio-cultural level. The new mass societies are very different from those that existed at the beginning of the twentieth century in industrialised countries; these were highly combative and in general substantially homogenous (ethnically speaking), with their own specific characteristics (strong culture and working class consciousness) and where the 'I' was to a great extent diluted by a powerful and antagonistic 'Us', a key protagonist in the class struggle (Fernández Durán, 2010b).

The social landscape is now very different; it tends to be internally conflictive, but not antagonistic in terms of class, and with a generalised and unprecedented moral breakdown. Interestingly, things do not get worse because mutual support and care structures still exist, in particular within the nuclear family in crisis, and these are sustained by women. The community structures and inter-community social

ties and bridges, some promoted by the state and others activated by NGOs, prevent the situation from degenerating further, leading to a possible war of one against all (Viveret, 2005).

However, the breakdown of global capitalism will bring enormous changes in the social dynamics that have taken place in the past 30 years. As the breakdown deepens in the next two decades, we will witness an exhaustion of the hitherto relentless expansion of the 'I', as increasingly the community - the 'Us' - and not the individual will provide the basic unit for survival. Moreover, this dynamic may be boosted by the states themselves and by the dominant power structures as a means of segmenting society (not precisely in terms of class), forcing people into unquestioning quiescence, so that they do not dare take on the hierarchies and power policies. This form of domination may be effected through nationalism, spectator sports, racism, xenophobia, homophobia, femicide, and the promotion of internal conflict within 'those from below'. A counter-dynamic may also be generated and promoted from below, one that can actually rebuild social relations to better cope with very harsh living conditions and even to survive.

There will therefore be two different ways of constructing an 'Us', one encouraged and manipulated from above and one emerging from below, the latter having the possibility of emancipation (Jover, 2010). Things may, however, not evolve in this way as the shift could also lead to dynamics that are strongly based on identity and are highly exclusive, engaging groups in the defence of their own territories, ethnic communities and ways of life – killer identities as Maalouf (2009) would say. But this construction of different forms of 'Us' will be based on the existing raw material, the multifarious social 'I's that are focused on, for example, income, ethno-cultural identities, peer awareness, making it difficult, even very difficult, to repair the gaps between these groups. This could lead to the construction of a variety of 'Us' that are to a great extent excluding or in conflict and easily manipulated by those in power. And in this context, age differences can lead to a renewed meaning of rupture and conflict, conditioning the construction of the different forms of 'Us' and their socio-political drift, as well as their environmental projection and impact.

## **2010-2030: From the generation of '68' to the 'most prepared generation in history'**

In the central spaces, the generations that are going to live fully in scenarios of deep crisis in the next two decades range from those of the '68 generation, who are already gradually abandoning their work-life cycle, to the so-called 'most prepared generation in history', which is entering the work cycle now. Those ahead of the '68 generation are already retired and will be increasingly passive spectators of the extraordinary changes taking place, observing these from a generational distance, and with the knowledge that they themselves will be more obliquely affected (e.g. in pensions and health cover), as their life cycle is ending.

However, the generation of '68 is the one that has most enjoyed the benefits of fossil fuels, especially oil, given that during their life span nearly half of all non-renewable energy resources will have been used up. Moreover, in the next two decades they themselves will be in the Third, and Fourth, age, still enjoying the last crumbs of the welfare state. This generation is the one that has experienced oil opulence. The so-called 'oil generation' could reach the end of their life cycle in a situation of hardship, but they enjoy a good basis in general, as many of them own their homes, or have a 'safe' and sometimes subsidised rental, and are still taken care of by the social state. But the next two generations, those now be in their 40s and 50s and those who are currently in their 20s or 30s, will carry on their shoulders the full

weight of the impact of the breakdown of global capitalism.

Finally, the generation that is born today will only be 20 years old when we reach 2030 and will be beginning to enter adult life in a context of extreme crisis, as global capitalism will have exploded and the long decline of industrial civilisation will be underway. Moreover, they will have spent their entire youth in a context of strong crisis – a generation born in the midst of the *Era of Ecocide*. This final generation, just now beginning to open its eyes to the world, will be very different from the earlier generations, as the breakdown of global capitalism will hit them with all its impact.

These latter three generations are very badly prepared to confront the future. The first, currently in their 40s and 50s, who have enjoyed consumption and opulence to a greater or lesser degree, will suffer most from the destruction of fixed salaried employment and the reduction of social spending, as they will not be able to enjoy the final cycle of their working life protected by a social state, which by then will have evaporated.

The next generation, those in their 20s and 30s, considered the ‘most prepared generation in history’, will most likely feel the harshest blow. And the breakdown will take them completely unawares because not only are they already suffering the most extreme precariousness when they were promised the opposite, many of them are highly indebted in accessing housing, or even university, or they ‘enjoy’ a precarious and expensive rental and therefore many decide to remain in their family home. This is the Peter Pan generation, who do not want to grow up because they feel good this way – seeking refuge in the family nest allows them to continue consuming, gives them access to motorised mobility, to the world of Information, Communication and Entertainment, a world to which they dedicate long hours. But this situation will fester and worsen, and the arduous and expensive training they have received will be in vain as the education system in which they have been trained is dysfunctional and has not prepared them to adapt to the demands of a profound crisis.

But today’s adolescents surely face a worse future, as many of them have grown up immersed in the Information and Communication society, wantonly engaging in social networks, devoting inordinate

attention to cyberspace, which in turn has led them to confuse reality with fiction. They live immersed in an unreal and fantastic world of virtual reality; they are like small super-demanding emperors because of the education they have received, both from the earlier generations of opulence and from a world of Image, Communication and Entertainment, a world that hides the savage social and environmental deterioration of the real world, marking them with an unattractive hedonism and a complete lack of empathy with their neighbour.

These young people are the product of opulence; they are actually blameless victims of our society, and they, together with those who are currently aged 20 to 50, are the ones who will suffer the main consequences of the breakdown of global capitalism. This atrocious route will no doubt produce strong inter-generational conflicts and tensions between the youngest generations, who are the most affected by the breakdown, and the more mature generations, who have enjoyed and continue to enjoy to a greater or lesser extent a certain amount of state aid (even if declining). Moreover, the fall in the birth rate over recent years, a delay in the fertility age, and increasingly ageing native populations in central countries will only worsen this phenomenon because the new generations will have to take charge of an increasingly ageing society, in many cases within a context of harsh conditions and with the nuclear family in crisis. Intergenerational conflicts will also be inevitable between native populations who despite everything enjoy certain rights and privileges, and the migrant populations, who are younger, impoverished and without rights, or those without nationality, with a huge youth population – as in the Banlieues of Paris.

We have described here the very different generational situation of populations from central countries, primarily, in the face of the breakdown of global capitalism, without mentioning that within each generation women will suffer the most. This is because of the (neo) patriarchal nature of these societies and the profound crisis of the social state, which will have the greatest impact upon women. Some of the indicated characteristics could affect the entire world, but only some, as the situations are enormously diverse in the different planetary spaces, above all in the emerging centres and the global South; here the modifiers are the international division of labour, the centre-periphery

divergences, and the 'city-countryside' contradiction.

Moreover, the global South is still in considerable demographic growth in general (although with important differences in the birth rate: the Arab World, for example, has been one of the spaces with the most significant population growth), and from there significant contingents of young people exit to access the privileged worlds of the central countries and the emerging spaces.

Here we note the enormous complexity that the population and migration dynamics will face in the next two decades, marked very probably by new and significant problems that will emerge by the abrupt end to global demographic expansion and the forced beginning of population decline from here to 2030, as well as the new migratory currents - environmental refugees – impelled by the intensification of climate change. All of this can take place simultaneously and condition and complicate even further the possible socio-political responses to the new scenarios that will be generated by the breakdown of global capitalism.

## **Walking towards 2030 without a road map, but looking through the rear-view mirror**

At the end of the nineteenth and the beginning of the twentieth centuries – the height of the industrial revolution – all hopes of transformation were projected onto the future, a future that would be characterised by progress, modernity, urbanisation, industrialisation, motorisation and even revolution. But in recent times we have become accustomed to viewing only a continuously disheartening present, without any desire to look into the future, and this is because the future looks rather dire.

And now that the future is exploding into the present, we are forced to look backwards, towards the past, in order to grope our way forward. Many of us look to the near past, attempting to conserve the social and cultural achievements that have been won. More of us cling to the present in an effort to blot out a future that shakes our deepest convictions. But perhaps we should look towards the more distant past, towards the world before the industrial revolution, or at least the world that existed before the configuration of the global urban-agro-industrial system, to see where we came from and where we might return when fossil fuels disappear. And we should do this in the knowledge that nothing can be the same as it was, because the future can never exactly mirror the past.

Catton (2010) reminds us: 'Our species does not seem sufficiently wise to deal with the world it has created.' We agree with this state-

ment, but nevertheless we feel it is necessary to confront reality and dare to imagine the future, even though it costs us. This is the only way to come to grips with the journey we must undertake, a daunting journey indeed. Remember too that major corporate and state structures are already working hard at imagining the future, from their perspectives of course, i.e. to get ahead of it and determine it. We must do likewise.

It is time therefore to undertake this work, to imagine a future with a profoundly changed urban-agro-industrial system, where the logic of capital no longer reigns supreme. This is what we are attempting to demonstrate, emphasise and narrow down in the current text. We are conscious that the logic of capital will not fully break down in less than two decades, and that it will probably be broken by the limits of energy, resources and ecology rather than by social struggle. And this logic affects us all. We are immersed in it, inescapably. However, we must be mindful of what will come later. We must also be aware that things could become much worse than what we 'enjoy' today – depending on how we act.

Interestingly, the breakdown of global capitalism and 'regional capitalisms' will result in respite for the non-modernised, non-industrialised worlds, the worlds of peasant farmers and indigenous communities. These worlds are best placed to survive the traumas to come. It is therefore necessary to look in the rear-view mirror and examine what these non-modernised worlds have that has enabled them to exist for longer and to more adequately integrate their existence with Gaia. In other words, we must come to know their bio-cultural memory (Barrera-Bassols and Toledo, 2008). Of course we must be aware that this memory is in general patriarchal – for the past 6,000 years, patriarchy has projected itself onto all cultures and has contaminated them to a degree (Taylor, 2008; Gimbutas, 1991).

With this long-sighted vision backwards, and taking into account the stark analysis of the present and its possible projection into the foreseeable future, we may come to understand that the exponential growth of recent times is a transitory phenomenon of human history (Naredo, 2007), and that it will reach its end because we have overstretched the ecological limits of the planet (Georgescu-Roegen, 1977).

No one living 500 years ago, before the expansion of world capitalism, could have imagined what the world would look like today. We likewise cannot accurately forecast the future, as the possible futures will be highly fluid and changeable. But we can have some certainties regarding what the next decades will be like, and it is a matter of urgency that we dare to imagine them in order to influence them – imagining and asking while we walk, as the Zapatistas say.



## **Catastrophe, crisis of the dominant discourse and an opportunity for transformation**

Catastrophe provides an ideal opportunity for change (Dupuy, 2002). It acts as a catalyst and invokes the possibility of disassembling something that seemed untouchable. Moreover, the need to reach a point of imagining catastrophe, as something real that could actually happen, is the best way to avoid the worst and the irreversible (Leira and Puddu, 2008). The Chinese ideogram of crisis is also that of opportunity (Jover, 2010).

The thinking behind this text is to avoid being trapped by the present, to remove ourselves from paralysing fear of the future, and to imagine alternative futures, other possible worlds. We must do this with full optimism but, as Gramsci advises, without masking the pessimism of our rationality. The next two decades could be defined as catastrophic. In fact, the breakdown of global capitalism could result in nothing less than catastrophe. But the catastrophe will not be the same for the entire world. Some planetary spaces could even be alleviated by it, while others could see extreme destruction and social chaos. Everything will depend on how it unfolds, where it reaches, in what form, and how it is to be stopped. The hope is that in the middle of all this chaos, opportunities for transformation will open up that are unimaginable today.

Our 'gods' – current discourses, myths and dominant values – still seem safe but they are suffering serious damage. We believe that they

will not survive intact to 2030. In the meantime, the dominant power structures still have enormous capacity to recreate the collective imagination of our societies, through the enactment of symbols and the management and manipulation of language and image (Fernández Durán, 2009-10). However, their capacity has a limit and this limit will be reached within the next two decades, at least in its current format. People have been 'educated' up to now to believe in easy solutions, in happy outcomes to our problems through technology, through confidence in political and business structures, through faith in the market, through delegation to experts and above all through a belief that it will be possible to maintain our 'standard of living'. All of this will end, and as the catastrophe deepens the powerful will no longer be able to hold reality hostage.

As confidence in global capitalism collapses, the question will be: What will replace it? Other existing power structures will hustle to fill the gap left behind, and this will possibly give rise to new and harsher 'regional capitalisms', against a backdrop of an industrialisation of scarcity. These power structures are already preparing their own story-tellings in order to legitimise their stance and coax those they dominate. We believe that these regional powers will face an even more difficult task in legitimising themselves than the current elites, as the crises intensify and socio-political disorders of every nature arise. The new 'gods' that will feed off the current ones will find it very complicated to establish themselves and it is foreseeable that their life span will be short, or at least highly unstable. But of course new, even more authoritarian 'gods' could replace them.

It is therefore our duty to create our own stories and engage fully in our own story-tellings. Human thinking is fundamentally symbolic, and if we do not do it ourselves, others will, appealing to human emotions. This activity must be carried out through multiple forms, from written and educational stories, through musical and artistic messages – counter-cultural as in the 1960s and calculated to reach broad sectors of the population. It will inform current generations about the catastrophe, and place before them the mirror of their responsibility, thus changing minds and hearts so that the people take the future in their own hands, with all the enormous difficulties this implies, trans-

forming the competitive 'I' into a cooperative 'us'.

We should undertake this task primarily for the generation that is now being born. These young people will be around 20 years old in 2030, not yet intoxicated by past opulence. They will be the generation to live through the intense breakdown of the dominant 'gods' and will have extreme need of new ones that are emancipating and at peace with Gaia, and that will help them live through the twenty-first century in the best possible conditions. This new generation, and the following, will see the sunset of industrial civilisation. There is therefore an urgent need to construct vital alternative stories for those who live today on planet Earth and those who are arriving or soon to arrive.

The culture–nature separation that has dominated modernity and its legacy is likely facing the end of its days, despite the negating currents that have proliferated in recent years in the neocon right and which deny energy scarcity, the ecological crisis and climate change. It will soon become abundantly clear that we cannot survive without taking into account the fact that we are not only interdependent but also eco-dependent – like every life form on the earth. *Homo economicus* is a pipe dream, much closer to the prosthetic and bio-genetic cyborg that aims to subsist through high technology, on the margin of life and of the biosphere (Sadaba, 2009).

As we enter the catastrophe, we may find one positive aspect, i.e. that the conditions of crisis and scarcity could activate cultural changes, and therefore socio-political changes, that currently seem impossible to propose since we are incapable of imagining any other type of society. Stories from the past, for example the famous dystopias of the twentieth century (*Brave New World*, 1984, *Fahrenheit 451*, etc.) encapsulated for us some very dark moments of history – the Great Depression, the rise of Nazism and Stalinism, the Second World War, Hiroshima, the Cold War, and the North-South conflict. This was a period in which all alternatives seemed blocked, as a brutal reality held hostage any possibility of socio-political intervention on the part of the state, and the incipient society of consumption and image took off in the West, a 'soma' that quashed any social response. However, in the middle of all this chaos, significant change did occur: decolonisation erupted in the 'Third World', something that had previously seemed impossible, and

was followed by the worldwide social revolution of 1968 (Fernández Durán, 2010b). It must be noted of course that this was a very different time, a time in which energy and resource consumption and the free availability of the planetary sinkholes seemed endless, and faith in progress, industrialisation and development dazzled the elites and the masses of the entire world.

That world has gone now, and the old tales cannot help us. Stories of the left that emerged from faith in progress and the development of productive forces, disparaging the ecological boundaries, will be of little help in the journey, even if the desire for social equality is of value. The stories of utopian socialism were undervalued by marxism and were buried by scientific socialism, which cornered, stigmatised and persecuted anarchists and libertarian currents. This was the scientific socialism that resulted decades later in the horror of Gulag, although in the West it helped to develop the welfare state – constructed on a base of ecological depredation, North-South exploitation and the work of women in the domestic field. The rebellion of 1968 brought fresh air, significant questioning of authoritarian structures at every level and an eruption of new social movements: feminism, environmentalism, pacifism, sexual liberation, all of which brought to the fore for the first time issues of extreme importance. Yearning for and faith in the capacity to transform the world was alive, and everything appeared to be possible. An immense wave of optimism flooded every area of life.

This optimism was also based on the tremendous possibilities emerging from the power to tap an unprecedented energy flow. The maximum per capita availability of energy took place in those years. However, it was all impacted by neoliberal globalisation, the conservative revolution and the new world financial capitalism. The story of the breakdown of global capitalism is one of profound pessimism, unrest and social paralysis, an increase in the clash of civilisations and intra-civilisation conflict, e.g. Sunni versus Shia, the rise of suicide terrorism and the eruptions of civil wars.

Catastrophe comes from Tanatos (death), not from Eros (life), but, despite everything, there is a significant desire to live and to transform this daunting situation. The widespread global movement against the

war in Iraq in 2003 was a good example of this impetus, although it later subsided due to increasingly dramatic realities and media manipulation. Currently, with the grassroots revolutions and rebellions impacting the Arab world, significant cultural transformations are possible there. This is a world that seemed to be held hostage by political Islam and Al Qaeda, but it has demonstrated itself to be much more complex and disparate – involving considerable lay components and the participation of women – than the image that was projected by a self-interested West to legitimise existing dictatorships and theocracies. On the other hand Al Qaeda and its derivatives persist and are strengthened where the US and the West has tried to put a *manu militari* end to them – e.g. Iraq, where Al Qaeda did not exist prior to the US military invasion, Afghanistan and Pakistan.

The catastrophe has the possibility to be a midwife to new times. Whether these times will be good or bad will depend on us to a great extent, particularly in the mid-term. It is time to think of the catastrophe as a new opportunity to intervene and transform reality. There is no other option than to live with it, taking advantage of it if that is possible while being aware of the tough times that are ahead.



## An urgent need to change and broaden our socio-political intervention strategies

The capacity for a socio-political mobilisation that would confront the global crisis is in general extremely limited. Only where the crisis has taken on a more brutal dimension and where societies have had a certain social cohesion and their own organisational structures, have specific responses been possible. Iceland, France and Greece are the more obvious examples. However, the results of their efforts have been limited. In other instances the response has consisted of social explosions resulting from accumulated unrest and on some occasions governments have been overthrown, but without this implying a real change of policies. A number of countries from Eastern Europe are examples of this, and in some instances it has even worsened those policies, with xenophobic and racist measures entering in. Examples are Hungary, the Czech Republic, Romania, but also France and Italy.

We can say the same regarding the food riots that have wracked more than 40 countries in the past three years in the face of rising food prices. There have been brief explosions of collective rage, which have occasionally resulted in a reversal of some of the harsher measures, as occurred in Mozambique. The grassroots revolutions and rebellions in the Arab world, aside from their rejection of despotic regimes, have also been sparked by increases in food and fuel prices. On the other hand, in the West, in general, the response is much more muted. Here many of the social gains have been lost but the reactions tend to be purely defensive, without the capacity to reverse the harsh policies

that the markets dictate. Moreover, these policies expressly seek to break down the power and capacity for union negotiation, as well as to underscore, through the media, the powerlessness of people and the uselessness of collective action.

We are witnessing the end of representative democracy and the near total blending of the left and right. Indeed, what is most actively mobilised is the ultra-right, for example the Tea Party in the US, which is experiencing a boom, financed by massive fortunes, huge businesses and major media outlets like Fox (Navarro, 2010). The Tea Party is an example of a movement that manages to blend together citizen fury around the most rabid chauvinism, individualism, conservatism, religious fundamentalism, and defence of gun ownership. The Tea Party aims to put an end to the bipartisan democratic system – perhaps to install a new form of fascism: made in the USA.

In spaces of the global South, in particular in South-East Asia – Vietnam, Cambodia, for example, and in China – we are witnessing struggles on the part of a heavily exploited and unprotected working population, to raise their wages and obtain social security. Some concrete results have been achieved in this area. However, nowhere is to be found a clear and joint strategy about how to react to the breakdown of global capitalism, the energy, environmental, and climate change crises and the end of industrial civilisation. Moreover, in many cases ideological conflicts survive among multiple currents that struggle for socio-political emancipation, conflicts that had such fatal results in the twentieth century, with some of them still anchored on visions of the old left.

This has taken place despite valuable but partial contributions from the World and Regional Social Forums, the anti-globalisation movement, and other global dynamics, many of which have fallen by the wayside in the past decade. Some of these movements – such as Via Campesina, which brings together the demands of peasant farmers and the indigenous world – do enjoy health and strength and are not conditioned by the stories of the old left. The latter in fact did not consider these worlds as worthy of consideration, because of its faith in development of productive forces and its revolutionary potential (Fernández Durán, 2010b).

Only the Movement for Climate and Environmental Justice – an adjunct of the anti-globalisation movement, the World Social Forums and the Regional Social Forums – is showing itself capable of articulating a response to the current scenario, proposing ‘system change’ rather than climate change. However, in general, its socio-political impact is limited and only reaches some territories of the world, e.g. Latin America and certain zones of South-East Asia. The movement had a global impact in the failed Copenhagen Summit on Climate Change, but its influence has manifestly fallen after the latest meeting in Cancun (Fernández Durán, 2011b).

The question of the energy crisis is not attracting the urgency that it deserves on the part of social movements; and even less attention is given to the resources and ecological crises. Movements of resistance against the environmental aggression of extractive global capitalism have emerged, along with movements in the global South that react against foreign debt and ecological destruction. Ongoing climate change is serving to attract the attention of new forms of global response, with an innovative content and approach, promising and anti-systemic. But, even so, it would appear that social movements are operating according to the political–environmental agenda that up to now has been established by global institutions.

Additionally, there are a number of questions that have not been addressed to date by emancipating world social movements. The most significant of these is the global demographic crisis, which sooner or later must be confronted from a perspective of local and global justice. This issue will acquire extreme importance in the future and we must therefore address it in a way that is agreed upon and democratically assumed. Minimal and inexcusable criteria regarding the right to life and the right to exit from life must be taken into account, of course. This is a complex and emotional issue, but it must be faced. Otherwise the structures of power, the market or mother nature herself will face it, with an extremely high human cost for the poorest and the weakest.

The need to reduce the consumption of resources, especially in central nations, is another issue that must be addressed. We recognise that it is essential to reduce consumption by 90 per cent or more, in order to ensure sustainable and fair social and productive models on

a world scale (Bruil, 2008). Furthermore, there is the issue of compensation for the immense debt of human labour and environmental and climatic deterioration caused in recent centuries in the global South; so far there has been a total socio-political incapacity to grapple with this issue.

Clearly, addressing these matters would involve a complete change in the way of life that few people are willing to assume, including the most militant and socially committed among us. The Movement for Degrowth is heading in this direction but up to now its militant and social influence is extremely limited and only reaches a few Western European countries. The same can be said about initiatives such as Transition Towns. It is very difficult to make the leap towards considering that within the logic of capital there is no solution for labour problems or social degradation, or to address the energy and ecological crises and climate change itself. Up to now social movements have tended to remain imprisoned by an attitude of possibility, accepting the market solutions coming from Green capitalism. This is particularly evident in relation to a significant part of the ecological movement regarding climate change – note for example, the attitude to Kyoto I (Fernández Durán, 2011b). However, this attitude is gradually collapsing because, aside from its limitations and fallacies, capital itself is increasingly decanting towards the 'Business as Usual' route.

It is essential that we break out of the prison that impedes us from thinking outside of the box. Suggesting small alterations and reformist changes within the logic of the market will only lead to a dead end. These limited transformations will never take place, and are anyway totally inadequate in the face of what is coming towards us. The problem is a lack of social conscience regarding what is really going to happen, a paralysed demobilisation that impedes a change in direction, and a lack of strength to take on the forces of capital.

The panorama seems desolate indeed. But, nevertheless, some social initiatives have begun to change the world, with all their limitations, and without awaiting a time when 'objective conditions' become 'clearer'. A multitude of social micro-processes and alternatives of a local character have decided not to wait and have begun to build a new economic, social and environmental order, on a small scale, going

against the logic of capital, relocating production and consumption and creating new community structures – 'Eutopias' that crystallise utopias in concrete places, based on voluntary simplicity and a joyful sobriety (Jover, 2010). 'The basis for the creation of sustainable human development must arise from within the system dominated by capital, without being part of it, just as the bourgeoisie itself arose in the "pores" of feudal society' (Magdoff and Foster, 2010).

A debate that, without a doubt, will intensify in the future within the social movements is where we should focus our main efforts: on mobilisation or on transformation. There is no easy answer, because these are not contradictory alternatives and both are necessary. Moreover, their possible combination will depend on the different areas of the world, whether these are modernised, central or peripheral, and the socio-political and environmental conditions of each. Given the current circumstances and the urgency of the problems that have to be confronted, the emancipating movements themselves are increasingly oriented toward strategies of transformation, environmental conservation and local ecological reparation, and perhaps not so much towards mobilisation.

This may be the case temporarily, allowing them to transform themselves personally and collectively, to organise, take root, create more just, self-sufficient and sustainable worlds and to gain strength. Also, because transformation is a huge and urgent task that must be carried out in the face of what awaits us, there is no time to be lost. The aim is to undo the existing order, imposed from above, and construct another order, from below – 'To change the world without taking power' (Holloway, 2002), consistent with the limits of Gaia and in harmony with it.

However, we must also adapt our interventions to the inevitably harsh socio-political conditions, although without abandoning the battle field, the resistance and the longing for social and environmental transformation. We will hopefully be many small Davids confronting Goliath. We must blind this tremendous Polyphemus and hide while it falls.

This will best be done without openly seeking a confrontation that in general would be suicidal. We must acquire the necessary strength,

through the creation of more autonomous spaces or capital, prior to clearly bursting on the scene – because the breakdown of current forms of power and property will surely involve conflict. And all of this must take place through strategies of active non-violent struggle and civil disobedience, adapting the means to the ends and gradually winning the hearts and the minds of the social majority, promoting the means of redistribution but also containment of production and consumption, as well as facing head-on the paralysing effects of collective fear. We have just witnessed the power of non-violent struggle in the grassroots revolutions in the Arab world, which have already brought down a number of dictatorships. In summary, then, the objectives for social movements are to increasingly gain more strength and to articulate to ourselves and others our social and public projection.

## **A conflictive and complex relationship with the State and the Metropolis**

Within this synthesis of where we should orient our emancipating and transforming activity, two important questions emerge: What attitude should we adopt regarding state institutions? What should our stance be regarding the metropolis? There is no simple answer to these two complex questions. Regarding the first, it is worth asking if this field – the state – is completely lost in the face of its immense submission to financial–corporate power.

We believe that we must not consider any field as lost, especially where there are still remnants of democratic and social achievements in place. The state is an institutional space of historic crystallisation of social conflict and a fulcrum that provides some equilibrium between conflicting interests of class, gender, ethnicity, etc. The state embodies the management of a complex society and is not a mere prolongation of capital interests. For these reasons the state should not be abandoned or neglected, as it could play a significant role in the transition towards other possible worlds. However, it is essential that future changes will principally be bottom-up, embodying varying types of radical democracy, through transformation, organisation and social conflict, and not top-down, generously conceded by power elites. Without this pressure from below there will be no real change.

Social movements should align themselves with progressive governments, and not cede any democratic space. In that way, the authoritarian or even totalitarian detour will not be any deeper than expected.

In this regard, we have much to learn from history – during the 1930s, for example, the division between ‘communists’ and ‘socialists’ contributed to the rise of Nazism. Divisions must therefore be avoided. In the short-term we should perhaps opt for the lesser social evil and the greater environmental benefit while we prepare for a more just and sustainable transition in an underground fashion (Wallerstein, 2009). Even the temporary confluence of social movements with progressive governments, and with those who have a rupturist attitude towards the current global order, can help in the dynamics of world transformation. It is of course important to know the limitations of such confluence and conserve the autonomy of social movements.

The Cochabamba World People’s Summit on Climate Change (April 2010), convened by Evo Morales, is a good example of this type of collaboration. The summit inaugurated previously unexplored paths. In fact, the formal consideration of the Rights of Mother Earth in the new Bolivian Constitution is an achievement that should not be underestimated. Ecuador has taken a similar step. The rupture with the Copenhagen (Non)-Agreement mainly by Bolivia, Ecuador and Venezuela was a political landmark that helped unveil the hypocrisy of the UN Framework Convention on Climate Change and the powerful interests that held it hostage. Progressive governments are not perfect, of course. These states maintain the extraction attitudes and commitments that conflict with the theoretic philosophy of the defence of Pacha Mama, and run governments that are highly personality-based and authoritarian in their defence of ‘socialism of the twenty-first century’. Bolivia opposed the Cancun ‘Agreement’, though it was later to impose the ‘gasolinazo’ on its population, thus activating a grassroots rebellion.

The second main theme to emerge is our stance in relation to the metropolis. Again, this problem is raised in a particularly complex terrain. The metropolis will not be able to maintain itself in the mid- and long-term future. It is condemned to disappear or to ‘deconstruct’, as a result of the growing energy decline that awaits us throughout the twenty-first century. And the complexity regarding what to do is related to the fact that more than half of the world’s population currently lives in urban-metropolitan spaces – nearly 3.5 billion people in some

500 world metropolises. Here around a third of the urban population, much more than 1 billion, live in frightful conditions, in urban slums that lack any type of urban service – water supply, sanitation, infrastructure, transport, electricity – and in extremely degraded and conflictive spaces (Davis, 2007; Fernández Durán, 2009). In many of these ‘misery villas’ or ‘slums’ located in the urban-metropolitan periphery, social movements have emerged that demand the ‘rights to the city’.

In order to address the enormous problems in these slums there is a need to dedicate significant investment and resources – ‘post-development’ measures. But these are spaces that have a doubtful future. Investment and scarce resources are pumped in that probably should be dedicated to guaranteeing an easier transition towards a post-fossil, more rural world, balanced and with a future. The same applies to low-density suburban places in the central metropolises and many of their peripheries, where there are significant sectors of urban ‘middle classes’. These urban spaces, which have consumed an enormous amount of energy in their construction – the worst assignment of resources in the history of humanity (Kunstler, 2007) – are very costly to maintain, and will probably be the metropolitan spaces with less mid- and long-term futures.

There is no easy choice about how to approach the future of the metropolis and it will be necessary to apply a two-edged strategy – first, support a minimum and essential improvement, on a provisional basis, and with the greatest possible socio-environmental dimension; second, facilitate the conditions for a progressive move to rural areas and for ‘economic activity’. Both of these approaches collide with the dominant interests and the established forms of property. And in both the social and institutional component is key, so that it could take place in an orderly fashion, efficient and with the least trauma possible.

Here we once again face the issue of transforming the state in its fundamental administrative levels, a transformation that will not take place without considerable tension and socio-political conflict from the grassroots. To impel and manage this complex situation will be one of the major challenges in the coming decades, as the future of humanity and the biosphere will depend to a great extent on what

takes places in the metropolis. In the long decline to come the metropolises, or their remains, will serve as 'new mines' where it is possible to obtain resources that are increasingly scarce and difficult to extract. Throughout history, in times of crisis, societies have continued to use their legacy of raw material to survive. And of the metropolis it would have to be decided which parts will be saved from definitive ruin in this new 'countryside-city' configuration that will take place throughout the twenty-first and subsequent centuries.

The new economies therefore will be based on re-usage, recycling and environmental sanitation of an urban-agro-industrial system in decomposition. This will involve recovering part of the pre-industrial and simple industrial technologies that have been displaced by the power and the complexity of a hyper-technological society. The technological remains of this society will probably continue to be used in a partial and declining form over time, until finally they can no longer be substituted for. Later in the mid- and long-term it will be essential to continue developing a simple technology that makes it possible to journey to eco-technical societies (Greer, 2008, 2009).

## **War and patriarchy - problems that must be resolved to allow us to live as human beings**

We are approaching a unique moment in the history of humanity when our very survival is at stake. The transition to a post-fossil world will probably be a chaotic and brutal drift. We should therefore prepare ourselves for a long phase of barbarity and violence. A global crisis, created by an unfair and brutal system, based on extreme competition and social and inter-sexual inequality, with no consideration for the limits of resources and sinkholes of the biosphere, is something that cannot be wished away. However, no minimally 'human' solution will be possible without more cooperation than struggle among people, without moving towards social and inter-sexual equality, without accepting the 'other' and the diversity of 'civilisations', that is to say, without encouraging empathy towards our fellow human beings (De Waal, 2010) and in particular without being at peace with mother nature. In these terrains the future of humanity after 2030 can in some way be assured. But this is dependent on taking action now and reaching this date in the best possible conditions, acquiring the prospects of moving towards 'other possible worlds'.

We have therefore two possible scenarios for after 2030: a chaotic, abrupt, and brutal collapse, or a 'softer' degrowth, ordered and just. A complex and conflictive interaction between both these possibilities is most likely, depending on the situations in different territories and

societies at a planetary level. In other words, we may reach different degrees of ‘barbarism’ along with different degrees of ‘ecological and anti-patriarchal socialisms’, with a broad intermediate range, coexisting in a complex manner. The most probable, given the trends that are underway, is that the scenario of ‘barbarism’ will be the dominant one. Supporting this would be a suicidal ‘solution’ for the future of the species. It could put at risk the very survival of humanity, leading in the most extreme case to a nuclear, bacteriological or transgenic crisis.

In order to travel in the opposite direction, we must head towards the end of war and violence as determinant forms of human relationships, and we must work against patriarchy and social inequality. These types of relationships currently benefit some social minorities: the elites, some of the middle classes, and also the male of the species exercising domination and exploitation in relation to women, the other half of the world population. The current social order has deep roots not only in modernity, but also much further back in time, in historic changes that began to take place in the world some 5,000 or 6,000 years ago, with the beginning of the state and the emergence of patriarchy and war. These three have been intimately related and intertwined, with abrupt alterations in the climatic and environmental conditions in certain parts of the planet, principally in the space called ‘Saharasia’ – the desert and semi-desert territories that run from the Sahara to the Gobi desert (Taylor, 2008; Van der Dennen; 1995; DeMeo, 1998). Since then, competitive and violent behaviour has been to the fore in the human species much more than cooperation and peace – with some notable exceptions.

We cannot travel the road of the long decline in a minimally ‘human’ manner without cooperation coming before competition and war, as is indicated by everything done by the human species for more than 95 per cent of its existence on planet Earth. In the animal kingdom, intra-species war is unknown, although obviously not conflicts among individuals of the same species. Many animals survive not through fights, but through mutual aid (De Waal, 2002, 2010; Kropotkin, 1915). This is also true of the entire ‘inferior’ living animal

kingdom and in the flora kingdom, resulting in immense abundance and strength of life.

The possibility exists for some new socio-political and cultural dynamics to emerge that would make it possible to break the demented drift towards war and patriarchy. There are also possibilities imposed by nature of course, chief amongst them being the exhaustion of fossil fuels, which will mean that the mega-war machine can no longer move as it currently does. War is extremely costly and dependent on this type of energy, so the loss of such energy will make it difficult for mega-conflicts to be prolonged.

The breakdown of the hyper-technological society will also move in the same direction, given the extreme dependence that the military and security have on technology. However, this will not necessarily mean an end to weapons and violence. Currently there is an endless array of firearms capable of generating major social disaster, as is taking place daily in the ‘low intensity’ conflicts that proliferate worldwide, for example Colombia with 30,000 victims and Mexico with nearly 25,000. However, there is also a strong resistance to senseless violence. New socio-political and cultural dynamics can emerge, if we know how to encourage them, and these could stop this senseless carnage. And perhaps the survival instinct of the species could accelerate, reaching a point, if conditions are right, for a possible collective change in the species. This is particularly urgent because the ‘Business as Usual’ route, and all of its derivatives, only lead to violence, barbarism and ecological destruction, pointing toward a terrible world with no future, including for *Homo Sapiens*.

Theories such as the morphic resonance of Rupert Sheldrake (1990, 1994), the collective unconscious of Jung (2002) or the hundredth monkey of Keyes (1984) point to the possibility that in predetermined circumstances, a new behaviour reached by a critical mass of individuals in a species makes it possible to create a synergistic effect that leads to an explosion of knowledge and to collective practices never seen before. In that situation, the species evolves by itself, adopting en masse a different life style (De Waal, 2002, 2010). This idea was also mooted by Prigogine and Stengers (1984) - as initially

small 'fluctuations' that can transform an entire system. Perhaps such a scenario is most possible in situations of very intense stress which we will have to confront in the long decline of the industrial civilisation. If this were the case, new human endeavour would make it possible to truly honour the title *sapiens*!

But in any case, to make such a collective process feasible, it would require a sufficient critical mass, which is necessary to develop anyway.

*La Maloca-Peagrina-Madrid-Leganés, February, 2011*



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## Appendix

Ramón Fernández Durán planned this current book as the first part of a much longer volume - with four additional sections covering more in detail the periods 2010-2020; 2020-2030 and a final section Beyond 2030. His friend and comrade from Ecologistas en Acción, Luis González Reyes is committed to conclude this work.

### **II. The end of the escape of Global Capitalism: 2000-2010: the inability to overcome its systemic crisis**

### **III. The impossible future of the urban-agroindustrial system and its consequences**

### **IV. Venturing the next twenty years of decomposition of the global capitalism**

- 2010-2020: Declining energy, end of economic growth, financial turmoil and rupture of globalization
- 2020-2030: A non global capitalism in a strong crisis and 'balkanized'

### **V. Beyond 2030: entering in the era of the collapse of Industrial Society the best way**



