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EDITORIAL BY PHILIPPE COSTE, VICE-PRESIDENT OF CARBONIUM



This April 2014, the Intergovernmental Panel on Climate Change (IPCC) just published in full his Fifth Assessment Report (AR5). In all probability, the objective of limiting global warming to 2°C will not be reached. Obviously, policymakers should not give up: they must instead make every effort to contain globally as much as possible greenhouse gas emissions. But in parallel, it is also essential that citizens and businesses are aware of the need to adapt to climate change that appears increasingly inevitable if not already observable.



What is meant by adaptation? This means facing new risks such as sea levels rise or the multiplication of extreme events such as storms, heat waves and floods. Then it is about protecting vulnerable infrastructure or selecting more resistant materials. Adaptation also means anticipating the changes that are likely to affect the economy, and specific markets. We know, for example, that food consumption is closely dependent on the weather: sales of food products or drinks such as beer or ice-cream being only the most obvious. But it concerns in fact a very large number of activities: clothing or housing market, demand for health services, energy consumption, insurance, and so on.

For ten years, CARBONIUM developed extensive expertise worldwide in all these areas. Today, the company is frequently consulted on mitigation and emissions reduction, its historical field of expertise, but also more and more on adaptation to climate change, disaster risk reduction and green climate finance.

Institutions like the United Nations Development Programme, the German Development Bank (KfW) or the Asian Development Bank count among CARBONIUM's clients. In addition, this latest edition of CARBONEWS presents some examples of projects we are active in. And we indeed also hope to count you among our customers in the future!

PAYMENTS FOR ENVIRONMENTAL SERVICES IN IRAN



MENARID Project

Under the MENARID project (the full title is "Institutional Strengthening and Coherence for Integrated Natural Resources Management in Iran"), Alexandre Borde has been assigned by the United Nations development Programme (UNDP) and the Government of Iran to provide support in establish-

ing Payments for Environmental Services, including carbon sequestration and water conservation, in several demonstration sites. The project is managed by Mr. Houshang Jazi, National Project Manager, and the PES activities are under the responsibility of Ms. Sara Torabi, National Environmental Economist.

The Islamic Republic of Iran is characterized by different agro-ecological conditions, high mountains, vast deserts with precipitation of less than 50 mm per year, and to the opposite, coastal zones, on the Caspian Sea, with precipitation up to 2,000 mm per year.



These complex and varied conditions, in terms of topography, geological formations and anthropological management of natural resources, have led to a unique biological diversity. But the increasing pressure on the Iranian ecosystems requires to take actions to preserve them.

There is an increasing focus on integrated natural resource management based on the use of the economic tools. This approach is attractive to decision-makers and can facilitate comparative analysis for many environmental services. There is a growing body of work on improving environmental services valuation techniques, in particular mapping the spatial distribution of environmental services values. However, not all environmental services can be easily quantified in economic or monetary terms, with cultural services being especially challenging to assess.

In this context, the advisory services focus on the contribution to the measurement of the environmental costs and benefits of Iranian ecosystems, and by designing Payments for Environmental Services (PES) mechanisms. The ultimate objective is to make the PES schemes - including carbon finance - operative at the demonstration sites or nearby where financial benefits are accrued to land.

Sara Torabi (MENARID project) and Alexandre Borde (CARBONIUM) presenting the concept of payment for environmental services in Kermanshah, December 2013



In the long-term, a sustainable financing mechanism in terms of PES will support ecologically-friendly alternative livelihoods and sustainable land management practices.

The project focuses on several sites in Kermanshah province (Razin site), Yazd province (Behabad site) and Sistan-Baluchistan province (Zabol site).

HIGHLIGHTS ON THE CHINESE ETS AND THE POSSIBLE USE OF CARBON OFFSETS FROM DOMESTIC PROJECTS

Seven pilot cities and regions of China have been selected to implement carbon markets. CARBONIUM (a member of a consortium led by SINOCARBON) is directly involved in the design of the Shanghai ETS (Emissions Trading Scheme).

One of the subjects addressed by such regional markets is the linkage between them. The advantages of linkage are obvious: market expansion, lower price volatility, limitation of the risks of leakage... It is clear that the seven Chinese markets are intended to be connected to each other, and even to be linked with other markets, located or not in the Asia-Pacific region.

The new Chinese carbon markets can also be considered as an opportunity for the carbon offset projects such as those co-developed by CARBONIUM in Yunnan and Sichuan. A specific offset mechanism (a Chinese certified emission reduction is called a CCER), similar to the Clean Development Mechanism, should be used across a nationwide ETS. On June 13, 2012, the NDRC (Nation Development and Reform Commission) re-



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Picture: Participants, including representatives from CARBONIUM, taking part to the workshop on the Shanghai pilot ETS & Regional Linkage organized by the Asian Development Bank in Shanghai, December 10 & 11, 2013

leased the "Interim Measures on China's Voluntary Emissions Trading". Although the title of this interim measure mentions the term "voluntary emissions trading", it means offsetting carbon emissions voluntarily by using credits from low carbon projects. These interim measures will in theory assist the seven mandatory ETS pilots in China by offering an offset mechanism in addition to their respective local allowance unit.

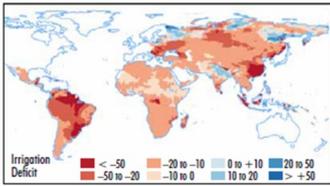
These interim measures will not be applied in the 7 pilots, unless they are locally approved by the NDRC in each pilot ETS. Once each pilot ETS allows the implementation of the interim measures, CCERs can be used to offset companies' emissions (based on the offset limit set by each pilot).

Technically speaking, the prerequisite is to monitor emissions of each facility with reliable data. This requires 1) an army of auditors (because of the amount of industrial sites concerned), 2) that can access information (e.g., in China, they are deemed confidential), 3) are well trained and competent (this implies a considerable effort in training), and 4) are corruption free.

Politically, it is necessary that the authorities - and public opinion behind them - are sufficiently imbued with the need to reduce emissions of greenhouse gases to successfully resist to the pressure from industry in favor of over-quota allocations and to impose to issuers well defined ceilings.

In other words, the road is still long and very steep. For Europeans, this desire to move forward in Asia addresses a message of confidence in carbon finance. It also provides opportunities to CARBONIUM considering our experience and expertise in the EU ETS. It gives us also responsibilities in contributing to the success these flexibility mechanisms.

ADAPTATION AND WATER RESOURCES: SOME FACTS

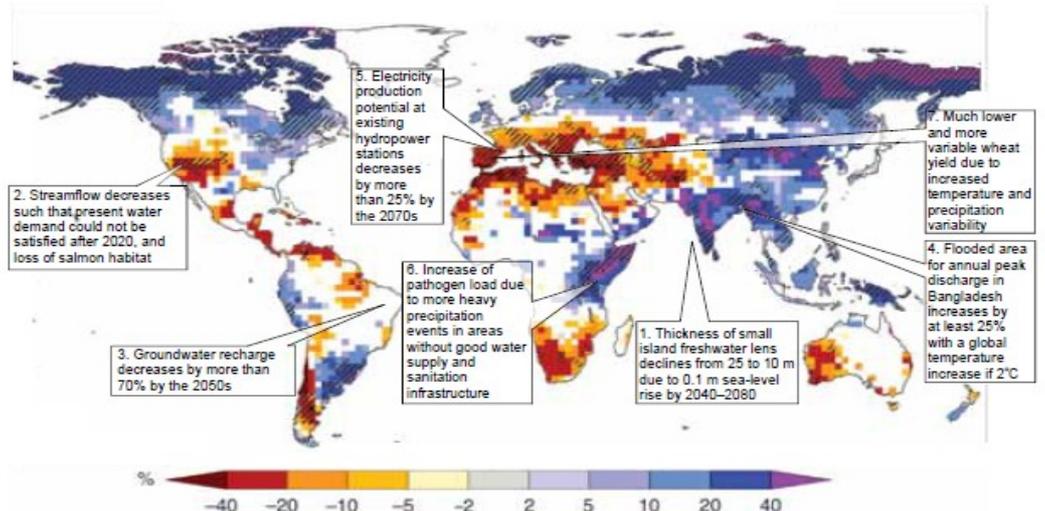


Projected percent change in hydrologic indicators for 2030 from 1961–1990 baseline
Source : World Bank, 2009

Climate change has consequences in all economic sectors. Some facts and data are presented below regarding water sector investments in relation to climate issues and climate-smart adaptation options.

Key variable	Observed trends	Projections, 21 st century
Total Precipitation	Trend is unclear. General increases in precipitation over land from 30°N to 85°N. Notable decreases from 10°S to 30°N.	Increase (about 2%/°C) in total precipitation. High latitude areas generally projected to increase. Many low to mid latitude areas projected to decrease. Changes at the regional scale vary.
Atmospheric Water Vapor Content	Increasing in lower atmosphere (lower troposphere; about 1%/decade) in specific humidity; little change in relative humidity.	Increasing.
Intensity of Precipitation	Disproportionate increase in volume of precipitation in heavy or extreme precipitation events.	Increasing (about 7%/°C).
Droughts	Drought, as measured by the Palmer Drought Severity Index, increased in the 20 th century, although some areas became wetter.	Increasing in many areas, particularly lower latitudes. Decreasing in many high latitude areas. Patterns are complex.
Tropical Cyclones	Increases in intensity, particularly in North Pacific, Indian Ocean, and Southwest Pacific.	Increase in intensity. Changes in frequency and track are uncertain.
Glaciers and snow cover	Decrease in mass of glaciers, but not in all regions. Decrease in snow cover in regions in the northern Hemisphere. Earlier peak runoff from glacier and snowmelt.	Continued decrease in glacial mass and snow cover.
Sea level	Increased about 0.2 meter over the 20 th century. A rise equivalent to 0.3 meter per century was recorded since the early 1990s, but it is not clear if this is an acceleration of long term sea level rise.	IPCC projects 0.2 to 0.6 meters by 2100, but upper end could be much higher.

Illustrative map of future climate change impacts related to freshwater which threaten the sustainable development of the affected regions
Source : World Bank, 2009



CORPORATE NEWS

Conferences and media



On April 4, 2014, **carbon finance** was discussed during a broadcasted program to which CARBONIUM contributed, on Radio Bonesha in Burundi.



Alexandre Borde gave a lecture on March 24, 2014 at the University of Versailles-Saint-Quentin, on **green fiscal policies**, with a focus on climate change and energy.



On February 10, 2014, Philippe Coste presented his viewpoint on the **potential of the carbon markets in Asia**. The interview was published by Actu-Environnement. <http://www.actu-environnement.com/ae/news/philippe-coste-carbonium-systemes-echange-emissions-asiatiques-20709.php4>



ASIAN DEVELOPMENT BANK

Ban Le and Philippe Coste made two presentations at a workshop on **Shanghai Pilot ETS and Regional Linkage** organized by the Asian Development Bank, December 10 & 11, 2013 in Shanghai.



End of November 2013, Alexandre Borde visited Iran and made several speeches in Kermanshah, Yazd and Tehran, in the context of the MENARID project. He also gave a speech to the top management of the Bank Keshavarzi on **green banking**.



On October 31, 2013, Philippe Coste was a speaker at a training organized by DII in Paris. He made a presentation on the future of the EU ETS entitled "**La révision de la directive ETS : Que va-t-il advenir de la réglementation carbone ?**".



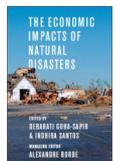
CARBONIUM participated to Green Biz 2013 in Hanoi, on 19 & 20 September 2013, with a presentation on "**Carbon finance: The benefits and limits of trading schemes**". <http://greenbiz2013.com>

Publications



Oxford University Press, "**The Economic Impacts of Natural Disasters**", Alexandre Borde, Managing Editor and Debarati Guha-Sapir & Indhira Santos, Editors, May 2013.

<http://global.oup.com/academic/product/the-economic-impacts-of-natural-disasters-CC5FE53A9BE3D69699692284B1315F?cc=fr&lang=en&>



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