

Fixing a World and Not Just an Economy in Crisis

By 2030, we will need two earths. That is, of course, if we plan to supply enough natural resources to maintain current consumption patterns. As world leaders look to recover from the current economic downturn, they must make sure financial reforms do not close the tap on investments to address a growing water crisis, says Prof. Luis Veiga da Cunha.

One year ago, the world sank into a global financial crisis of exceptional proportions. For a while the clear contrast between an economy in freefall and the patchwork of inconsistent national regulatory systems was appalling. The final extent of the crisis cannot yet be fully evaluated by the governments and the international financial institutions.

We face a very real danger that the anxiety to get the economy “back on track” may sweep environmental concerns under the carpet. In many countries, social crisis may be lurking around the corner and could still burst, in more or less violent forms. Losses in biodiversity, rapid ecosystem changes and climate change are providing very worrying signs that an environmental crisis could soon assume particularly serious proportions.

Unfortunately, many still believe that, once the economy is fixed, in a couple of years, everything will return to business as usual, creating the conditions to handle the social and environmental problems. One thing at a time, thus.

Others, however, believe that there will be no choice but to carry out thorough reforms that might guarantee an effective global governance of the financial and economic systems. And they feel that it is important not to set aside the necessary social and environmental global reforms when conceiving and implementing those policies.

Beyond capacity

From its revolutionary conception just two centuries ago, industrialisation has brought about a new model of civilization. Its main drivers – industry, agriculture, urbanisation, transportation, demographic growth and technological development – have engendered a level of consumption that quite simply can not be sustained. Natural resources are at present degraded faster than they can be renewed. We are, in fact, depleting our natural capital, placing at risk our fu-

ture prosperity and our very survival. This is a very recent phenomenon. Despite its violence, the assault on our resource base has been quickly accepted as a “normal behaviour” by governments, economists, and citizens.

But things are far from normalcy. Ongoing rapid growth and exploitation have begun to set off massive transformations of the environment. Mankind is no longer able to control the feedback mechanisms that may result. Climate change is a good example. In just two centuries, we have transferred to the atmosphere (in the form of gasses and energy) half the hydrocarbons that had taken millions of years to accumulate on Earth. And water is indeed seen as the major mediator in this process, due to its role across the various economic sectors of our society.

Overconsumption of resources, most strikingly water, is placing our species on a dangerous path. The WWF Living Planet 2008 Report projected that if natural resources usage continues to rise according to present trends, by 2030, it will take the equivalent of two planets to meet global demand. If all of Earth’s inhabitants currently enjoyed living conditions similar to the average North American, it would take five planets to support them.

Leadership is needed. It is unclear whether governments believe that the imbalances imposed on natural resources will eventually sort themselves out through the intervention of some kind of environmental “invisible hand”. It happens, however, that these environmental changes might soon grow to an incomparably larger intensity than in the past, since the advent of human societies on Earth.

Jeffrey Sachs, the president of the Earth Institute at Columbia University, has recently advocated the need for a new Bretton Woods agreement, which should encompass four domains: (i) global restructuring of

the financial system; (ii) bringing climate change under control; (iii) aiding reduction of poverty, hunger and disease; (iv) implementing a stable world trade agreement.

The global financial, development aid and international trade systems must be reformed together so that global ecosystems can be maintained. This should always take into account the multiple interactions and feedbacks between these four domains. This is, after all, in line with the definition of a complex system, as it is the Earth’s Global System.

Facing the water crisis

In the environmental system, four main components appear to be primordial: water, energy, food security and climate change. These are connected through close interactions and feedbacks. For example, growing and transport of food takes tremendous water and energy while water can both create and require energy depending on how it is used. Burning fossil fuels or slashing forests for agriculture can alter the climate system, the main impacts of which are felt through an imbalanced hydrological cycle that makes rain patterns less predictable for farming communities.

Water is increasing coming to the fore as a priority. The recent United Nations World Water Development Report 3 warns in an unprecedented fashion that extremely serious consequences may result from the neither equitable, nor sustainable way water is currently used. Both economic development and security are put at risk by poor water management.

That is why the well established concern about a global energy crisis has recently



started to be accompanied by the concern with the well-documented but oft ignored looming global water crisis. The energy-water nexus – both the energy footprint of water use and the water footprint behind energy production - is gaining attention.

Over the past year, the possible arrival of “peak water” (see Stockholm Water Front, December 2008) has highlighted new urgency to address the crisis. Though water is a renewable resource, it is still limited. As water resources creep closer to being insufficient to cope with demand, water scarcity may become worse than oil depletion. Alternative energy sources exist. There are no substitutes for water.

Efficiency: Only a partial solution

It is argued that there are still huge gains to be made to increase water use efficiency. This is true but there are limits. Domestic and in-

dustrial water use efficiency can be improved through current and foreseeable technological development. The space for major improvements in efficiency is definitely more limited in agriculture and forestry. Huge amounts of water are consumptively used through evapo-transpiration to grow trees and crops. This is particularly important because water use for agriculture corresponds to 70 percent of the total global water use and for more than 80 percent in many low and middle income nations.

It is also clear that pressures driven by the expected global warming and by population increase will only worsen this situation. These increased pressures could perhaps be managed through adequate measures to mitigate climate change and enable adaptation with the help of science and technology. If the improvement in water productivity achieved in agriculture in some areas in recent years could

be extended globally, then water resources should probably be able to cope with the 50 percent increase in the world population that is expected over the next four decades. Unfortunately, much higher pressures are expected to develop as a large segment of the global population, including countries such as China, India and the countries of Southwest Asia, raise their standard of living. Such countries are reaching economic and educational levels that fully legitimate the wishes of their citizens to approach the standards of living and consumption of the citizens of the developed countries.

In order to control the severe water crisis that looms on a non distant horizon, we will need to show extraordinary creativity. We need to set in motion systems of governance and regulation that are capable of ensuring long-term sustainable development. If politicians are solely concerned with recovering the financial system’s stability and ignore the social and environmental domains of the Earth’s system, then it might be possible, in the short term, to get the financial system on its feet. But in the long term, the planet’s health will again be stricken down by water scarcity, energy crisis, food insecurity, and climate change.

The threat of a global water resources crisis is both very frightening and entirely probable. We must concentrate on the global project of protecting mankind through the preservation of the natural resources. We will need creative solutions to simultaneously confront the financial, social and environment global crises. Our main concern must be to create, with the utmost urgency, the necessary conditions for human creativity to flourish in the domains of politics, science culture and ethics. World leaders need to put this at the top of their agenda. Clearly the most urgent task is to establish the centrality of water problems in the not so distant crisis threatening the future of humanity.

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