



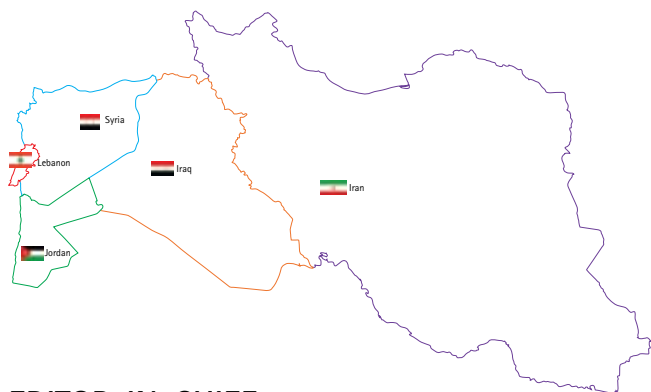
The World Bank Group

# Development HORIZONS

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In this edition

**Climate Change: Middle East  
Faces Looming Challenges**



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## The World is Changing – And So is the World Bank!



**T**he World Bank Group has emerged from this year's Spring Meetings with a resonant vote of confidence in its poverty-reduction mandate and strong support for its vision of a multi-polar world economy, where the developing and developed nations pool their resources and work more in partnership to overcome the global recession and serve global public goods in a sustainable manner.

The Development Committee, which represents the 186 stakeholders and holds the purse strings, endorsed an historic US\$86.2 billion capital increase to support the Bank's strategic directions in the aftermath of the financial meltdown. Interestingly, the capital increase, the first in 20 years, was committed by the richer economies as well as developing countries, underscoring multilateralism and burden-sharing. Indeed, the decision was partly motivated by the Bank's swift response to the global crisis with commitments since 2008 topping US\$105 billion. The Bank's rapid and quality response has strengthened the institution's leading role in facing the present-day development challenges.

The capital increase also signaled support for the extensive reforms underway in the World Bank Group to reflect the post-crisis changes in the dynamics of the world economies. Significantly, the Spring Meetings culminated in an increase in the voting power of developing countries from 44 percent to 47, with a promise to raise that to 50 percent in due time. This gives developing countries a louder voice in the Bank's decision-making process to better reflect the realities of the new multi-polar global economy, where some countries may be lagging behind in certain aspects of social and economic development, yet they still carry weight as global economic players.

The world is changing. And sweeping changes in the World Bank Group are just around the corner.

The institution is poised to begin as of July 1 consecutive reforms that aim to consolidate transparency in its work and efficiency in delivering services to client countries. This process includes a ground-breaking access to information policy, governance and anti-corruption initiatives, a new knowledge strategy, investment lending reform and decentralization, to name but a few.

Skeptics might have argued that the Bank's preoccupation with the global recession would derail the course of reform. Instead, it provided an added incentive to aggressively consolidate its role as the leading development institution that is positioned well to swiftly respond to crises with a unique mix of quality policy advice and adequate financial support. The additional capital will enable the Bank to further sharpen its strategic focus where it can add most value, helping countries to: better target the poor and vulnerable; create opportunities for growth with a special focus on the business environment and infrastructure; promote global collective action on issues from Climate Change and trade to agriculture, food security, energy, water and health; strengthen governance and anti-corruption efforts; and prepare for crises.

In a previous issue of Horizons, we addressed the global recession and how the Bank and countries of the region partnered to overcome its adverse impact. In this issue, we selected Climate Change, another serious challenge the region is – and will be – facing for some time to come. Climate Change, in particular its impact on water resources – a rare and precious commodity in our region – is unequivocal. From available data, we will explore natural conditions and examine some of the political economy of Climate Change and how severely its impact will be on MENA. We will attempt to outline areas where the World Bank and MENA countries should partner to address Climate Change challenges under a framework of regional cooperation.

The impact of Climate Change could be disastrous to the world's poorest countries. It could disrupt people's access to basic needs such as food, water and protection from extreme weather. Those that will suffer the worst consequences of Climate Change have contributed the least to the problem because they do not own or use many goods that require fossil fuels to operate and as such have been the least contributors to the depletion of our planet.

In the previous issue of Horizons we had examined the issue of water resources in MENA, which is the most water scarce region in the world and where per capita availability in the region is predicted to halve by 2050 as the population grows. The conclusion was that scarcity was only one of the water-related challenges facing MENA countries; and climate change is another issue: altered rainfall patterns due to Climate Change; shifting demand structures due to growing industrial and urban pollution; rising sea levels; and the consequences of unpredictable more frequent severe weather changes (drought and floods) all combine to complicate efforts of governments and countries to adapt, mitigate and continue to develop. Additionally, geopolitical conflicts have and will continue to contribute to the obstruction of reliable cross-border water-sharing arrangements.

This proves that countries in the region will need to invest in knowledge and institutions to: (i) understand climate change and its impact on their ecological systems in the broader sense of the word "ecology" (economy, society, infrastructure, natural resources etc...); and (ii) develop and implement mitigation and adaptation strategies in collaboration with neighbors. While complying with global protocols and agreements, countries in the region need access to the wealth of resources (technical and financial), which developed countries have to make available to address this global challenge. In doing so, MENA countries can position themselves to transform the challenges of climate change into development opportunities. This is what we intend to discuss in this issue of Horizons.

**Hedi Larbi**  
Director  
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# Climate Change and the Middle East

- by Dorte Verner\* and Jesse Biroscak\*\*



The Earth is getting warmer. Glaciers around the world are melting, droughts and floods are becoming more frequent, sea levels are rising, and the ocean is becoming warmer and more acidic. The climate is changing and already affects the lives of the people living in the areas impacted by such changes. This article summarizes the information available on how and why the climate is changing. It explores some of the political economy of climate change and how that can directly impact the Middle East and North Africa (MENA). Three broad areas are outlined where the World Bank can help MENA countries to address climate change challenges under a framework of regional cooperation. General recommendations are subsequently offered for countries and individuals in MENA regarding actions to take to adapt to and mitigate the effects of climate change. The article concludes with a description of climate financing.

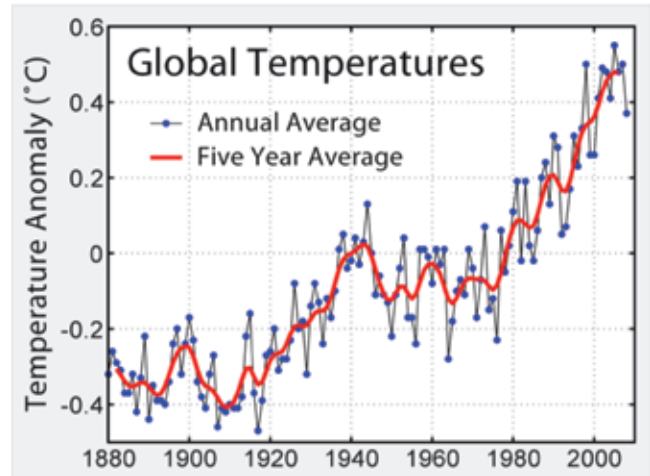
## Background

We are experiencing the warmest temperatures in over 400 years. Throughout the Earth's history, the climate has fluctuated on time scales ranging from hundreds of thousands of years (the ice ages), to decadal or even year-to-year variations (El Niño cycles). These changes are caused by variations in the Earth's orbit, differences in the amount of light coming from the Sun, fluctuations in volcanic activity blocking warmth from the Sun, and variability in ocean currents and temperatures that change the way air circulates. However, the warming trend since the beginning of the Industrial Revolution in the late 18th century does not fit with any of those known cycles. The average temperature on Earth increased 0.6 degrees Celsius (°C) from 1800-1900 and 0.74 °C from 1900-2000. In 1910, the global average temperature was around 14.45 °C. Now, the global average temperature is approximately 15.45 °C, registering a 1°C increase. In fact, the past decade was the warmest since temperatures began to be reported in 1880, and 2009 was the warmest year on record, that is the warmest in over 400 years<sup>1</sup>.

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<sup>1</sup> NASA - <http://www.giss.nasa.gov/research/news/20100121/>



[http://www.globalwarmingart.com/wiki/File:Instrumental\\_Temperature\\_Record\\_png](http://www.globalwarmingart.com/wiki/File:Instrumental_Temperature_Record_png) (other sizes available on the website – please note the licensing agreements on the same page. Use appropriate citation methods.)

Why has the Earth gotten warmer, especially in the past few decades? El Niño cycles do not last long enough to explain a warming trend this sustained; volcanoes did not cause the increase because they have not been less active over that period (decreased volcanic activity means less blocked sunlight from discharged particles, which in turn means a warming effect); and the Sun has actually cooled slightly, so that cannot have caused the warming.

We do know that specific molecules, like carbon dioxide and methane, are produced primarily by burning fossil fuels such as oil, coal, and gas. The period since the beginning of the Industrial Revolution has seen a dramatic increase in the levels of greenhouse gases emitted into Earth's atmosphere. We know that greenhouse gases warm the air and we know that when known increases in greenhouse gases are put into climate models, they account for all of the unexplained warming of the past four or five decades. For those reasons, the Intergovernmental Panel on Climate Change (IPCC) declared in 2007 that "[t]here is very high confidence that the global average net effect of human activities since 1750 has been one of warming,"<sup>2</sup> which means that there is a more than 90 percent chance that humans are causing the climate to warm.

## Science

To better comprehend how climate change works, imagine that the atmosphere is a big, porous screen that allows heat-trapping radiation to escape after the Sun heats up the Earth. When specific molecules clog up the screen until the radiation can no

<sup>2</sup> IPCC - [http://www.ipcc.ch/publications\\_and\\_data/ar4/syr/en/mains2-2.html](http://www.ipcc.ch/publications_and_data/ar4/syr/en/mains2-2.html)

# The Middle East



longer easily escape, the Earth is left hotter overall. The amount of carbon dioxide in the atmosphere has increased from 280 parts per million (ppm) in pre-industrial times to around 387 ppm today. Oceanographers estimate that atmospheric levels of carbon at 360 ppm will doom Earth's coral reefs if sustained over the long term. Our current levels of carbon emissions have already caused a 1 °C increase in global temperatures, which has visibly melted 39.2 percent of Arctic glaciers in 28 years, shown in the picture below, courtesy of NASA.



<http://www.350.org/about/science>

The levels of methane, another carbon-based greenhouse gas that is 23 times more potent than carbon dioxide, have more than doubled from 700 parts per billion to 1,745 parts per billion. It is emitted by burning fossil fuels, by raising livestock, and through accumulation of waste in landfills. These two gases are at their highest levels in at least 650,000 years and are proven to cause the climate to warm.

A stated increase of 1 or 2 °C indicates a rise in the average global temperature. However, in some places the temperature increases are much higher or much lower than the average. The many effects related to temperatures increases though, such as glacial melt, rising sea levels, intensification of hurricanes and wind-storms, and the extinction of sea life (e.g., from coral bleaching), have wide-ranging ramifications throughout the food chain.

The impacts of climate change also disrupt the world's poorest countries the most by interfering with people's access to basic needs such as food, water, and protection from extreme weather. Those that will suffer the worst consequences of climate change have contributed the least to the problem because they do not own many goods that require fossil fuels to operate. Countries will need to reduce current carbon emissions through a process, called mitigation, to prevent the further warming of the climate. Due to the slow levels of action to mitigate the effects of climate change, countries will also need to develop ways to adjust to a warmer climate, a process called adaptation.

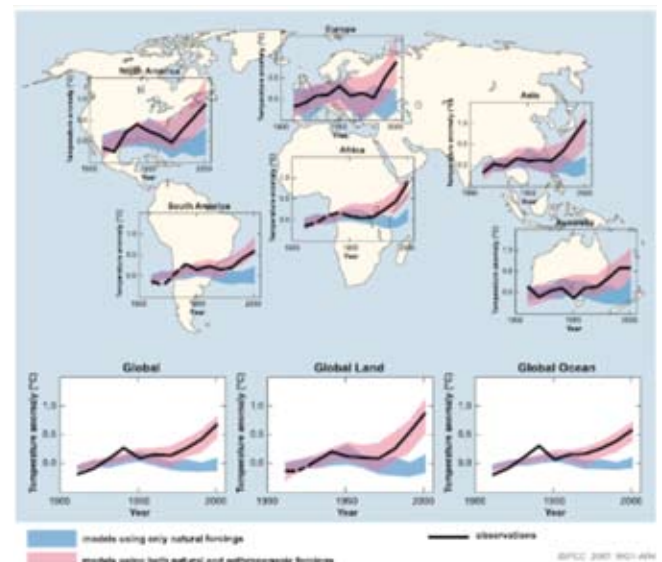
## Climate Change and Political Economy

Climate change is having a very serious impact on growth and development. The Stern Report estimates that if we do not act

immediately, we will lose between 5-20 percent of the global gross domestic product (GDP) each year due to the negative effects of climate change. The Report estimates that costs associated with addressing the problem (i.e., the costs to check or reduce global greenhouse gas emissions) can be limited to 1 percent of global GDP per year if we act now.<sup>3</sup>

The United States historically emitted the most carbon dioxide until around 2006 when China surpassed it. However, when the total emissions are divided per capita, the United States stays at the top. It is noteworthy that countries in the Middle East emit 6.4 tons of carbon dioxide per capita, whereas China emits 4.6 tons. While industrialized countries like the United States are historically responsible for the majority of climate change, it is critical that the issue be given attention by both developed and developing countries in order to mitigate the effects of greenhouse gas emissions.

Figure 1. Temperature changes relative to the corresponding average for 1901-1950 (°C) from decade to decade from 1906 to 2005 over the Earth's continents, as well as the entire globe, global land area and the global ocean (lower graphs).



The black line indicates observed temperature change, while the colored bands show the combined range covered by 90% of recent model simulations. Red indicates simulations that include natural and human factors, while blue indicates simulations that include only natural factors. Dashed black lines indicate decades and continental regions for which there are substantially fewer observations (from: [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/faq-9-2.html](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/faq-9-2.html))

<sup>3</sup> Stern Report - [http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/media/9/9/CLOSED\\_SHORT\\_executive\\_summary.pdf](http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/media/9/9/CLOSED_SHORT_executive_summary.pdf)

### Global Action to Reduce Greenhouse Gas Emissions

There have been multiple efforts to address climate change over the past 18 years. In 1992, the Rio Declaration on Environment and Development set out to guide future sustainable development around the world. The United Nations Framework Convention on Climate Change (UNFCCC) was established in 1994, and every member state of the UN now uses that Framework to consider what can be done to slow climate change and to deal with its consequences. Each year, the UNFCCC convenes a Conference of the Parties (COP) to further negotiate these issues. The latest was COP 15 in Copenhagen; COP 16 will be held in Cancun, Mexico in November 2010.



*Syria - Herds graze in the rural areas of Syria*

In 1997, countries within the UNFCCC adopted the Kyoto Protocol, which set binding emissions targets for 37 industrialized countries and the European Union. These amounted to an average of a 5 percent reduction against 1990 emissions levels over the five-year period 2008-2012. Unfortunately, that reduction level, which many countries have not yet achieved, is insufficient relative to what needs to be done to slow climate change. The use of the Kyoto Protocol as a basis and stepping stone from which countries might advance to larger reductions was well intended, but the United States never signed on and the Protocol never gained enough momentum.

Most recently, in December 2009, COP 15 attempted to develop a successor to the Kyoto Protocol. The resulting Copenhagen Accord sets a goal of limiting global temperature increases to 2 °C. Developed countries further agreed to provide \$30 billion yearly in "fast start" funding by 2012, and additional long term financing of \$100 billion a year from 2020. Still, the financing

sources, beneficiary countries, and management of the climate finance mechanism have yet to be determined. The agreement also addresses issues of technology, adaptation, forestry, and climate financing. However, the Accord is not legally binding; further negotiations will continue throughout 2010 to COP-16 in Cancun, Mexico.

It is especially noteworthy that the developing countries known as BASIC (Brazil, South Africa, India, and China) broke the deadlock at the end of the Copenhagen negotiations to reach an accord. The rapidly developing economies of Asia, Africa, and Latin America have emerged as keys to the solution.

### Climate Change and The Mena Region

The MENA region is particularly vulnerable to climate change. As one of the world's most water-scarce regions, it has a high dependency on climate-sensitive agriculture and a large share of its population and economic activity are in flood-prone urban coastal zones. On the other hand, societies in MENA have been under pressure to adapt to water scarcity and heat for thousands of years, and have developed various technical solutions and institutional mechanisms to deal with these environmental constraints. However, the speed of the current climate change and societal changes due to population growth and urban development mean that people and communities may no longer be able to adapt to these changes without assistance.

MENA, therefore, is a valuable repository of traditional and institutional knowledge, which, if preserved and made accessible, could prove to be an important contribution to global efforts to address climate change.

### Consequences in MENA

According to the latest IPCC assessment, MENA is predicted to become even hotter and drier during the coming years. Higher temperatures and reduced precipitation will increase the occurrence of droughts, an effect that is already materializing in North Africa. An additional 80-100 million people are estimated to be exposed to water stress by 2025, which is likely to result in increased pressure on groundwater resources already being extracted in most areas beyond the aquifers' recharge potential. Agricultural yields, especially in rain-fed areas, are expected to fluctuate more widely, ultimately falling to a significantly lower long-term average. In urban areas in North Africa, a temperature increase of 1-3 °C could expose 6-25 million people to coastal flooding. In addition, heat waves,



an increased “heat island effect,” water scarcity, decreasing water quality, worsening air quality, and ground ozone formation are likely to affect public health, and more generally lead to challenging living conditions.

Global models predict sea levels rising from about 0.1 to 0.3 meters by the year 2050 and from about 0.1 to 0.9 meters by 2100. For MENA, the social, economic, and ecological impacts are expected to be relatively higher compared to the rest of the world. Low-lying coastal areas in Tunisia, Qatar, Libya, UAE, Kuwait, and particularly Egypt are at significant risk.

## Impacts of Climate Change on Regional Development

Much of the progress in the region to tackle high unemployment and integration with the global economy can be jeopardized by climate change. Income and employment may be lost as a result of more frequent droughts in rural areas and floods and sea surges in urban and coastal areas. Changes in temperature and precipitation patterns may result in damage to strategic economic sectors such as tourism or high-value-added agriculture. The combination of such impacts is likely to slow down the economic reform processes and ultimately offset the growth benefits generated by oil revenues.

Climate change also poses many challenges to the region's cities, which represent hubs for economic, social, cultural, and political activities. Rising sea levels could affect 43 port cities—24 in the Middle East and 19 in North Africa; a 0.5 meter rise would leave more than 2 million people displaced in Alexandria, Egypt and cause \$35 billion in losses of land, property, and infrastructure, as well as incalculable losses of historic and cultural assets.

## Policy Directions

Good development policy is good adaptation and mitigation policy. Many countries implement individual projects designed to adapt to or mitigate the effects of climate change. Such efforts, however, are often insufficient to create large-scale, meaningful change. Basic structural changes to government policies are essential to address one of humanity's greatest challenges, rather than piecemeal and uncoordinated actions. Governments must not ask themselves which projects will deal with climate change,

**Good development policy is good adaptation and mitigation policy. Many countries implement individual projects designed to adapt to or mitigate the effects of climate change. Such efforts, however, are often insufficient to create large-scale, meaningful change.**

but rather whether projects will mitigate or exasperate the causes of climate change mentioned in this article. Are new public buses running on natural gas or renewable energy? Or are they running on a petroleum-based product? Will the new road be built using carbon-neutral materials? Or will it be built with concrete and asphalt,

which increase the carbon dioxide in the atmosphere both during and after production? Questions like these are essential to ask at every step of national development in order to reduce the anthropogenic impact on the climate.

In order to reduce vulnerability and increase resilience through actions geared towards adaptation and mitigation, **governments** can:

- Raise awareness on the effects of climate change in all levels of society
- Raise awareness on how populations can adapt to and mitigate the effects of climate change
- Re-evaluate development plans, policies, and processes to ensure that these and individual projects account for the effects of climate change
- Make projects “climate neutral” – this means changing government structures to consider where materials come from, how materials will be used, and what functions final products will perform
- Develop and use renewable resources, such as solar, wind, and hydropower, for energy production.

In order to reduce vulnerability and increase resilience through actions geared towards adaptation and mitigation, **individuals and communities** can:

- Actively seek out information on local causes of climate change
- Actively discuss such information with friends, relatives, and colleagues, perhaps forming groups to act to adapt or mitigate the effects of climate change based on such information
- Work with local authorities (e.g., community leaders, Sheikhs, mayors, political representatives, business leaders) on climate change related issues and urge them to act upon that information.





*Lady Sells Vineleaves in Syria*

### **The World Development Report 2010 sums up the above policy recommendations,**

"[Adaptation and mitigation challenges] can be tackled through climate-smart policies that entail acting now, acting together (or globally), and acting differently. Acting now, because of the tremendous inertia in both climate and socioeconomic systems. Acting together, to keep costs down and protect the most vulnerable. And acting differently, because a climate-smart world requires a transformation of our energy, food production, and risk management systems."<sup>4</sup>

The World Bank is ready to assist countries to make the above changes by providing concessional financing and technical assistance. National climate change strategies can be developed to specifically address climate change related issues in each country, and ministries can work with the World Bank to effectively and efficiently implement such strategies.

### **Climate Financing**

Developing countries can obtain support to assist efforts towards adaptation and mitigation and are not expected to take action on their own. Political and economic mechanisms, called climate finance instruments, are emerging to provide funds from

developed countries for adaptation, technology transfer, and mitigation. Mobilization of those resources through a shift towards low-carbon economies will help to both adapt to and mitigate the effects of climate change. Such shifts are already creating significant new business opportunities for countries to invest in new technologies and energy efficiency. China, for example, now possesses the largest installed wind power capacity and is the world's largest producer of photovoltaic (PV) solar panels.

Big countries, however, are not the only ones that can benefit from such investments. More specifically, low carbon growth can generate important national benefits for MENA's economies, some of which include the productivity gains and fiscal savings associated with improved efficiency in energy use, improved air quality, and reduced traffic congestion. However, technological barriers and low-priced energy in the region provide limited economic incentives – in the absence of external financial support – for a large-scale pursuit of low carbon development options.

**Acting now, because of the tremendous inertia in both climate and socioeconomic systems. Acting together, to keep costs down and protect the most vulnerable. And acting differently, because a climate-smart world requires a transformation of our energy, food production, and risk management systems.**

Climate finance instruments, like the Clean Technology Fund (CTF), finance concentrated solar power (CSP) projects in Algeria, Egypt, Jordan, Morocco, and Tunisia and can play a key role in unlocking MENA's potential in renewable resources and energy efficiency. Moreover, carbon markets and international agreements like the Copenhagen Accord have already started generating some of the neces-

sary funds and standards for climate adaptation and mitigation. COP 13 in Bali, for example, set out a roadmap for a new international agreement on the reduction of greenhouse gas emissions. It also launched a series of initiatives to help countries adapt to climate change, including the activation of an "Adaptation Fund" to be entrusted to the World Bank, with the Global Environment Facility (GEF) operating as secretariat of the Fund.

The GEF and the World Bank Group partnership strives to protect the global environment by promoting environmentally sound and sustainable economic development. One such example involves CSP in the Middle East and North Africa region. There, beginning in the late 1990s, GEF grants of \$40 million in Egypt and Morocco, coupled with a \$200 million investment from the Bank Group,

<sup>4</sup> <http://siteresources.worldbank.org/INTWDR2010/Resources/5287678-1226014527953/Overview.pdf> - page 10



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served to stimulate a renaissance of interest in the technology. This led to an investment scale-up project in the region through a \$5-6 billion endorsement from the CTF combined with concessional co-financing of \$750 million, helping to make the CSP technology commercially competitive with conventional electricity in regions with high annual direct solar insolation.<sup>5</sup>

## Conclusion

Climate change is already occurring and thousands of people in the MENA region feel its affects on a daily basis. Dying crops due to excessive, limited, or non-existent rainfall, longer travel times to collect water, and increases in dengue or other diseases that impact human health and income are all problems exacerbated by climate change. Projects, such as that in Morocco and Egypt involving CSP, are raising awareness levels among all stakeholders in the MENA region regarding the significance of climate change. Other similar projects are also working to adapt to and mitigate the effects of increasingly frequent droughts and a looming water supply shortage. While effective adaptation to climate change will ultimately depend on countries' commitment, the World Bank stands ready to assist in mainstreaming adaptation measures in MENA's development agenda during efforts to address climate change challenges.

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<sup>5</sup> *Insolation is a measure of solar radiation energy received on a given surface area in a given time. It comes from the words "incident solar radiation." The MENA Region has exceptionally high insolation.*

# Lebanon

## Social Impact Analysis for the Electricity and Water Sectors

- by Sebnem Akkaya\*, Nils Junge\*\* and Wael Mansour\*\*\*



### Introduction

This Quick Note, is based on the report "Lebanon: Social Impact Analysis for the Electricity and Water Sectors", issued by World Bank's Middle East and North Africa Region's Social and Economic Development Group in June 2009. The report considers implications for the consumer of current service provision and impending reforms in Lebanon's utility sector. It assesses: i) how different categories of households, and especially the poor, are affected by deficient electricity and water service; ii) the potential social impact of alternative reform scenarios, including tariff changes in the case of electricity and metering in the case of water; and iii) implications of better cost recovery measures in both sectors.

The findings are based on analysis of primary data collected from households; sector assessments undertaken recently by the World Bank and by other domestic or external agencies; and from consultations with stakeholders. Relatively little research on the energy and water sectors in Lebanon has been conducted to date on the household/consumer perspective<sup>1</sup>.

**The Electricity and Water Sectors in Lebanon:** The electricity and water sectors face major challenges in increasing supply and improving service. A striking aspect of the electricity sector is its heavy dependence on informal private generation operating outside any state supervision or guiding framework. In both the formal and informal water sector, quality concerns are of paramount importance—quality is a public health issue and there are serious additional socioeconomic consequences.

The report points to the following key similarities and differences between the two sectors from a social impact perspective:

- Both sectors suffer from inadequate supply. In the electricity sector this takes the form of highly uneven rationing. Water supply on the other hand, is constrained in every region by limited infrastructure capacity, population density and demand. Both sectors experience high commercial and technical losses. Beirut households enjoy

good electricity supply, with rationing limited to three hours a day, but the city receives the lowest water supply per household in Lebanon.

- A key problem in the water sector is a disconnect between supply and demand. The absence of a metering system means households pay a fixed fee for a fixed amount of water supply (or allotment). Solving this issue would rationalize water consumption to a degree. There appears to be an informal understanding between water companies and households: many households don't receive their water allotment, and the water companies often don't pressure households to pay their bills. The key problem in the electricity sector is high cost of alternative supply, which is utilized by 58 percent of households.
- Virtually all households are connected to the electricity network. Connection rates for water are 80 percent. However, given that water supply is inadequate in terms of both quantity and quality, connected households tend to purchase from alternate sources.
- Households have limited choice (on quality and cost) when it comes to electricity generation, with most buying from generator companies operating in the grey economy. There is a somewhat larger menu of options for purchasing water, available from tanker trucks, to wells, to large gallon bottles, and small bottles.
- Willingness to pay for improved electricity service is much higher for electricity than for water, reflecting the high cost and limited choice of electricity alternatives.

**Conclusions and Recommendations:** The overarching challenge facing Lebanon's public electricity and water sectors will be to establish trust with consumers. Major investments in each sector targeting infrastructure, management and while simultaneously improving performance human resources will need to take place while increasing revenue from consumers who have little faith in the system and want to see concrete results or credible action. The following remarks consider each sector separately.

**Electricity:** Design a more effective and simplified tariff structure. The current tariff structure is regressive and will do little to shield the poor from any future tariff increases. The inverted tariff block is not progressive—this is partly because it subsidizes all households and partly because effective kWh prices differ markedly from the quoted prices. This is especially so for low electricity consuming households.

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<sup>1</sup> The report should be read in conjunction with the "Republic of Lebanon Electricity Sector Public Expenditure Review, Report No. 41421-LB, Washington DC, January 31"; and "World Bank (forthcoming), Republic of Lebanon Water Sector Public Expenditure Review, Washington DC" which provide in-depth analysis of technical and institutional issues.



## **Ensure proper sequencing in implementing policy measures.**

The burden resulting from EdL's (Electricite du Liban) service decline has increased significantly, despite the fact that the cost of electricity purchased from EdL has remained relatively low for consumers. However, increasing tariffs to cost recovery levels without introducing commensurate service improvements would likely meet with resistance. Consumers must feel that the burden of reform is not placed entirely on their shoulders but is shared with EdL.

Reduce rationing, especially in the areas outside Beirut which experience long blackout hours. Among other things, this will have the effect of readjusting the burden imposed by rationing from the poor to the non-poor. Although there may be good reasons for keeping rationing in the capital to a minimum, it gives rise to social inequities. Beirut households have higher welfare levels and they are most able to afford paying for expensive substitutes. Most households in other regions must choose between going without electricity and spending significant amounts on private generation.

Establish operating guidelines for the informal electricity sector. The informal electricity sector, served by hundreds of private generator businesses, provides up to 30 percent of Lebanon's electricity and is an indispensable service to many households. Yet the sector lies entirely outside the legal framework and does not pay taxes to the state. It must be acknowledged that private generation will play a significant role in electricity generation for years to come. Hence, identification of proper operating guidelines that will protect and benefit consumers while ensuring continued availability of this alternative source should be given consideration and merit additional research work. Without dampening private sector activity, or generating layers of bureaucracy, the guidelines should attempt to:

- bring private generator businesses into the formal sector so that customers have access to means of redress for losses or damage incurred through faults on the supplier's side;
- enable the state to tax the sector like other businesses;
- set technical standards for service;

**Water** – Invest in improving water quality. In Lebanon, the burden on poor households comes from poor quality and low water supply, rather than high expenditures. Water expenditures by the low income households are in line with World Bank recommendations of 3 to 5 percent of household budget, but could be reduced if households relied less on alternative sources.

Although compared to other problems in water provision, reducing expenditures for consumers is not the top priority, the costs which consumers bear in terms of quality of service—poor reliability and potential health risks—are significant. A focus on improving quality and reducing losses, if accompanied by a public awareness campaign, would have a direct effect on welfare.

**Expand metering** – The current flat fee system is not serving providers or consumers well. Water companies cannot charge the marginal cost of production, and consumers do not get what they pay for. Pilot programs show that metering can be introduced, but unless metering is either region-wide or metered households are able to pay by volume, the benefits of metering will be limited.

To increase revenues, RWAs will need to address household concerns. RWAs can increase revenues in two ways, through improved bill collection and through tariff increases. In either case, RWAs will need to revise the informal and formal contractual agreements with households, raising tariffs and installing meters to link supply with demand, while also investing in improvements in quality. They will also need to strengthen collection enforcement mechanisms. To be successful, the new contractual arrangement will need to spread the benefits and costs between consumers and water companies in a manner acceptable to both.

# The Future of Agriculture in Lebanon under Climate Change

- by Julian Lampietti\*



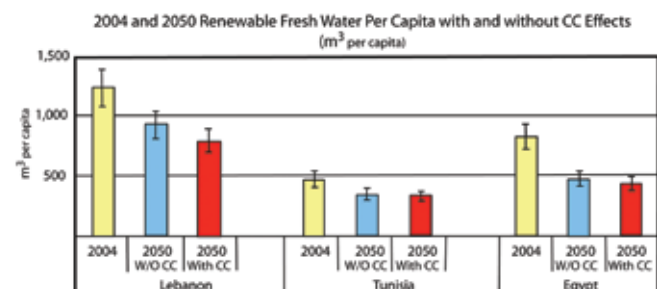
Lebanon's Mediterranean climate with its abundant winter rains and warm summers has been one of the region's most important natural assets for millennia. Lebanon has the highest average annual rainfall of any country in the Middle East (823 mm/year) and one of the highest levels of per capita water resources (1,110 m<sup>3</sup>).<sup>1</sup> Lebanon's farmers can take advantage of an early growing season to plant high value fruit and vegetables, and the country's location on the Mediterranean between Europe and the Gulf states gives it access to lucrative markets to sell their produce. But in spite of these natural advantages, one fifth of Lebanon's farmers continue to struggle with poverty, and part-time farming on fragmented plots constrains productivity. Irrigation systems and water storage facilities are unevenly distributed across the country, and most are badly in need of expansion and modernization. And more and more of the country's best agricultural land is being swallowed up by its ever expanding cities.<sup>2</sup> Global climate change will make these challenges to Lebanon's agricultural sector even more pressing.

Lebanon's location on the Mediterranean coast will protect it from the severe warming projected for some other countries in the Middle East, but temperatures, which have already been rising steadily over the past fifty years, will continue to go up. The Intergovernmental Panel on Climate Change's 4th report projects that by 2050 the average temperature in Lebanon during the winter months will rise less than the world average (by about 1 degree), but during the dry summer average temperatures may increase by as much as 2 degrees.<sup>3</sup> Precipitation in the form of rain and snow will decrease in the critical winter months by about 13 percent compared to current levels, and the already arid Lebanese summers will lose up to 7 percent of their rainfall. Drought, already a significant problem in parts of the country, will become more frequent and more severe.<sup>4</sup>

Agriculture in Lebanon will feel the effects of climate change mostly through the availability and distribution of water. In spite of the highest rainfall in the region, there are already shortages of water for irrigation during the dry summer months; without

adequate water storage facilities, much of Lebanon's fresh water flows from its rivers directly into the sea. Between a growing population and the effects of climate change, Lebanon may well be in a state of water scarcity by the middle of this century (figure 1).<sup>5</sup> Historically the snow capped Lebanon Mountains provided a form of natural water storage as slow snow melt through the summer months fed the springs and rivers of the lowlands. But satellite images taken over the past few decades record a significant loss of snow cover on mountain peaks. And warmer temperatures are making the snow that is there melt faster, increasing the risk of spring flooding while reducing runoff when it's most needed in the summer.<sup>6</sup>

Figure 1. Climate Change Effects on Renewable Fresh Water Availability per Capita, 2004 and 2050.



Source: Doumani, Fadi, 2009, *Environmental Degradation, Remedial and Averted Costs in Northern Lebanon Coastal Zone*, METAP. Washington, D.C.

Note: Total renewable fresh water is the sum of: Total internal renewable water resources, which is the long-term average annual flow of rivers and recharge of aquifers generated from endogenous precipitation. Double counting of surface water and groundwater resources is avoided by deducting the overlap from the sum of the surface water and groundwater resources; and External renewable water resources, which is the sum of the total natural external surface water resources and the external groundwater resources. Extrapolation based on a reduction among the three countries due to a combination of lower precipitation and lower runoff with a margin of error of  $\pm 12.5\%$ .

The exact impact of the warmer and drier conditions under climate change on Lebanon's agriculture are in the process of being evaluated—Lebanon's Second Communication to the UNFCC is currently in preparation—but there is enough data from other

\*Lead Program Coordinator, Agriculture and Rural Development, MENA

<sup>1</sup> FAO 2009, *Aquastat*, FAO, Rome.

<sup>2</sup> World Bank, 2010, *Lebanon Agriculture Sector Note: Aligning Public Expenditures with Comparative Advantage*, Washington, DC: World Bank.

<sup>3</sup> As reported in Doumani, Fadi, 2009, *Environmental Degradation, Remedial and Averted Costs in Northern Lebanon Coastal Zone*, METAP. Washington, D.C.

<sup>4</sup> Bou-Zeid, E. and M. El-Fadel, 2002, "Climate Change and Water Resources in Lebanon and the Middle East," *Journal of Water Resources Planning and Management*, 343-355.

<sup>5</sup> Doumani, Fadi, 2008, *Climate Change Adaptation in the Water Sector in the Middle East and North Africa: A Review of Main Issues*, Washington, D.C.: METAP.

<sup>6</sup> Shaban, Amin, "Indicators and Aspects of Hydrological Drought in Lebanon," *Journal of Water Resources Planning and Management* 23:1875-1891.



# Lebanon



areas to suggest some of the adaptations that Lebanon will need to introduce. The strategies that will make agriculture in Lebanon more productive under current climate conditions—outlined in the recent World Bank Lebanon Agriculture Sector Note—will become even more critical to cope with a changing climate.<sup>7</sup>

Agriculture is a small but stable part of the Lebanese economy; the agricultural sector has made up a steady 6–7 percent of GDP over the past decade. Compared to other countries of the Middle East and North Africa this is a relatively small fraction of the total economy, but with the exception of Egypt, Lebanon's agriculture value added per square kilometer is at least six times greater than any other country in the region (Table 1). The fruit and vegetables that make up about two thirds of Lebanon's agricultural production are largely responsible for this high value-added,<sup>8</sup> and improvements in productivity in this sub-sector are likely to deliver the highest dividends in terms of overall growth.



*Grapes of Lebanon*

Cereals and tobacco, which make up the remaining third of production, are not well positioned for growth. Lebanon currently imports about 83 percent of its cereals making it very vulnerable to the kind of food price shocks that rocked the Arab world in 2008.<sup>9</sup> But increased domestic production of wheat does not appear to be a viable solution for the country's food security. Converting agricultural land currently used for higher value fresh fruit and vegetables to wheat production would decrease exports and

weaken Lebanon's fiscal balance, making it more difficult for the country to respond to sudden rises in world grain prices. Increasing wheat production is a particularly poor prospect under the hotter conditions of climate change which are likely to dampen cereal yields.<sup>10</sup>

**Table 1: Agriculture plays a relatively small role in Lebanon's economy, but the country is very productive in terms of agriculture value added per square kilometer.**

Country	Agriculture Value Added (% of GDP)	Agricultural Employment (% of Total Employment)	Agriculture Value Added (Constant 2000 US\$) / Agricultural Land (sq. km)
Egypt	13.0	29.9	556,549
Jordan	3.1	3.6	26,019
Lebanon	6.1	12.0	278,163
Morocco	12.4	44.6	22,155
Syria	20.4	27.0	43,572
Tunisia	10.9	--	28,172

*Source: World Bank, 2009a; Chamber of Commerce, Industry and Agriculture of Beirut and Mount Lebanon (CCIAB), 2009*

*Note: Ag. Value Added Data is for 2007, Ag Employment data is for 2003 with the exception of Morocco (2006) and Lebanon (2009 estimate). All data is from the World Bank, except for Lebanon agriculture employment data (CCIAB, 2009).*

Tobacco farming is currently supported by massive government subsidies (US\$ 51.1 million in 2008) that help to support 24,000 farmers. But the future of the tobacco industry in Lebanon does not look promising. The World Health Organization's Framework Convention on Tobacco Control and Lebanon's goal of accession into the World Trade Organization will make it difficult to justify the high cost of subsidizing this sector. Transitioning away from tobacco for dependent farmers will be difficult, but studies from other countries have shown that uncoupled monetary support as well as extension services to provide information and technical assistance about crop diversification can make the move to other crops a viable alternative to perverse subsidies.

The high value fruit and vegetable sector in Lebanon can continue to prosper under new climate conditions only if irrigation, water storage, and water productivity are improved. The Government of

<sup>7</sup> World Bank, 2010, *Lebanon Agriculture Sector Note: Aligning Public Expenditures with Comparative Advantage*, Washington, DC: World Bank.

<sup>8</sup> Agricultural statistics reported for 1999. FAO 2009, *Aquastat*, FAO, Rome.

<sup>9</sup> World Bank, 2009, "Improving Food Security in Arab Countries." Washington, DC: World Bank.

<sup>10</sup> World Bank 2010, *WDR 2010, Development and Climate Change*, Washington, DC: World Bank.

## The Future of Agriculture in Lebanon under Climate Change

Lebanon has adopted an ambitious irrigation strategy that aims to increase irrigation potential by 30 to 50 percent in the next 30 years. But the fragmentation of irrigation planning and management into numerous government agencies has made it very difficult to implement this strategy efficiently, and no overall master plan has been formulated to prioritize the investment programs and water-use of the various agencies. The hotter drier conditions under climate change will make it more urgent to adopt water efficient agricultural practices such as low-till cultivation, drip irrigation, rainwater harvesting and drought tolerant crop varieties—as well as to fund better research and development and extension services to develop and bring these technologies to farmers.<sup>11</sup> But water efficient practices must be accompanied by limits on groundwater extraction or Lebanon's aquifers, already threatened by salt water intrusion, risk dangerous depletion.<sup>12</sup>

Improvements to irrigation will need to be accompanied by investments in water storage capacity, which is now far below the level of other MENA countries: dam capacity accounts for only 5 percent of total renewable water resources in Lebanon, against



*Olive Tree, Lebanon*

56 percent in Morocco and almost 300 percent in Egypt. Better water storage protects farmers from both floods and drought, and well planned dams will be a key adaptation to the variability

### **Better water storage protects farmers from both floods and drought, and well planned dams will be a key adaptation to the variability of precipitation expected under climate change.**

of precipitation expected under climate change. Some of the funds for these improvements could be obtained through the phasing out of the tobacco subsidy since more efficient irrigation will make conversion to fruits and vegetables more profitable for affected farmers. This kind of restructuring will require a coordinated initiative among many government agencies including the Ministry of Finance (responsible for the tobacco subsidy), the Ministry of Agriculture (administering the Green Plan), the Ministry of Energy and Water (guiding irrigation investment) and the Litani River Authority (responsible for the largest river basin in the country).

In order for Lebanon's fresh fruit and vegetable sector to achieve its potential it will be necessary to increase its share of both the domestic and export markets. Some measures to lower the sector's cost structure and increase competitiveness will also be good climate change adaptations: increasing irrigation efficiency, moving away from chemical fertilizers, and increasing incentives for long term investment by improving land tenure will lower both costs and vulnerability to climate extremes. Targeting high-end niche sectors that have higher premiums and more stable revenues is one promising avenue for expansion of the sector. Investments in quality control, safety and marketing will be important to develop this niche, particularly in order to penetrate lucrative European markets. More public investment in research and development—which is now below the developing country average at only .4 percent of GDP—will be critical to find ways to improve food quality and safety within the regional context. The Government can also provide incentives for more private sector participation in investments in cold storage, shipping, and information systems that help facilitate the timely transportation of perishable produce. Again, the major stumbling block to these kinds of coordinated efforts toward growth in the high value agricultural sector is the fragmentation of decision making among Lebanon's many governmental agencies. A critical recommendation of the Lebanon Agriculture Sector Note is to consolidate agriculture expenditures in the hands of a single institution, and to create a Food Quality and Safety Directorate that would oversee the certification and marketing of the high value produce that promises to be the future of agriculture in Lebanon.

<sup>11</sup> World Bank 2010, WDR 2010, *Development and Climate Change*, Washington, DC: World Bank.

<sup>12</sup> Doumani, Fadi, 2009, *Environmental Degradation, Remedial and Averted Costs in Northern Lebanon Coastal Zone*, METAP. Washington, D.C.



# World Bank Group Frees Up Development Data

The World Bank Group said today it will offer **free access** to more than 2,000 financial, business, health, economic and human development statistics that had mostly been available only to paying subscribers.

The decision – part of a larger effort to increase access to information at the World Bank – means that researchers, journalists, nongovernmental organizations (NGOs), entrepreneurs and school children alike will be able to tap into the World Bank's databases via a new website,

**[data.worldbank.org](http://data.worldbank.org)**

Experts say the Bank's open data initiative has the potential to stimulate more evidence-based policymaking in developing countries by bringing more researchers and innovative analysis into the development process. The move is also likely to stimulate demand for data and increase countries' capacity to produce it, they say.

And, for the first time, data will be available in languages other than English, with an initial 330 indicators translated into French, Spanish and Arabic.



*"It's important to make the data and knowledge of the World Bank available to everyone. Statistics tell the story of people in developing and emerging countries and can play an important part in helping to overcome poverty."*

World Bank President Robert B. Zoellick

# Lebanon

## Partnership Program

**O**n August 2, 2007, the World Bank's Board of Executive Directors endorsed the World Bank's Interim strategy Note (ISN). The three pillars identified in the 2005 CAS continue to guide the Bank's program in Lebanon with a shift in focus on supporting early reform implementation. The three pillars are:

- (i) Governance for economic management and growth support;**
- (ii) Development of human capital and the mitigation of the poverty effects of transition; and**
- (iii) Resource and environmental management.**

The ISN presents a program for 12 to 15 months focusing on analytical assistance backed by financial resources to advance the implementation of the medium term expenditure and social reform agenda. The program includes two Development Policy Loans supporting the broader reform program with a particular focus on the energy and social protection sectors.

The Lebanon Portfolio consists of 8 active projects that are concentrated in education, water, and infrastructure. Three of these projects are funded by the International Bank for Reconstruction and Development (IBRD) and five are funded by the Lebanon Trust Fund (LTF). The Lebanon portfolio also contains four grants that are funded by the International Development Fund (IDF) and Post Conflict Fund (PCF).

### **International Bank for Reconstruction and Development (IBRD)**

**Ba'albeck Water Supply & Wastewater Project (US\$43.5 million)** – The major development objectives include: (a) developing and strengthening the capacity of the Ba'albeck Hermeil Water and Irrigation Authority (BHWIA) and the Zahle and Chamsine Water Authorities; (b) improving the access of the customers of the BHWIA to satisfactory water supply and wastewater services; (c) involving the private sector in the operation and maintenance of the water and wastewater facilities; and (d) rationalizing the use of water through the introduction of water meters.

**Urban Transport Project (US\$65 million)** – The Project's objectives are to provide the city of Beirut and the Greater Beirut Area with the basic institutional framework that is currently lacking and to support critical investments needed to maximize the efficiency of the urban transport infrastructure.

**Cultural Heritage and Urban Development (US\$31.5 million)** – The project finances: (a) priority site conservation and enhancement investments and associated urban infrastructure

improvements in the selected sites of Ba'albeck, Byblos, Saida, Tripoli and Tyre, and (b) technical assistance services to strengthen the capacity of the Directorate General of Antiquities, the Directorate General of Urban Planning, and target municipalities in cultural heritage preservation and tourism development.

### **Trust Fund for Lebanon**

During the September 2006 Annual Meetings, the World Bank's Board of Governors approved a grant of US\$70 million for a Trust Fund for Lebanon to support the Government's reconstruction efforts following the recent hostilities. The money comes from the Bank's surplus, and does not involve any additional debt burden for Lebanon. The Trust Fund is being used to scale up existing projects and advance projects already under preparation. Part of the grant was allocated to the International Finance Corporation (IFC), the private sector arm of the World Bank Group, which is working, in close coordination with the government on a program to rehabilitate Lebanon's private sector, focusing, among other elements, on small and medium enterprises and the removal of administrative barriers.

At the request of the Government, the World Bank carried out an Economic and Social Impact Assessment in 2006, which provided important inputs into the preparation of the Government's reconstruction and reform program. The Government adopted this program on January 4, 2007 in advance of a Donor Conference which took place in Paris on January 25, 2007 where the Bank pledged to offer up to US\$700 million over the next four years (2007-2011).

### **The Lebanon Trust Fund is financing the following 5 projects:**

**Municipal Infrastructure Project (US\$30 million)** – This grant aims to: (i) restore basic services and rebuild municipal infrastructure in the most affected municipalities and villages, and (ii) provide technical assistance to and build the capacity of municipalities to mitigate the impact of the hostilities on municipal finances.

**West Beka'a Emergency Water Supply and Modernization Project (US\$15 million)** – The objectives of the project are to: (a) operate and maintain water and waste water facilities in the Beka'a Region, (b) undertake rehabilitation works using the operations and the investment fund to be made available by the government, and (c) bill and collect on behalf of the Regional Water Utility for all its customers.





**Emergency Power Sector Reform Capacity Reinforcement Project (US\$5 million)** – The objectives are to accelerate the design and implementation of reforms by enhancing the capacity of in the Ministry of Energy and Water, the Electricity Utility and the Higher Council for Privatization.

**Second Emergency Social Protection Implementation Support Project (US\$6 million)** – The project will improve the administration, delivery, financial sustainability, and targeting of social services through implementation of new systems and the adoption of new policies in the NSSF, Ministry of Labor, Ministry of Public Health, MOSA, Presidency of Council of Ministers, and the Ministry of Education and Higher Education. These systems and policies will improve access to and quality of the social insurance, social safety net, health and public education services, to the Lebanese middle class, and poor and vulnerable populations.

**Emergency Fiscal Management Reform Project (US\$4 million)** – The project will contribute to improving the control, allocation and use of public financial resources, by implementing a number of interlinked measures in budgeting, debt and aid management designed to improve efficiency and transparency in government financial management.

#### **Institutional Development Fund (IDF) Grants**

**Supporting the Judiciary System in the Enforcement of Environmental Legislation (US\$327,000)** – This program aims to strengthen the capacity of the Ministry of Justice and the Ministry of Environment in judicial enforcement in environmental affairs and is implemented by UNDP.

**Developing Capacity Building Tools for Sustainable Governance (US\$338,000)** – The objective of the Project is to build the capacity of the Institute of Finance in developing and providing a sustainable source of high quality, specialized training in public financial management, project management and leadership building through the development of new curricula and case studies and by delivering high quality training and capacity building.

#### **Post Conflict Fund (PCF) Grants**

**Mechanism for National Reconstruction (US\$1.25 million)** – The Grant supports the establishment by the Government of Lebanon of a system to manage and monitor the reconstruction funding in an effective and transparent manner, promoting international standards and good practice.

**Nahr Al Barid Emergency Recovery Project (US\$2.025 million)** – The objectives of the Project are to assist Lebanon in re-building social infrastructure and strengthening social services, and to facilitate the economic recovery in the localities surrounding the Nahr al-Barid camp.

**Al Fayhaa Sustainable Development Strategy–Cities Alliance (US\$345,190)** The objective of the project is to assist the Municipality of Tripoli to develop a strategic development framework that would assist the concerned local authorities and other stakeholders to prepare and activate response mechanisms to face the urban challenges facing the community.

# Syria

## Impact of Drought and Climate Change on Agriculture

- by Maurice Saade\*



At a time when the global debate over climate change has revolved around discussions of what might happen by 2050 or 2100, many analysts are arguing that the impact of climate change is already clearly and painfully visible in Syria. The 2006-2009 drought was the worst in more than four decades and had a devastating impact on crop production and livestock herding, particularly in the Northeast and the Badia (steppe). This has forced hundreds of thousands of small farmers and herders to migrate to the urban centers in search for jobs. The severe socio-economic and humanitarian impacts of this recent drought in Syria could serve as an important lesson for Syria and other countries in the region in anticipating what kind of preparedness plans, policies, investments and programs will be needed for adequate adaptation to climate change particularly in the rural areas.

### Syria has a high level of social and economic dependence on agriculture.

Agriculture contributes about 25 percent of GDP and is the main source of employment and income for 35 percent of the population. The sector generates about 20 percent of non-oil exports and is a major source of raw materials for the processing industries. The major field crops grown are wheat, barley, cotton, sugar beet, tobacco and lentils, and the main fruits are olives, grapes, apples, almonds, pistachios and citrus. While only one third of cultivated land is irrigated, about two thirds of total crop production originates in irrigated agriculture. Livestock contribute around 37 percent of agricultural GDP, but this is subject to large fluctuations as a result of drought and other natural calamities.

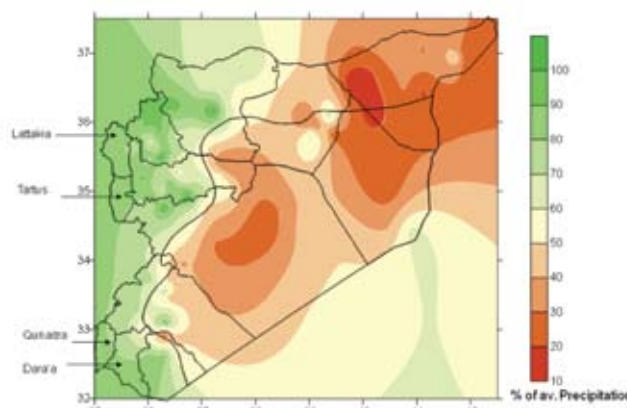
Over the past four decades Syria's agricultural strategies have been driven by the pursuit of self-sufficiency in wheat and other strategic crops and concerns for social welfare in rural areas. The Government has invested in the agriculture sector as a source of growth for the economy as well as a source of food security. Rapid expansion of irrigated areas became a cornerstone of the government strategy to increase agricultural production and stabilize rural incomes. The irrigated area doubled in size from 0.6 million hectares in 1985 to 1.3 million hectares today. This strategy, based on subsidized irrigated field crops, encouraged inefficient water use and has led to rapid depletion of the country's water resources. The overall water deficit currently stands at more than 30 percent of the available renewable supply.

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### The drought of 2006-2009: the worst in four decades

During the past three cropping seasons (2006/2007 to 2008/2009), Syria has suffered three consecutive years of severe drought. The 2007/2008 season in particular had the worst rainfall levels in more than four decades and affected almost every part of the country. Out of the 154 weather stations 36 percent registered rainfall levels 50-80 percent below average and another 26 percent registered 25-50 percent below average<sup>1</sup>. As shown in figure 1, the north-eastern province of Al-Hassakeh, which is the traditional breadbasket of Syria, was most severely affected by the drought. The Badia region, a huge expanse of dry steppe grazing land which supports Bedouin herders, was also equally affected by the drought. Both regions already suffer from the highest levels of rural poverty in Syria.

Figure 1: Syria: Cumulative Rainfalls  
September 2007- May 2008 as a percentage of average annual



(Source: United Nations Inter-Agency Assessment Mission, 11-25 August 2008)

As a result of the severe drought, the average yield of basic food crops (wheat, barley, lentil and chickpeas) in 2007/2008 dropped by 32 percent in the irrigated areas and by as much as 79 percent in the rain-fed areas. Total national wheat production was 51 percent below the average of the previous 10 years, while barley production was one third lower. The drought has also resulted in decreased vegetation in the rangelands, where contribution to feed resources dropped to negligible levels. As a result, herders were forced to sell their animals at very low prices and a large number of small herders lost almost all their animals<sup>2</sup>.

<sup>1</sup> United Nations Inter-Agency Assessment Mission, 11-25 August 2008.

<sup>2</sup> Ibid.



By the beginning of the 2008/2009 cropping season, it was estimated that about one million people had seen their livelihoods and assets shrink dramatically as a result of the drought. It was hoped that the distribution of food aid and subsidized feed by the Government and aid agencies would help the most vulnerable people to maintain their livelihoods and stay on the land to sow their fields and hope for the best that rainfall levels would go back to normal and bring with them good crop harvests and sufficient vegetation in the rangelands for their animals. The rains did fall in reasonable amounts in the western part of the country through most of the 2008/2009 season. However, it soon became clear that the Northeast and the Badia would suffer from another dry year, and the cumulative effect of three years of drought had reached disastrous levels. According to FAO<sup>3</sup>, the crisis has negatively impacted the livelihood and food security of an estimated 1.3 million people in the worst affected zones. The drought has caused severe food and water shortages and drastic decline in health and nutritional status. Many farmers suffered total crop failure for two consecutive years, while over 70 percent of animals belonging to small- and medium-scale herders had to be sold at very low prices due to lack of pastures and soaring feed costs. It was estimated that the income of severely affected groups had plummeted by 90 percent compared to 2006 levels<sup>4</sup>.

The drought also forced 250,000-300,000 families (at least 1.25-1.5 million people) to migrate to the cities in search of alternative work and entire villages have been reported to be completely deserted<sup>5</sup>. The 2009/2010 growing season has already witnessed relatively good rainfall levels and promises to finally put an end to the worst drought spell in more than forty years. However, it remains to be seen if the farmers and the herders who migrated from the northeast would ultimately return back to their villages to resume their previous livelihoods.

### More frequent droughts: the most visible negative impact of climate change in Syria

The severity of the 2006-2009 drought has convinced the majority of analysts and decision-makers – as well as farmers and herders – that similar severe drought spells are bound to become more frequent in Syria as a result of climate change. For the Middle East and North Africa region, the World Bank estimates

that the frequency of droughts has already increased from one event every 10 years at the beginning of the 20th century to five or six events each decade now<sup>6</sup>.

The magnitude and scope of the full impact of climate change on Syrian agriculture is very difficult to predict accurately. To date, climate change simulation models have only focused on very large geographical areas and specific projections for Syria are not yet available. Nonetheless, the 2007 projections by the International Panel on Climate Change (IPCC) for the Middle East and North Africa predict an increase in temperature up to 2°C in the next 15-20 years and over 4°C by the end of the 21st century<sup>7</sup>. This increase could be accompanied by a decline of up to 20 percent in the level of precipitation. These changes will result in shorter and warmer winters, dryer and hotter summers, and more variability and extreme weather events occurrence.



Syrian Nuts

photograph by Dorte Verner

For agriculture, the anticipated impacts of the above projected changes will likely be very negative and will take several forms. As illustrated by the 2006-2009 drought in Syria, the most direct and visible impact of climate change will be more frequent crop failures and sharp reduction in animal production and herd size, and as a result, massive people exodus to urban areas. The reduced average participation levels combined with higher temperatures will sharply decrease water availability as expressed in terms of water runoff – the difference between rainfall and

<sup>3</sup> Food and Agriculture Organization of the United Nations. *FAO's Role in the Syria Drought Response Plan 2009*. August 11, 2009. Rome.

<sup>4</sup> Ibid.

<sup>5</sup> IRIN News ([www.irinnews.org](http://www.irinnews.org)), 2 September, 2009; and 24 November 2009.

<sup>6</sup> World Bank website: <http://beta.worldbank.org/content/middle-east-north-africa/01/27/2010>

<sup>7</sup> IPCC. 2007. *Climate Change 2007 - Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC*. Cambridge University Press.

## Impact of Drought and Climate Change on Agriculture



Syrian Produce

evapotranspiration – which is expected to decline between 10 to 30 percent in most of the region<sup>8</sup>. The projected increases in temperature during the irrigation season will significantly increase the demand for irrigation water while overall water availability will sharply drop. Moreover, the reduced water runoff is expected to significantly reduce groundwater recharge. In Syria, this would further exacerbate the already very serious problem of rapidly declining groundwater levels as well as the flow of rivers and streams.

Agricultural productivity in the Region is anticipated to suffer losses because of high temperature, drought, floods and soil degradation, which, in turn, will put the food security of many countries, such as Syria, under threat. A 2007 study provides estimates by country of the impact of global warming on agriculture<sup>9</sup>. For Syria, it is estimated that by 2080 crop yields will decline by an average of 15-25 percent compared to the year 2000.

The combined increase in temperature and decline in rainfall is expected to cause shifts of agro-ecological zones and a possible decline in total agricultural and range lands. In Syria, this shift would be towards the more favorable northwest and coastal zones. The rainfed wheat production belt in the northeast could shrink due to a northward shift in wheat cultivation. Unless

compensated by a significant increase in yields, this could sharply reduce Syria's self-sufficiency in wheat. The vast drier barley production belt at the edges of the Badia could expand northward to replace parts of the current wheat production areas. As for the rangelands, lower precipitation and continued overgrazing could result in rapid degradation, loss of biodiversity and desertification. This is also likely to translate into more frequent dust storms that would spill-over from the Badia and affect large parts of western and northern Syria. In fact, cities such as Damascus and Homs have already suffered from more frequent dust storms during the past three years of drought.

Even in the more favorable agro-ecological zones, the increase in summer and winter temperatures may seriously reduce productivity of high-value crops, particularly fruit trees. As often observed in warmer parts of the Middle East (e.g. in Egypt and northern Saudi Arabia), several fruit species, such as olives, peaches and apples, will not flower unless they are exposed to a minimum number of days of cold temperature<sup>10</sup>. Unusual warm weather in winter could also trigger pre-mature budding or flowering, which would expose fruit trees to greater risks of frost damages. Hence, the likelihood of severe crop losses for some fruit crops could increase as a result of projected warmer winters in a country like Syria, which could force farmers to shift to alternative lower-value crops.

Finally, there is increasing concerns that animal pests and diseases under climate change could severely impact animal production<sup>11</sup>. The lack of prior conditioning to extreme weather events can result in major losses in confined livestock feedlots. Moreover, animal nutrition models have shown that higher temperatures can put a ceiling to dairy milk yield from feed intake. Similarly, higher temperatures could negatively affect the conception rates of domestic animals not normally adapted such conditions. Such potential negative impacts on animal health and production could become quite significant in Syria given the increasing importance of animal exports and the gradual shift towards more intensive sheep feedlots in light of the rapid degradation of the rangelands.

<sup>8</sup> FAO, 2008. *Climate Change: Implications for Agriculture in the Near East*.

<sup>9</sup> Cline, W. 2007. *Global Warming and Agriculture: Impact Estimates by Country*. Washington, DC: Peterson Institute for International Economics.

<sup>10</sup> This is often referred to as the vernalization requirements, which differ between various fruit species and varieties.

<sup>11</sup> World Bank. 2008. *Climate Change Response Strategies for Agriculture: Challenges and Opportunities for the 21st Century*. Agriculture and Rural Development Discussion Paper 42. Washington, DC.



# Syria

## Post-Financial Crisis Recovery and Outlook for 2010\*

- by Christian Saborowski and Hania Sahnoun, MNSPR\*\*



Economies around the globe have been hit hard by the financial crisis and the developing world has not been spared, primarily due to a substantial drop in global demand. Syria is no exception and its real economy slowed, although the crisis impact has been modest relative to other Arab and Middle Eastern economies. After three consecutive years of severe drought, the global downturn was the second major shock hitting its economy and Syria's per capita growth rates remain far below potential. With a new five-year plan in the making, and with an ambitious reform agenda ahead, dealing with the consequences and costs of these crises will be an important factor in determining the development and growth prospects of the Syrian economy in decades to come.

### Growth slowed as supply and demand factors took their toll

A record three-year drought led to a severe supply contraction in the agricultural sector. Agriculture accounts for around a quarter of Syrian GDP, a figure that is large relative to the country's income per capita (US\$2,600 in 2008). Low productivity and a system of subsidies, which cost the Syrian government about 4% of GDP in 2007, exacerbate the impact of the contraction in supply. After shrinking at rates almost in the double digits in 2007 and 2008, one of the backbones of the Syrian economy is only slowly recovering. The farming regions in the north and east of the country in particular have had to cope with high rates of job loss, decreased food intake and massive internal displacement. A large share of the population has been made dependent on emergency food assistance and other forms of public support.

The Syrian agricultural sector started to recover in 2009. But plummeting global demand constituted a second major adverse shock. While Syria's financial sector is not much interlinked with global financial markets and prudential regulation is restrictive, export demand has taken a hit. The decline in demand, mainly from European economies and the GCC states, has slowed real growth and led to a worsening of the current account deficit. Exports shrunk by 17 percent year-on-year in 2009<sup>1</sup>. Foreign investment and remittances only dropped slightly by 7 and 4 percent, a contraction that becomes significant when looking at recent growth trends in these sources of financing. Although the crisis impact was moderate, an expansionary policy response was justified to support aggregate demand and bolster an economy previously shaken by the poverty impact of three years of intense drought.

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<sup>1</sup> Mainly due to a drop in world oil prices, non-oil exports shrunk by only 1 percent according to the IMF.

Figure 1: FDI and remittances only dropped slightly despite the global crisis (in US\$ billion)



Source: IMF

### Fiscal stimulus and some help from monetary policy

What could such a policy response look like in a transition economy in the midst of major reforms, whose exchange rate is pegged to a basket of currencies, which is in the process of introducing treasury bills and whose interest rates are de-facto not liberalized? With monetary policy sidelined, stimulus had to come from the fiscal side. And it did. Syria took an expansionary fiscal stance during 2009 with total expenditure growing by 5 percent of GDP, largely due to rising public investment, public wages and transfers to compensate for rising fuel prices, widening the fiscal deficit by two percentage points to about 5.5 percent of GDP. Policy measures were also aimed at mitigating the impact of the drought (see box 1).

#### Box 1: Fiscal Stimulus

##### 2009 Fiscal Policy stimulus:

- 23 percent increase of the wage bill
- Investment spending increased by about 40 percent in nominal terms
- Partial reversal of the fuel price increases introduced in May 2008.

##### 2009 Emergency measures for the agricultural sector:

- Distribution of food aid
- Exemption of all taxes and fees for a period of ten years for projects in the eastern area
- Debt rescheduling plan for farmers in the region severely hit by the drought.

The scope for independent monetary policy is gradually increasing in an economy with an exchange rate peg. Nevertheless, it has taken on a supportive role during the crisis. The Syrian Central

Bank put in place a range of measures including a lowering of reserve requirements (up to 5 percent) and indicative lending rates, thereby easing the monetary policy stance and further strengthening fiscal policy efforts.

Was this policy response appropriate? In the absence of a contraction in aggregate demand, an expansionary fiscal policy response to a supply shock (the drought) would have run the risk of inducing stagflation. But given the global crisis that followed, the expansionary stance was suitable: first, because the supply and demand side impacts of the two crises needed to be countered in the face of their impact on economic growth and poverty, especially in the northern and eastern rural areas; and second, because substantive progress was made in fiscal consolidation and subsidies reform prior to the crisis. What is more, the policy measures, it seems, achieved their objective.

### The Syrian economy is recovering

Recent developments suggest that the Syrian economy weathered the global financial crisis relatively well. Although the fiscal deficit widened by 2.5 percentage points to 5.5% in 2009, both internal and external accounts fare at sustainable levels. This implies that the expansionary policy measures can and should be sustained until the economy is on a more solid footing. Syrian policymakers should plan for a careful phasing-out of the stimulus alongside the long awaited introduction of a VAT and further fiscal consolidation. Continued reform of the costly system of subsidies by gradually reducing the number of goods subject to administrative pricing will be critical. A downside risk will be the ongoing decline in oil revenues.

With real growth slowing to 4 percent in 2009, the economy is growing only marginally in per capita terms as population growth rates are still high. Yet, successful structural reforms in recent years and continued progress in the years to come can make the Syrian economy more attractive in terms of both investment and export demand and may allow it to benefit disproportionately once global demand picks up in the aftermath of the crisis. Post-crisis growth may receive further support from a recovering agricultural sector, larger volumes of remittances and a booming tourism sector that already contributed to softening the impact of the crisis in the closing year.

In addition to the slowdown in economic growth, the global crisis led to a substantial widening of the current account deficit, reaching 4.5 percent of GDP in 2009 with exports falling faster than the demand for imports. The estimated current account

deficit is thus 2 percentage points higher than in 2007. This increase largely reflects both the drop in global demand and expansionary policy actions taken during the crisis, yet is likely to revert to lower levels once global demand picks up in the course of 2010 and expansionary fiscal measures are withdrawn.

With the rebound of commodity prices and recovery of global trade, the outlook for 2010 indicates a strengthening in economic performance for Syria. The economy is projected to grow by 5.2 percent in 2010. Still, policy challenges remain. Policymakers will be faced with devising a fiscal adjustment strategy while being mindful of the need to protect spending on the poor and sustain recovery.

### Policy challenges

A challenging year lies ahead of the Syrian economy. The expansionary fiscal policy stance needs to be withdrawn gradually in order to rebalance fiscal accounts; ongoing improvements in the efficiency of fiscal spending especially in infrastructure need to continue. At the same time, a new Five-Year plan is in the making and the ambitious reform agenda launched since 2004 is to be strengthened and further progress in its implementation made at a faster pace.

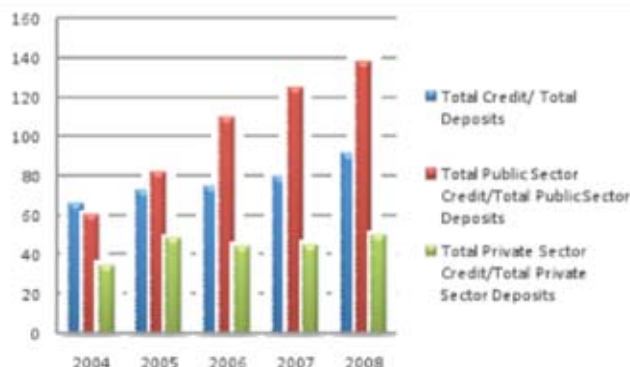
The main policy challenge remains largely the same as before the crisis: the ongoing decline in oil production has driven both the current and the fiscal accounts into deficit. This trend needs to be offset by a focus on policy measures aimed at encouraging entrepreneurship and investment with the ultimate goal of boosting non-oil growth and diversifying and increasing exports volumes and earnings. Only in continuing on the reform path can sufficient progress be made to increase living standards while accommodating strong population growth and offering jobs for the ever larger work force.

Three areas stand out as targets for continued reform. First, although subject to significant reform efforts in previous years, the financial sector requires further in-depth reform. The restructuring of the financial sector is a major step in accelerating the transition to a social market economy. While credit volumes have grown strongly during the past five years, an excessively large share is still channeled into the public sector and too little is reaching private firms (see Figure 2). As a result, private investment is low. In order to improve the financial sector's capacity to channel credit to its highest value use, financial intermediation needs improvement. Increasing the risk assessment capacities of both private and public banks can be one way of embarking on



this path. Various additional challenges remain in the financial sector, including a strengthening of the Damascus stock exchange recently re-opened and the issuance of treasury bills.

Figure 2: Transformation of deposits into credit



Source: Central Bank of Syria, IMF

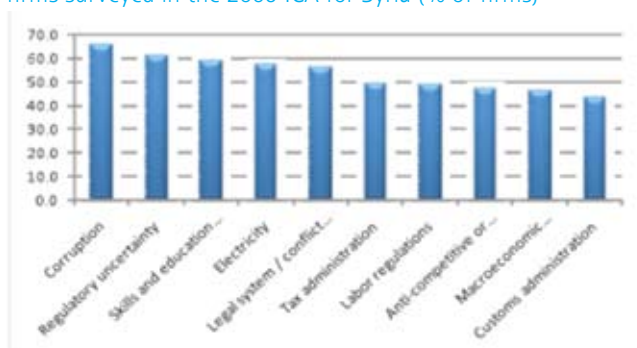
The second main challenge for Syria is to continue opening up its economy to world markets and to further diversify its production base and export basket. While the competitiveness of the Syrian import regime has improved markedly in recent years, rates of protection are still high, preserving the anti-export bias hampering export-led growth. Moreover, the regime is unnecessarily complicated and both infrastructure and trade facilitation services require substantial improvements. Last but not least, trading costs exceed those of Syria's peers and a competitive export incentive system should urgently be put in place. Reforms should focus on simplifying the import protection regime, reducing trade costs and improving export incentives.

Third, a major impediment to increasing private investment, both domestic and foreign, is the poor business environment and business infrastructure. Weak accountancy standards among SMEs currently do not allow firms to give strong signals of creditworthiness and have delayed the long awaited introduction of a VAT, which is urgently needed to consolidate fiscal accounts. Moreover, the 2009 ICA suggests that firms view corruption and regulatory uncertainty as the two major obstacles holding back business growth in the private sector (see figure 3). An important step in removing sources of corruption and moving towards a social market economy would be the streamlining of the system of subsidies currently costing the state a large share of its budget and severely distorting markets, and the implementation of the governance action plan recently adopted by the government of Syria.

Finally, these structural reforms should be complemented by the ongoing reforms of the education sector, the social protection system, agriculture and water resource management and last but not least management of natural resources and environment to sustain high job-creating growth.

In sum, Syria has taken the appropriate measures to mitigate the impact of two major macroeconomic shocks hitting its economy in recent years. At the same time, it has embarked on an ambitious reform path, the successful completion of which will put it in a position to improve living standards and grow sustainably in decades to come. However, income is still low relative to other MENA countries and the main policy challenge remains to increase non-oil production and employment to offset the ongoing depletion of oil reserves.

Figure 3: Major obstacles to Business Growth according to firms surveyed in the 2009 ICA for Syria (% of firms)



Source : ICA 2009

### World Bank Analytic and Advisory Assistance (AAA) in Syria

The Bank's technical assistance (TA) / Analytic and Advisory Assistance AAA program focuses on three main strategic areas:

#### Economic Growth and Transition

**Governance TA culminating in a National Governance Symposium** held on May 23-24, 2009 under the auspices of the Prime Minister on (i) civil service reform, (ii) corporate governance, (iii) public financial management, (iv) fighting corruption, (v) governance indicators and (vi) the role of parliamentarians and civil society in advancing the good governance agenda. At the Symposium, the Government developed an ambitious governance reform action plan to be implemented in the coming two years with Bank assistance, focusing on public financial management, civil service reform, corporate governance and the ratification of the UN Convention against Corruption (UNCAC).

Support to the Ministry of Finance in **Public Financial Management (PFM) Reform**, to improve fiscal control by linking policy and budget management; support budget integration to increase the focus on service delivery/quality, and strengthen fiscal/budget control and reporting to improve performance and transparency.

A **Public Expenditure Review (PER)** is being conducted in close cooperation with the Budget Department in MOF, which will provide essential analysis and tools to strengthen its capacity in macroeconomic projections and forecasts, expenditure prioritization and selection, budget preparation, as well as monitoring and evaluation.

A **Country Procurement Assessment (CPAR)**, which consists of an evaluation of the current procurement and contract management practices and recommendations of relevant reforms and improvements to upgrade Syria procurement system to international standards. The Government has decided to review, in collaboration with the Bank, the public procurement law and its implementation and will use the CPAR's recommendations in the process of redrafting the law and implementing procurement system reforms to further transparency and efficiency.

A **Review of Trade Policy Reforms**, to help the government sequence and prioritize its trade policy reform efforts as part of a coherent strategic framework. The Government has endorsed the findings of the Bank's diagnostic review of Syria's trade

policy reforms, and has requested further Bank advice on key specific areas for further trade reform such as export diversification, trade financing, free zones, and the removal or tariffification of non-tariff barriers.

A **Country Economic Memorandum (CEM)**, which is looking into constraints to and opportunities for growth and economic diversification in Syria, particularly in the non-oil sector, in close collaboration with the Deputy Prime Minister's Office. This work would provide the basis for the design of a strategy for broad-based, inclusive economic growth for Syria. Accordingly, the CEM will be a key input for the Government's 11th Five-Year Plan.

An update of the Bank's 2005 **Investment Climate Assessment (ICA)** to provide up-to-date information and advice to the Government on priorities to improve investment climate and further promote private sector development.

Capacity Building on **Doing Business (DB) Indicators**, to build the government's capacity in understanding the methodology underpinning the DB indicators, and identify potential reforms to improve the business environment. Following a Doing Business workshop, organized by the Bank in March 2009, a draft reform action plan focusing on business environment reforms has been prepared by technical working groups under the leadership of the Ministry of Economy and Trade. This action plan has been adopted by the authorities and implementation is being started with Bank assistance.

#### Human Development and Social Protection Support

A comprehensive **Labor Market Study** – utilizing the MILES framework – which will look at the constraints to the creation of good quality jobs in a manner that addresses the cross-sector interdependence of macroeconomic (M), investment climate (I), labor (L), education and skills development (E) and social protection policies (SP). The MILES exercise will be a key input for the Government's 11th Five-Year Plan.

A multi-year technical assistance program on **Reform Options for Social Insurance (Pensions and Unemployment Insurance)** aims to assist the Ministry of Social Affairs and Labor, and the Prime Ministry, in design and implementation options for pension and unemployment insurance systems. This includes examining the fiscal feasibility and options for introducing forms of social insurance.





A follow-up to the recently completed **Education Sector Strategy**, through capacity building for evidence-based policy making in education, as well as assessment of expansion options for higher education that are affordable, of high quality and meet the demands of the labor market.

## Environment Improvement for Sustainable Development

An **Electricity Sector Strategy Study** aims to identify options to improve the financial and technical performance of the electricity sector, particularly on ways to reduce the electricity demand and supply gap. It will also provide options for sectoral reforms and institutional changes needed to improve the efficiency and quality of service delivery and to enable private participation in electricity sector investments.

**Technical Assistance in the Transport Sector**, through workshops and working papers focused on determining the role and importance of the Transport sector in the Syrian economy, providing a framework for assessing the sector investment priorities, improving the efficiency and effectiveness of urban transport, and supporting the preparation of a national transport action plan.

**Technical Assistance in the Agriculture and Irrigation sectors**, to support the Government in the implementation of a National Agricultural Support Fund, reviewing and rationalizing the agricultural subsidy schemes, and in the development of a national Rural Development strategy.

## Additional Support through Trust Funds

**Japan Social Development Fund (JSDF) grant** (US\$2,888,000) to improve the employability of marginalized youth, defined as youth aged 17-20 years with less than a 9th grade education who have been out of work for more than 2 years. The grant will rely on strong private sector participation, building partnerships across providers and developing the organization capacities of local institutions and NGOs to provide targeted technical training and work skills in two pilot governorates.

**Avian Influenza Preparedness Grant** (AHI Facility) (US\$1,360,070) to assist the Government of Syria in minimizing the risk of outbreaks of the Highly Pathogenic Avian Influenza (HPAI) in domestic poultry and to strengthen Syria's preparedness and control capacity for potential outbreaks in humans.

**Trust Fund for Statistical Capacity Building Grant** (US\$389,000) to enhance the capacity for economic survey processes and analysis of the Syrian Central Bureau for Statistics. Three main areas of support: the design of questionnaires, support to the conduct of surveys and capacity building on data processing and analysis.

**PPIAF Grant for PPP Capacity Development** (US\$75,000) to provide assistance in developing the legal and institutional framework for **Public Private Partnership (PPP)** under the Deputy Prime Minister's Office, including: (i) support to the preparation of a policy note outlining the Government's PPP vision and operating guidelines; and (ii) the review and finalization of a PPP Law.

# Jordan

## Macroeconomic Outlook in the Context of the Global Turmoil

- by Sebnem Akkaya\*



The global economic slowdown has created several medium-term challenges for Jordan. The three most important of these are lower global oil prices (which have a positive impact on trade deficit but a negative impact on transfers and capital account), lower private capital flows to developing countries (which were a major source of growth for Jordan in the recent past), and sharply lower global and regional growth outlook (which affect exports and remittances). Reflecting these effects, domestic economic performance has worsened since September 2008. The collapse in commodity prices favored a reduction in expenditures through a decline in budgetary subsidies but also generated a drop in tax revenues because of lower prices and lower economic activity. Also, while improving the current account balance, the decline in international prices and more broadly global turmoil has reduced foreign inflows, and negatively affected growth and employment.

### Real Sector Developments

**Economic activity slowed down significantly in 2009.** The real GDP growth for the first three quarters of 2009 remained at 2.7 percent, compared to 9.1 percent for the same period in 2008. According to preliminary figures, foreign direct investment (FDI) to Jordan declined by 54 percent in the first three quarters of 2009 (y-o-y). Because of its strong trade with Gulf economies, data available for the past ten years show a strong sensitivity of FDI, exports of goods to the Arab countries, exports of services and remittances to the change in the international oil prices. Therefore, the sectors that experienced the strongest slowdown are those who usually benefit from the capital inflows, foreign transfers and foreign demand (financial services, community and personal services, wholesale and retail trade and manufacturing). Other sectors that benefited from public spending (public services, construction) and from tourism related activity (hotels, restaurants) continued to grow.

**Inflation was negative in 2009, following the drop in international prices.** Inflation measured by the Consumer Price Index declined by 0.6 percent on average (y-o-y). The decline in the CPI was the strongest in the second and third quarters of the year, reaching negative 2.4 percent on average (y-o-y). This mainly reflects the decline in international oil and food prices. Imported inflation has a strong impact in Jordan, with imports of goods amounting to 67 percent of domestic absorption between 2005 and 2008. Estimations based on data available up to October 2009 show that prices of imported goods have decreased by 15 percent.

### Fiscal Developments

**Preliminary data confirm a significant slowdown in revenues in 2009.** While income tax revenues increased by 27.0 percent over the first eleven months in 2009 (y-o-y), all other revenues are on the decline, with particularly large decline in land registration fees (42.7 percent). The collapse in commodity prices and lower demand generated a drop in general sales tax and customs revenues by respectively 0.2 and 6.2 percent in 2009 (y-o-y). The Government granted tax exemptions to the tourism sector and extended the tax exemptions on some imported construction materials to end-2009. The overall increase in domestic revenues during the first eleven months of 2009 is limited to 3.3 percent (down from 14.6 percent for the same period last year). According to preliminary estimations, domestic revenues would not exceed 25.6 percent of GDP, down from 26.7 percent in 2008. In addition, grants from various donors, especially from Gulf countries, also declined sharply from 4.8 percent of GDP in 2008 to 2.1 of GDP in 2009.

**The collapse in commodity prices favored a reduction in expenditures through a decline in budgetary subsidies but also generated a drop in tax revenues because of lower prices and lower economic activity.**

**Despite some savings from budgetary subsidies due to sharp decline in international commodity prices, public spending in 2009 remained high resulting in high fiscal deficit.** According to preliminary figures, capital expenditures increased by 49 percent in

2009 (y-o-y), compared to a budgeted increase of 23 percent. The Government has however contained current expenditures which increased by only 1.2 percent (preliminary figures). The overall increase in expenditures is 9.5 percent (27.6 percent in 2008). Consequently, the already high level of expenditures to GDP in 2008 at 36.1 percent increased further to reach 36.6 percent in 2009. This combined with slowdown in revenues led

\* Lead Economist



to a further significant deterioration of the fiscal balance. Fiscal deficit excluding grants is expected to rise to 11.2 percent of GDP (9.4 percent in 2008); and fiscal deficit inclusive of grants is expected to reach 8.7 percent of GDP (4.6 percent in 2008).

**Jordan's public debt has increased in 2009.** With the slow-down in revenues in 2009 and the decline in foreign grants, the gross debt to GDP ratio is expected to rise to 66.8 percent of GDP (compared to 62.4 percent in 2008). The composition of public debt has changed in 2009 with domestic debt amounting to around 65 percent of the total (61 percent in 2008) and with the short term domestic debt (maturity less than one year) rising to represent more than 70 percent of the increase in total debt. The net debt ratio remained at around 60 percent ceiling envisaged under the public debt law. Over the coming period, a stronger discipline in fiscal policy as envisaged under the government's 2010-2013 medium term budget program—keeping debt increases below the rate of growth of the economy—is expected to put the debt ratio on a downward path.

## External Accounts

**The external balance improved due to the sharp decline in the prices of imported goods.** The current account deficit (CAD) was cut by half in the first three quarters of 2009, reaching US\$1.18 billion against US\$2.28 billion a year earlier despite a drop in remittances by 3.3 percent. The improvement in CAD is mainly due to a sharp decline in trade-in-goods deficit by 25 percent. The CAD is expected to decline to less than 8.0 percent of GDP in 2009 (down from 11.4 percent in 2008). Reserves in foreign currencies of the Central Bank of Jordan (CBJ) increased to US\$11.0 billion in November 2009 (equivalent of 9.8 months of goods imports), up from US\$8.6 billion at end-2008. The increase in the reserves of CBJ reflects the improvement in external balances and the conversion from foreign currency denominated deposits to Jordanian Dinar denominated deposits.

## The Financial Sector

**The Central Bank of Jordan has taken pre-emptive steps to maintain confidence and support the domestic money market.** These measures include a full guarantee of all bank

deposits by the Government till end-2010, scaling back operations to soak up liquidity, reducing policy interest rates (so far by 200 bps) and reducing reserve requirements (from 10 percent in October 2008 to 7 percent currently). Money Supply (M2) increased by 9.0 percent to US\$28.2 billion in November 2009 compared to end-2008. A year earlier, M2 increased by 16.8 percent over the same period. The liquidity position of the banking system remains comfortable and the share of dinar deposits has continued to increase since 2008, reflecting the interest rate differential between dinar and dollar denominated deposits. The dollarization of resident deposits registered 16.5 percent in November 2009, down from 21.3 percent at end-2008. Overall lending to the private sector increased by only 2.1 percent in 2009 compared to end-2008, reversing the annual growth of 14–28 percent in each of the last four years. Finally, the Amman Stock Exchange index declined by 11.6 percent between end-2008 and end-2009, reflecting mainly the drop in the Banking sector index by 17.7 percent.

**Jordanian banks were not immediately affected by the first round impact of the global financial turmoil but started reflecting the impact of the economic downturn in the second half of 2009.** Limited integration with global financial



Jordanian Dinars

markets buffered Jordan from the financial turmoil preventing immediate and direct losses among banks. However, the second round effects of the financial turmoil have the potential to develop into more discernable trends. Banks' credit portfolios are characterized as being relatively highly concentrated and the real estate, construction, and foreign trade sectors are vulnerable to weaker market activity. Banks with substantial exposures to these sectors as well as to markets abroad through their foreign operations are likely to be more adversely affected by the slowdown.

<sup>1</sup> In 2008, Jordan signed a buyback operation at an 11 percent discount rate with 10 Paris Club member states. The operation covered up to US\$2.4 billion of foreign debt and the effective buyback after discount amounted to US\$2.1 billion. This operation brought the share of external debt from 59 percent at end-2007 to 39 percent at end-2008, down. Since then, all new debt is being contracted locally and the share of external debt has declined to around 35 percent of total debt by end-2009.

## Macroeconomic Outlook in the Context of the Global Turmoil

Some deterioration in loan quality is expected by both the authorities and the banks as economic activity slows, the long period of high credit growth reverses, and property prices soften. Currently, banks are monitoring exposures closely and re-pricing credits and/or cutting credit lines to customers facing increased risks, especially in the real estate and foreign trade sectors. Notwithstanding a moderate decline in the banking system's capital adequacy ratio in 2008 due to implementation of Basle II standards, the aggregate ratio remains well above the 12 percent requirement. The non-performing loans ratio increased to 6.4 percent in 2009 from 4 percent in 2008.

### Outlook

**The ongoing global economic turmoil and uncertain outlook pose exceptional challenges to Jordan's short- to medium-term economic prospects.** Jordan's strong regional ties provided a cushion in its exposure to global economic slowdown—given the relatively limited impact of the financial turmoil in the region. Still the economic outlook is characterized by a high level of uncertainty, related to the evolution of world commodity prices, the level of foreign current and capital inflows as well as the regional security situation. Jordan has, however, demonstrated strong resilience to dramatic external economic and political shocks since 2003, maintaining focus on comprehensive development strategy. The Government's increasing emphasis on cushioning the population from the impact of the price shocks and economic downturn since 2008 led to a divergence from the fiscal consolidation program and erosion of fiscal gains achieved over the previous years. Looking forward, however, the ongoing efforts to re-institute the fiscal discipline and address the economic slowdown by accelerating the key structural reforms which have been under preparation over the last several years combined with selected strategic infrastructure projects to be developed with private sector participation, and short-term policy actions aimed at addressing immediate adverse impact of the crisis, augur well for a continuation of the more cautious economic policies of the recent years. Building on these fiscal and structural reforms, its strong regional ties and the prospect of economic recovery in the region, Jordan is projected to grow by around 4% in 2010.

**Jordan's public debt can be kept on a sustainable trajectory provided fiscal adjustment continues.** Public debt was significantly reduced in 2008 with debt to GDP ratio dropping by over 10 percentage points to 62.4 percent, thanks to the Paris

Club debt buyback as well as rapid nominal GDP growth. The Government took some actions to contain expenditures in 2009 especially in the face of much weaker-than-envisaged revenue performance and grants in the original 2009 budget. The Budget Law for 2010 envisages a significant reduction in public expenditures (particularly capital expenditures) in terms of GDP by more than 6.0 percentage points compared to 2009. Some consolidation is also planned in current expenditures through controlling wages and salaries and reducing/eliminating compensation transfers introduced mainly in 2008, but this remains more measured compared to the planned reduction in capital expenditures. A stronger discipline in fiscal policy—keeping debt increases below the rate of growth of the economy—will, in turn, put the debt ratio on a downward path by 2012.



# Jordan

## Experience with Public-Private Partnerships

- by Paul Nomba-Um \*



### Introduction

Private Public Partnerships (PPPs), also called Private participation in infrastructure, are not new in Jordan. During the past two decades, the Government of Jordan has been successful in closing a significant number of PPP transactions. Since 1990, it is estimated that private investments in infrastructure have reached or exceeded \$ 4,000 million. Jordan has been a front runner in the region in using PPP schemes to develop its infrastructure, but could have attracted more private capital in infrastructure by further strengthening its PPP framework, developing a robust pipeline of projects and by building the capacity of its institutions to implement PPP projects. This short note reviews the experience that Jordan has gained in PPPs during the past decade, discusses the main lessons stemming from this experience and outlines how the PPP agenda can be taken forward.

### The Rationale for Promoting in Infrastructure PPPs in Jordan

During the past decades, Jordan has been successful in addressing its infrastructure development challenges. Universal access to basic infrastructure services has been achieved as shown by Table 1.

Table 1 – Access Rate to Basic Infrastructure Services in Jordan

Infrastructure Service	Jordan Access Rate	MENA Average Access Rate
Paved Roads (% total km of roads) – 1999	100	58.3
Access to electricity (% of population) – 2000	85	90.5
Fixed line and mobile phone subscribers (per 100 people) – 2007	93.7	67.9
Access to improved water source (% population) – 2006	98	60.7
Access to improved sanitation (% population) – 2006	85	52.3

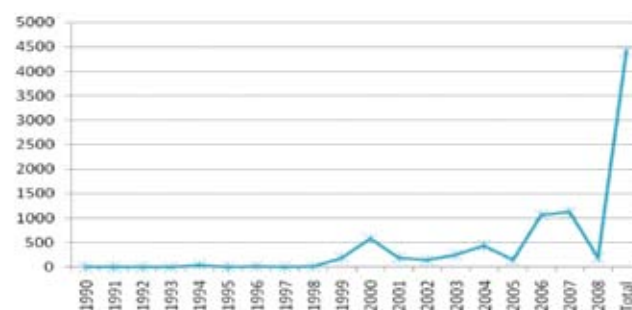
Source: WDI, 2009.

However, strong economic growth, rapid urbanization and the structural transformation of the Jordanian economy are creating new demands for infrastructure services that the government is struggling to cope with. As a Middle Income Country in the Middle East and North Africa (MENA) region, it is estimated that Jordan should invest between US\$1.2 –US\$2.0 billion per year in infrastructure, especially in strategic infrastructure projects the government has identified (water, energy, railways, light rail transit system, etc...) in order to sustain economic growth prospects

around 5-6% per year and enhance its competitiveness. In other words, substantial fiscal resources should be allocated to ensure appropriate maintenance of the existing stock of infrastructure as well as to develop new infrastructure facilities. The infrastructure needs of the Jordanian economy and society are therefore estimated around 10 percent of the yearly GDP to infrastructure whereas the total capital expenditure of the government has not exceeded 7.5 percent of the GDP during the past decade. Clearly, Jordan's infrastructure needs (backlog and new) as estimated above are beyond what its fiscal space can accommodate, and increasing private investments is therefore crucial.

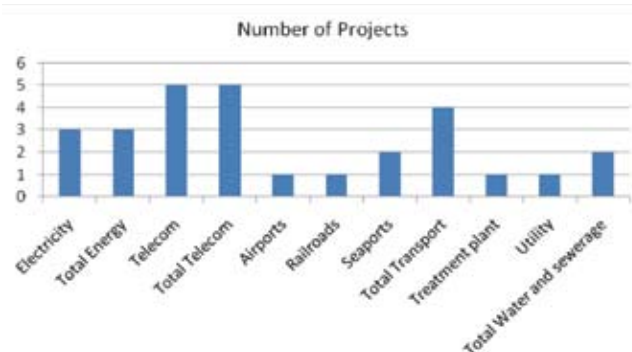
During the past two decades, Jordan has been successful in attracting private investments in infrastructure. Cumulative private investment commitments to infrastructure (figure 1) have been estimated at \$4.400 million since 1990. The telecommunications and the transportation sectors have attracted most of the private investments in infrastructure. For a total of 14 infrastructure PPP projects completed during this period, \$1,562 million went to transport projects; \$2,157 million were invested in telecommunications projects and \$ 524 million in energy projects.

Figure 1. Total Private Investment Commitments to Infrastructure in Jordan (million \$)



Source: PPI Database. 2009.

Figure 2. Number of infrastructure PPP projects in Jordan.



Source: PPI Database 2009.

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## Experience with Public-Private Partnerships

Partnerships with the private sector for the delivery of infrastructure services form a key component of the government development strategy since the early 1990s. This commitment to PPPs has been consistently reflected in the Government Program for Social and Economic Transformation (PSET).

### Policy and Legal Framework for Private Participation in Infrastructure in Jordan

The Jordanian PPP program was framed in the early 1990s and was further refined in the early 2000 with the enactment of the privatization law No 25 of 2000. Law No 25 is wide in its scope. It covers: (i) total and partial sales of public owned companies or assets; (ii) management contracts; (iii) license agreements issuance; and (iv) private participation in infrastructure projects such as BOT, BOOT etc. In addition to law No 25, the government strategy for private participation in infrastructure also strongly relied on sectoral legislations<sup>2</sup> enacted to implement sector reforms, including the implementation of market liberalization measures. The Executive Privatization Commission was created and established as the coordinating agency for PPP projects.

### Key Achievements of the Private Participation Program in Jordan

In collaboration with the World Bank Group (IBRD, IFC) and other donors (USAID, EU, Government of Japan and recently AFD), the Government of Jordan embarked on the implementation of PPP projects. Prior to the enactment of law No 25, the PPP program was implemented in an ad-hoc manner, with individual line ministries identifying potential projects and relying on donors' grants to bring these projects to the market. The enactment of law No 25 brought greater formalism in the process, but it is only in 2008 with the publication of the regulation No 80 that greater clarity and certainty will be brought to the PPP procedures and processes.

Besides privatizing existing state owned corporations, the government also launched an ambitious sector restructuring program that covered most infrastructure sectors. The aim of the sector restructuring program was to improve productive and allocative efficiency of infrastructure sectors. In this context, autonomous regulatory commissions were established in Telecommunications, Electricity, Gas, Water, Airport, etc. The main state owned corporations were privatized through sale of shares to strategic partners, and where possible infrastructure sectors were opened to

competition. In telecommunications, the Jordan Telecommunications Company (JTC) was privatized and the sector was opened to competition with the issuance of three mobile licenses. The water sector was unbundled with private participation introduced in some market segments such water treatment or wastewater treatment plants. A management contract was signed for the Amman Water Authority. The As-Samra Wastewater Treatment Plant was procured under a BOT scheme. The As-Samra project suffered from significant delays in its implementation, whereas the Amman Water management contract was not renewed at its termination.

Regarding the electricity sector, a successful industry restructuring program was implemented. In 1996, the Jordan Electricity Authority (JEA) was restructured into the National Electric Power Company (NEPCO) and unbundled in 1999 into three legally and financially independent operating companies: the Central Electricity Generation Company (CEGCO), the National Electric Power Company (NEPCO) for transmission and network operation, and electricity distribution companies. Distribution companies (CEDCO, IDECO and JEPCO) were fully or partially privatized. The Government sold its shares in the Central Electricity Generation Company (CEGCO). Two gas-fired independent power producers (IPPs) were contracted (Amman East, Al-Qatrania) using PPP schemes. In addition, the government successfully rolled back electricity subsidies, making Jordan one of the few countries in MENA with cost reflective electricity tariffs.

In the port sector, the government introduced private sector in the provision of port services at Aqaba sea port. In January 2004, a two year management contract was signed with APM Terminals to manage the container port. The transaction took less than six months to complete. Prior to private sector introduction in 2004, the waiting time for vessels anchoring at Aqaba was estimated around 8 days which dropped to few hours one year after. In the airport sector, the government successfully contracted the rehabilitation and expansion of the Queen Alia International Airport with the payment of a canon fee of \$680 million for 25 years BOT contract. The concession contract was signed in June 2007 and the developer took control of the facility in November 2007.

By 2006, the Aqaba Special Economic Zone Authority (ASEZA) has attracted investment commitments of over US\$8 billion through public-private partnerships. ASEZA and its development partner the Aqaba Development Corporation (ADC) have entered into the several partnerships including: (i) the APM contract to manage the container port at Aqaba; (ii) the development of the Aqaba International Industrial Estate (AIIE); and (iii) the development of the ALTS project - a US\$550-700 million project for the development of the Red Sea frontage on the Gulf of Aqaba.

<sup>2</sup> Such as the Water Authority Law No. 18 of 1988; the General Electricity Law No 64 of 2002; Transport Law No. 89 of 2003; The Public Transportation of Passengers Law No. 39 for the year 2006; The Civil Aviation Law No. 41 for the year 2007 establishes a Civil Aviation Regulatory Commission; and the Municipalities law No. 14 of 2007.



At the municipal level, few PPP transactions were concluded due principally to the fact that Jordan municipal councils have no financial autonomy. Although the Municipalities Law of 1955 assigns service delivery responsibility of 39 local services to municipal councils, the central government agencies and public sector companies continue to provide most of the public local services.

## Main Lessons and the Way Forward

As shown above, the development of these PPP projects have provided Jordan with a valuable experience that will be crucial in taking its PPP agenda forward. The Government has achieved some important successes with PPPs during the past decade, but there is still large room for improvement. As shown above, the infrastructure investment needs of Jordan remain huge and call for the acceleration of the mobilization of private investments. Jordan needs to further refine its PPP framework in order to deliver the world class infrastructure required by its economy. To successfully shift to knowledge-based economy and create the quality jobs required by a fast growing and educated labor force, the government will need to address following issues.

First, the effectiveness of the PPP program in Jordan has been impeded by coordination and decision making issues. Even successfully completed transactions took more time than planned because of deficiencies in the decision making chain, or poor coordination among stakeholders. Second, and because the PPP agenda was embedded with the privatization program, the government has not established an appropriate procedure for PPPs that would have helped to enhance the screening of potential projects to ensure their eligibility to PPP. With appropriate screening in place, few strategic projects such as the Disi-Amman water conveyor or the Amman – Zarqa light rail could have benefited from on-time mobilization of capital subsidies, thus making these projects bankable.

Third, the preparation of PPP projects suffered from weak project management as portfolio Ministries did not put in place full time project management teams, or when such teams were in place, they were not empowered to act on behalf of the Government. Four, the PPP agenda was carried out in an ad-hoc manner as the government did not sufficiently link its PPP program to its broader development, growth and competitiveness goals. While packed with significant risks, municipal PPP projects are of smaller size and can be more affordable for development by domestic investors as long as their risk profiles are mitigated properly. For instance, the Bank group through its municipal finance and OBAs (Output Based Aid) units could help in the structuring of municipal PPPs while ensuring that services remain afford-

able to the end users. Going forward, the government will need to address all of these issues, and elaborate mechanisms to expand its PPP program at the municipality level.

The government of Jordan recognizes the urgency to address these issues and has initiated the elaboration of a comprehensive PPP framework. It has published a PPP policy in 2008 and a "PPP Manual" in 2009. A draft PPP law based on global best practice is currently being finalized, which will provide Jordan with a world-class PPP framework. The new legislation will brand the PPP agenda separately from the privatization agenda.

In addition, a new institutional arrangement has been put in place to coordinate and monitor the development and implementation of medium to large size PPP-based projects. A dedicated department was recently created in the Ministry of Public Sector Reforms, endowed with a highly competent team directly reporting to the Minister and responsible for managing the preparation of PPP projects and ensure that they are timely and cost effectively implemented.

In the medium and longer term, the government will need to deepen the development of the financial and capital markets. Work can start to investigate in more depth the capital market issues and challenges and to start to build some basic building blocks. The World Bank Group stands ready to mobilize a wide range of its instruments to support the government efforts in this area. The grant needs to further strengthen its in-house capacity to manage PPP projects. Likewise, IFC through its lending and advisory services will continue to support the preparation and financing of PPP projects as in the case of Queen Alia Airport in 2007; or the Amman Ring road in preparation. The Bank and IFC could also work jointly with the government in the development financial intermediation institutions to deepen and widen the Jordanian capital markets.

## Conclusion

Jordan did very well, attracted strategic investors, accumulated experience and knowledge. It recognized the challenges to attract more FDI investors for its strategic infrastructure projects especially in this difficult crisis environment and moved forward with enhancing their legal/institutional framework for PPP.

# Jordan

## Partnership Program

The World Bank Group's support to Jordan is defined in the 2006–2010 Country Assistance Strategy. The strategy is aligned with the Government priorities, as expressed in particular in the 10-year National Agenda, of poverty alleviation and the creation of higher productivity jobs. The Bank's assistance revolves around four clusters:

- (i) Strengthening the investment environment and building human resources for value-added, skill-intensive and knowledge-based economy;**
- (ii) Supporting local development through increased access to services and economic opportunities;**
- (iii) Reforming social assistance and expanding inclusion; and**
- (iv) Restructuring public expenditures and supporting public sector reform.**

The strategy deploys several instruments to achieve its objectives: lending, analytical and advisory activities, equity and loan financing to the private sector, and training for institutional capacity. The new CAS covering fiscal years 2006 to 2010 was discussed by the Bank's Board of Directors on May 4th 2006.

The Jordan Portfolio consists of nine active projects, totaling US\$588.5 million, which are primarily focused on education, finance, social protection, transport and urban development.

The portfolio also consists of a number of grants from the Global Environment Facility (GEF) that fund activities as follows: "Conservation of Herbal/Medicinal Plants" (US\$5 million), "Integrated Ecosystems in the Rift Valley" (US\$6.15 million), "Promotion of a Wind Power Market" (US\$6 million), an "Energy Efficiency Investment Support Framework" (US\$1 million), and one grant from the Institutional Development Fund (IDF) on "Measuring the Impact of National Policies and Strategies on Gender" (US\$254,000)

**Amman Development Corridor (US\$71 million)** – The project aims at: (a) assisting Jordan's growth strategy by providing needed infrastructure to support Amman's role as a regional center for trade and services; and (b) helping ensure that Jordan's road assets are managed in a cost effective and sustainable manner.

**Regional and Local Development (US\$20 million)** – The objective of this project is to: (a) strengthen the intergovernmental finance system, (b) upgrade local financial management,

technical and administrative capacities at the local level, and (c) increase the coverage and quality of municipal service provision, with particular emphasis on under-served areas.

**Cultural Heritage, Tourism, and Urban Development (US\$56 million)** – The project builds on the experience and achievements of the Second Tourism Development Project and supports the National Tourism Strategy recommendations to develop regionally balanced cultural tourism through regeneration of historic urban neighborhoods and creation of cohesive and culturally rich urban attraction poles. The main focus of the proposed project reflects the current international experience in boosting local economies and improving the local quality of life through creating investment opportunities in what is defined as cultural and tourism industries.

**Amman East Power Guarantee (US\$45 million)** – The project's main objective is to meet Jordan's electricity needs in an economically and environmentally sustainable manner to contribute to economic growth and well-being of the population of Jordan. The purpose of the IBRD Guarantee is to enhance competition and therefore help reduce the Project's financing costs. The Project components consist of a 370-MW gas-fired combined-cycle power station to be developed, owned, and operated by a private-sector project company.

**Social Protection Enhancement Project (US\$4 million)** – The project aims to improve the management and operations of the cash social assistance programs and to improve the access to and quality of social care services.

**Employer-Driven Skills Development Project (US\$7.5 million)** – The project aims to enhance the internal and external efficiency of the E-TVET sector by making it more flexible and demand driven through the development of employer community participation in (i) sector policy formulation, (ii) institutional development and reform, and (iii) skill development program design and delivery.

**Amman Solid Waste Project (US\$25 million)** – The solid waste project objective is to enhance the quality, environmental and financial performances of municipal solid waste management (MSWM) in the Greater Amman Municipality. Systematically address municipal solid waste management issues and initiate steps towards integrated and efficient MSWM





while mitigating negative environmental effects at both the local and global level. The project could be a model for other municipalities in Jordan to enhance their MSWM systems.

**The Education Reform for the Knowledge Economy II (ERfKE II) Project (US\$60 million)** – This project is the follow up to ERfKE I which aimed at improving: (a) access to, and equity in, education through supporting pre-school education for disadvantaged children and expansion of the school construction to meet population growth; and (b) quality of education through the use of technology and professional development. ERfKE II will deepen the impact of the reforms and widen the scope of the the Government's Education Reform Program initiated in 2003. The objective of ERfKE II is to have students enrolled in all streams of pre-tertiary education in Jordan acquire skills necessary for participation in the knowledge economy.

**Jordan Recovery under Global Uncertainty Development Policy Loan (US\$300 million)** The Program supports the Government's efforts to address economic and social consequences of the current global financial crisis and economic slowdown while improving resilience of the Jordanian economy to adverse shocks. Specifically, it supports policy measures which: (i) reduce fiscal vulnerability by broadening the tax base and enhancing effectiveness of government expenditures; (ii) strengthen the financial sector by further enhancing regulation and supervision and improving access to finance; (iii) improve the business climate to encourage more private sector investment; and (iv) facilitate access of vulnerable groups to a more effective and fiscally sustainable social protection system.

# Iraq

## Zooming in on Energy Sector as Part of Reconstruction Drive

- by Yahia Khairi Said\*



Iraq and the World Bank recently (December 2009) signed a US\$5 million project under the Iraq Trust Fund to provide technical assistance in the development of an Integrated Energy Strategy. The Iraqi team led by the Chairman of the Prime Ministers Advisory Council, Thamir Ghadhban, has selected specialized consultants to help develop the multi-year strategy covering oil, gas and electricity. This is the latest in a number of World Bank activities in the Iraqi energy sector, which include major investment projects in power generation as well as various technical assistance activities.

Iraq holds the third largest oil reserve in the World and has the potential to be one of the leading exporters. Reconstruction after decades of wars, sanctions and mismanagement, depends predominantly on oil revenues. Rebuilding the shattered economy will demand fuel and power. Despite 'floating on a sea of oil', the basic energy needs of Iraqis are yet to be met.

Since 2003, Iraq struggled to restore pre-war levels of production, refining and generation. The new government inherited a decrepit infrastructure and outdated institutions. Subsidised pricing meant that fuel and electricity were essentially free. Energy infrastructure has been regularly sabotaged. Many workers and sector officials were assassinated, kidnapped or forced to flee during the quasi-civil war of 2006-2007.

For Iraq's energy sector, its place at the heart of the Iraqi economy is a mixed blessing. Oil and electricity were the leading recipients of both donor and Iraqi investments. The sector is also the stage of political contestation among competing interests and visions for Iraq's future. The way Iraq manages its oil will determine, to a large extent the nature of intergovernmental relations, and the divisions of roles between the state and the private sector. This explains the difficulty in reaching agreement on hydrocarbon legislation necessary to underpin the new institutional and regulatory structure for the sector.

Given this context, the achievements of the Iraqi energy sector over the past few years are remarkable. The gradual reduction of fuel subsidies since 2006 did not only remove an unsustainable fiscal burden but also eliminated smuggling and the severe fuel shortage. Power supply has stabilized, significantly reducing outages over the past three years.

Political deadlock over the passage of hydrocarbon legislation continued to hamper the recovery of the sector and consequently the entire economy. Working within this context the government of Iraq had to develop a forward looking contractual framework which maintains consistency with legacy legislation. The resulting compromise combined government ownership and control, with a risk-sharing service contract to attract investors.

The proposed contracts drew criticism from opposing directions including accusations of relinquished national sovereignty over the country's main assets were matched by those suggesting it did not go far enough to attract investors. Both the contracts and the bidding process were derided as complex, opaque and thus doomed to failure. These predictions seemed vindicated when the first round held in November led to the award of only one of the fields on offer. A consortium of BP and CNPC was the only one willing to accept the government's remuneration fee of US\$2 per additional barrel of oil produced from the Rumaila field. Detractors did not recognise at the time that Rumaila, with a current daily output of 1mbpd, accounts for over 40 percent of Iraq's oil industry. Rather than failure, the weeks following the inking of the first deal, saw other bidders return to the negotiation table to accept previously rejected offers.

The second round held in December improved on its predecessor with seven fields including two super giants auctioned off in an open, well organized and transparent process. The auction was the more remarkable given the difficult. It took place a day after a series of terrorist atrocities targeting government building, murdering scores of civilians.

Competition paid off for the Iraqi government which received lucrative offers with a combine peak production of 13.5 million barrels per day in the long run for an average remuneration fee per barrel of US\$2.5 above cost. The two rounds produced over US\$2 billion in signature bonuses. (Table 1 summarizes the results of the two bidding rounds.)

Many obstacles stand in the way of Iraq reaching these targets which could make it the world's number one oil producer in 15 years. There is still no new legislation. There is a risk that the next government may seek to renegotiate the contracts. The companies may delay commencing work until the political and

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\*Sr. Public Sector Specialist



security environment is more stable. They may fail to meet their obligations under the contracts. Iraq's dilapidated infrastructure may not recover in time to support the planned expansion.

These and other qualifications are valid but they should not obscure the profound economic and political changes that the contracts herald. Taken together the new contracts are as important as the formation of the Iraq Petroleum Company. Established in 1914, the IPC preceded the formation of the modern state of Iraq by seven years. Needless to say there was no oil legislation at the time. Having a law would create a more predictable and transparent environment operating environment. It would make investors more comfortable but as it became clear from bidding rounds the lack of law is not holding investors back.

Regardless of the outcome of the March elections it would be difficult for future Iraqi governments to justify renegotiating the contracts. Which oil minister can defend reopening a deal under which Iraq pays US\$1.15 (e.g. Lukoil-Petronas) for additional barrel of output before collecting 35 percent income taxes and the 25 percent share of the state-owned partner?

It is also unlikely that works will take years to start as some predict. CNPC already commenced operations on the Ahdab oil field a few months after they signed last year. Their exploration activities have already doubled estimates of the field's reserves. Dozens of oil company engineers are already deploying to Basra where most fields are located. Schlumberger, Haliburton and other oil services companies are building operational basis to service investors. Shell, BP, ENI and other IOC's have established permanent presence in Iraq even before contracts were signed. The contracts are structured in a way that encourages companies to ramp up production as quickly as possible. They have strict requirements for the immediate commencement of work. Iraq has learned from past experience with contractors unable or unwilling to exercise concessions. The IPC companies only exploited 1 percent of the concession area and the 1990's contracts were never realized.

## Geopolitics of Oil

Today, it is difficult to predict the consequences of these contracts to Iraq and the region. The current context is not a good guide. When Iraq reaches an output of over 10mbpd, Iraq's larger neighbors will no longer seem as dominant as they do today.

Many countries will start to look at Iraq as an investor rather than the other way around. Iraq's future leaders will inherit a country in a much stronger geopolitical position. In order to export new oil Iraq will almost certainly exceed the constraints of OPEC. With its low lifting costs, Iraq, like Saudi Arabia, is less likely to suffer from a drop in prices.

Asian markets may absorb the bulk of Iraq's extra output. Asia's interest is evident by the visible presence of regional NOC's in the bidding. The additional exports will have a profound impact on the global oil market and sadly, the climate.

The contracts are likely to strengthen the hand of the Central Government in the federalism debate. With such wealth at Baghdad's disposal it would be easier to argue that sub-national units stand to gain more from their share in Iraq's than what they can produce on their own. With so much oil under its control the central government may in turn be more amenable to allow regions more autonomy. This dynamic is already producing signs of accommodation between the centre and the Kurdistan Regional Government.

The experience of most petroleum dependent countries reveals, the management of Iraq's newly enhanced wealth is likely to pose a significant challenge. Will oil revenues fuel authoritarianism and aggression as they did in the past? Will they be hijacked by oligarchs? The choices seem limited. Positive examples of resource wealth management remain few. It is encouraging in this context that Iraq is undertaking concerted efforts to implement the Extractive Industries Transparency Initiative (EITI), having achieved Candidacy status early this month. The Ministry of Oil has championed the initiative viewing transparency as a key factor in the efficient and accountable development of the industry. The World Bank is helping Iraq implement EITI. Looking forward the Bank will also work with the government on the development of transparent and efficient revenue management mechanisms which could help address issues of fiscal stabilization, savings and transparent use of this wealth in the interest of the people of Iraq and, to a lesser extent, for the development and stability of the region.

# Harnessing Oil Wealth for Long-Term Economic Development in Iraq: The Role Of Fiscal Policy

- by Jorge Thompson Araujo\*

## Whither Iraq?

Iraq once stood out in the Middle East for the quality of its education and health systems as well as for its infrastructure development. Wars, international sanctions, and misguided economic policies have led to a marked deterioration in the standards of living of the Iraqi people. Iraq's infant mortality rate is close to those in the MENA region's poorest countries, Djibouti and Yemen. School enrollment has declined over the past decades as a result of low quality of and low returns to education. About 23 percent of the population live below the poverty line<sup>1</sup>, in a country which has the third largest crude oil reserves in the world<sup>2</sup>.

The good news is that, against all the odds, Iraq made considerable progress on the macroeconomic front over the past few years. Dollarization has been reversed, the Iraqi Dinar stabilized, and inflationary pressures have been contained: After spiking at 65 percent in 2006, inflation is projected at 6 percent by end-2009. Iraq successfully concluded two Stand-By Arrangements (SBA) with the IMF in December 2007 and 2008, triggering the release of the final tranche of the debt relief agreed with the Paris Club, for a total debt reduction of 80 percent in NPV terms. Furthermore, while relatively high, poverty in Iraq is "shallow": The poverty gap is only 4.5 percent. This means that a relatively small amount of resources—through income growth or transfer mechanisms—could lift most of the poor above the poverty line. As the security situation improves, so does the opportunity for Iraq to develop its private sector and use its immense oil wealth to the benefit of its population.

More recently, Iraq suffered another setback with the abrupt decline in oil prices in the second half of 2008. After holding fiscal surpluses in the order of 8.8 percent of GDP and 1.6 percent of GDP in 2007 and 2008 respectively, Iraq is projected to have an overall fiscal deficit of about 29.1 percent of GDP in 2009. A large financing gap has emerged for the 2009-2011 period that would require external financing.

Iraq's short-term fiscal woes reflect a deeper, longer-term economic problem: Iraq's oil dependence. Revenues from crude oil exports account for about two-thirds of the country's GDP and for almost all of its export and fiscal revenues. And yet the Iraqi

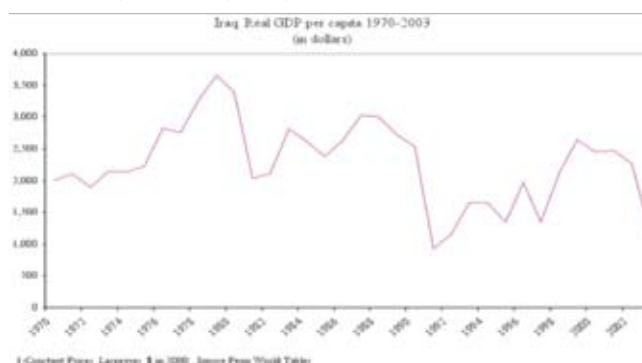
population has not felt the benefits of Iraq's huge "natural capital". Confronting this reality should lie at the core of the efforts of all stakeholders involved in supporting broad-based, inclusive economic development in Iraq. In the remainder of this article, we outline some of the key issues involved, in the hope that they can contribute to the debate on Iraq's economic development.

## Stabilizing an Unstable Economy

The recent behavior of Iraq's oil revenues sheds additional light on the fact that, historically, Iraq's economy has been unstable in a quite fundamental way. A quick examination of Iraq's growth patterns indicate a high degree of instability in real per capita GDP over time, which is common in economies subject both to oil dependence and military conflict (international and domestic).

Iraq's real per capita GDP – a broad measure of welfare – has followed a "boom-bust" process, with growth accelerations followed by growth collapses. Such collapses have been caused either by falling oil prices or periods of warfare and sanctions. Sustained income growth for the poor can only occur when such sharp "boom-bust" processes are eliminated or at least smoothed out.

Chart 1. Iraq: Real GDP per Capita, 1970-2003



Per capita GDP volatility in Iraq is not only due to oil price volatility, but also (and perhaps surprisingly) to oil output volatility. The physical volumes of Iraq's oil production and exports have been considerably volatile and below potential, reflecting both periods of deteriorating security and underinvestment in oil infrastructure. See chart 2 below.

\* Lead Economist (Iraq/Syria)

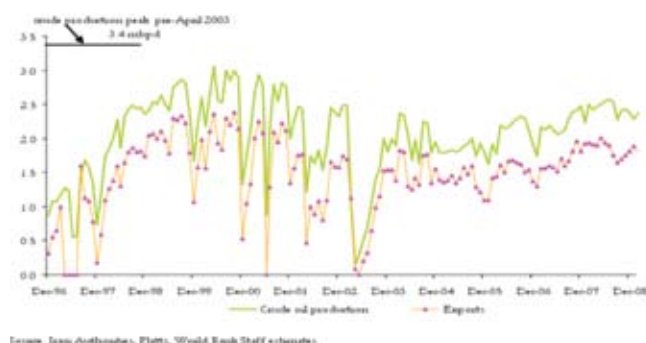
<sup>1</sup> Republic of Iraq (2010). *National Strategy for Poverty Reduction*, p.8.

<sup>2</sup> Iraq's proven oil reserves are currently estimated at 115 billion barrels.





Chart 2. Iraq: Oil Production and Export Volumes, December 1996 to April 2009 (mbpd)



On the production side, recent contracts signed between the Iraq Government and international oil companies are a promising new development. Iraq's oil production could potentially reach 7 mbpd in 2016-17 as a result of these contracts. Improved security would also reduce short-term disruption in oil production going forward.

Just as important, revenue flows from the State-dominated oil sector provide the bulk of savings and investments generated in the Iraqi economy (for example, in 2008, public investments accounted for 91.4 percent of total gross domestic investment in the Iraqi economy). Most of the resources domestically available to finance investment needs in Iraq come from the oil sector. Therefore, oil resources can potentially be managed to foster non-oil growth and protect Iraq's economy from the volatility of oil price and production.

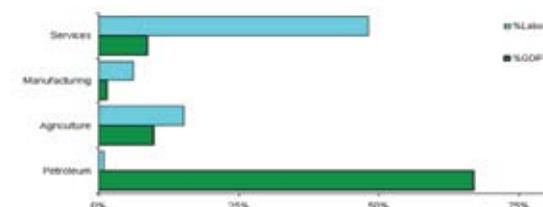
## From Crowding-Out To Crowding-In

It is a well-known fact that, in resource-rich economies, the oil sector can "crowd-out" the development of the non-oil economy, through a variety of mechanisms that together comprise the so-called "resource curse": reduced competitiveness in non-booming export sectors due to real exchange rate appreciation (also known as "Dutch Disease"); a bloated public sector, absorbing much of the qualified workforce through wages higher and job security greater than the private sector can offer, as well as acting as a social safety net of sorts; weak governance as well as bigger opportunities for corruption and waste. Many of these factors are present at varying degrees in the Iraqi case.

It is also a well-known fact the oil sector per se cannot guarantee sustainable livelihoods for the majority of the population. Oil exploration and production are not labor-intensive and by themselves cannot be relied on to generate incomes for the poor. This is illustrated in Chart 3 below, which shows that the oil sector dominates

GDP generation but has very little contribution to employment, which comes mostly from services and agriculture.

Chart 3. Iraq: Structure of Employment and GDP by Sector, 2004



Can "crowding-out" be turned into "crowding-in"? Fiscal policy can play a critical role in achieving this, by mitigating the adverse impact of the oil wealth on the rest of the economy.

## Is It Mainly Fiscal?

Fiscal policy in Iraq has three main characteristics aimed at providing some cushion against sudden fluctuations in oil revenues: (i) a conservative budget oil price to guide estimates of the budget envelope<sup>3</sup>; (ii) protection of expenditures from revenue volatility through development of borrowing instruments and through use of a Medium-Term Fiscal Framework (MTFF); and (iii) use of fiscal buffers (positive balances at the Development Fund for Iraq as well as Ministry of Finance balances in the Central Bank of Iraq) to reduce the expenditure impact of oil revenue volatility. But even these fiscal safeguards did not prevent Iraq's fiscal stance from deteriorating significantly with the decline in oil prices in the second half of 2008.

A recent IMF working paper<sup>4</sup> advocates an integrated approach to fiscal policy in oil-producing countries such as Iraq. Different short-term and longer-term fiscal policy tools can be combined to deal with a number of characteristics of oil revenue: volatility, uncertainty, exhaustibility, and origination from abroad (through exports). Table 1 below summarizes the main elements of such integrated approach to fiscal policy as well as where Iraq finds itself in each of them:

<sup>3</sup> "The use of conservative budget oil prices reflects prudent considerations and/or political economy factors. Such oil price assumptions are viewed as a prudent way to reduce the risk of a large deficit or fiscal adjustment in the event of an unanticipated decline in oil revenue. Governments have also sought to use low budget oil prices to contain spending pressures". In Ossowski, R., M. Villafuerte, P. Medas, and T. Thomas (2008). "Managing the Oil Revenue Boom: The Role of Fiscal Institutions". IMF Occasional Paper 260, p. 15.

<sup>4</sup> Medas, P. and D. Zakharova (2009). "A Primer on Fiscal Analysis in Oil-Producing Countries". IMF Working Paper WP/09/56.

# The Role Of Fiscal Policy

Table 1. An Integrated Approach to Fiscal Policy

Fiscal Policy Objectives	Available Policy Choices	Where Iraq Stands
Accurately assess the <b>fiscal stance</b>	Adopt non-oil indicators, such as the Non-Oil Primary Balance (NOPB)	NOPB calculated as part of the fiscal framework agreed with the IMF, but not actively used by the Government as a tool to assess the fiscal stance
Reduce impact of <b>oil revenue volatility</b>	De-link government expenditures from short-term oil revenue fluctuations through, for example, Special Fiscal Institutions such as oil stabilization funds.  Safeguard expenditure quality through stronger PFM mechanisms	The Development Fund for Iraq (DFI) is not an oil stabilization fund, but the practice of maintaining positive balances ("buffers") act as a stabilizing factor to a limited extent.  The Iraqi Government is implementing a PFM Reform Action Plan, with support from the Bank and the IMF.
Adopt a long-term perspective to <b>fiscal sustainability</b>	Apply long-term sustainability benchmarks (Permanent Oil Income, Van Der Ploeg/Venables approach)	Not currently in use in Iraq.
Manage <b>uncertainty</b>	Adopt a Medium-Term Fiscal Framework (MTFF)	MTFF adopted, but the links between policy priorities and medium-term budgeting are still weak.

Table 1 shows that Iraq has made significant progress in some aspects of an integrated approach to fiscal policy: (i) the setting up of the Development Fund for Iraq, which is also a critical tool for safeguarding the integrity of the country's oil resources<sup>5</sup>; (ii) the ongoing PFM reform; and (iii) the adoption of a MTFF.

However, going forward, Iraq will need to address the oil revenue volatility and long-term fiscal sustainability issues more systematically:

To help reduce the costs of volatility, the Iraqi Government may wish to explore the possibility of adopting Special Fiscal Institutions – such as an explicit fiscal rule or even an oil stabilization fund.

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Special Fiscal Institutions – such as an explicit fiscal rule or even an oil stabilization fund.

- To help ensure long-term fiscal sustainability and counterbalance the effects of "Dutch Disease", the Iraqi Government may wish to consider the adoption of a long-term sustainability benchmark that is appropriate for Iraq's conditions<sup>6</sup>.

These policy choices are not trivial, and need to be grounded on solid analytical work. It is critical that work in these areas is initiated without delay: Oil prices are rising anew, and Iraq needs to be better prepared in the future to cope with volatility, and avoid falling into a new fiscal crisis.

## Towards A Virtuous Cycle Of Prosperity And Peace

Ultimately, sustained prosperity and poverty reduction in a country such as Iraq can only be achieved through medium-to-long-term economic diversification. Given the country's abundance of land, non-oil natural resources, and labor, economic diversification is not a far-fetched goal for Iraq. While oil wealth is not the only development tool at Iraq's disposal – specific measures to improve the business environment and strengthen the private sector are critical – it can be harnessed to help accomplish this goal. The international experience shows a number of alternative mechanisms available to manage oil wealth from a long-term perspective, some of which could be adapted to Iraq, as discussed in the previous section.

Stabilizing Iraq's unstable economy and using the country's oil wealth to crowd in private sector-led growth in the non-oil sector would not, in and of themselves, guarantee peace and security. However, success in the economic front could go a long way towards achieving a virtuous cycle of sustained peace and prosperity in Iraq.

<sup>5</sup> It is critical to establish a sound successor regime for the DFI, as it will expire by end-2010. This discussion, however, is beyond the scope of this note.

<sup>6</sup> Different such benchmarks exist, including: (i) the very conservative "bird-in-hand" approach, where only the yield from net accumulated financial assets is spent; (ii) the permanent oil income model (POIM), where the yield on the Government net wealth (oil plus financial is spent), ensuring a constant share for each generation; and the (iii) Van der Ploeg/Venables approach, where current consumption is initially lower than under the POIM, with the difference used to repay debt (if applicable) and finance public investments, particularly in the non-oil economy, allowing for consumption levels higher than under the POIM in the outer years. See also Van der Ploeg, F. and A.J. Venables (2008). "Harnessing Windfall Revenues in Developing Countries: Sovereign Wealth Funds and Optimal Trade-Offs Between Citizen Dividends, Public Infrastructure, and Debt Reduction." CEPR Discussion Paper 6954.



**T**he Joint World Bank-IFC **Interim Strategy Note** for 2009–11 benefited from a stocktaking of the Bank Group's engagement with Iraq to date as well as extensive consultations with Government of Iraq, the donor community, and other stakeholders, including representatives from private sector and civil society organizations. Activities under this ISN fall under one or more of three thematic areas of engagement:

- (i) Continuing to support ongoing reconstruction and socio-economic recovery;**
- (ii) Improving governance and the management of public resources, including human, natural and financial; and**
- (iii) Supporting policies and institutions that promote broad-based, private-sector-led growth.**

#### **The International Reconstruction Fund Facility for Iraq (IRFFI)**

The International Reconstruction Fund Facility for Iraq aims to help donors channel resources and coordinate support for reconstruction and development in Iraq through two trust funds: The World Bank Iraq Trust Fund (ITF) and the UNDF Iraq Trust Fund. The ITF finances reconstruction and capacity building projects, within the framework of Iraq's National Development Strategy and International Compact with Iraq. The donors to the ITF agreed to extend the termination date of the ITF to December 31, 2013, effective on May 26, 2009.

#### **Portfolio**

The Iraq portfolio includes 21 active projects. Out of these, 16 are financed by the ITF and 5 are financed by the International Development Association (IDA) and are concentrated in sectors such as water, road rehabilitation, health, energy, education, financial management, and social protection.

#### **Iraq Trust Fund (ITF)**

##### **School Construction & Rehabilitation Project (US\$60 million) –**

Aims to alleviate hazards and overcrowding in schools through major rehabilitation of 133 existing schools and construction of 52 new schools, benefiting over 50,000 families with school age children (about 95,000 students).

**Second Capacity Building Project (US\$7 million) –** Builds on the First Capacity Building Project to help authorities introduce medium-term policies, focusing on economic and public sector management, and social safety nets.

**Health Rehabilitation Project (US\$25 million) –** Aims to help rehabilitate emergency services in 9 hospitals and provide 12 hospitals with basic medical and laboratory equipment and essential drugs.

##### **First Private Sector Development Project (US\$65 million) –**

Aims to help strengthen the private/financial sectors by: (i) installing a national high capacity telecommunications network; (ii) linking the Central Bank to commercial banks to improve the payment system; and (iii) addressing selected priorities in institution building.

##### **Baghdad Water Supply and Sanitation Project (US\$65 million) –**

Aims to help restore basic water supply and sanitation services for Baghdad through rehabilitating existing networks and facilities, and to provide institutional support.

##### **Water Supply, Sanitation and Urban Development Project (US\$110 million) –**

Aims to upgrade and rehabilitate water supply and sanitation in 9 cities, and conduct urban reconstruction in the poorest areas of 3 cities, benefiting over 2 million people. The project also provides training and technical support.

##### **Community Infrastructure Rehabilitation Project (Additional Financing) (US\$26 million) –**

Aims to undertake labor-intensive civil works to restore rural water infrastructure, create local employment, enhance community participation, and increase institutional capacity.

##### **Emergency Disabilities Project (US\$16.8 million) –**

Aims to improve rehabilitation and prosthetic services to the disabled to reduce the burden of physical disability by upgrading the infrastructure of selected rehabilitation or prosthetic centers and the skills of the staff to provide services.

##### **Social Protection Project (US\$8 million) –**

Aims to strengthen the capacity of the Iraqi agencies to develop, manage and monitor pension and social safety net reform programs.

##### **Household Survey & Policies Project (US\$5.1 million grant / US\$3.6 million TA) –**

Finances a comprehensive household income and expenditure survey and data analysis to enable the authorities to establish a poverty line, target social assistance to the neediest, and make informed policy decisions.

## Partnership Program

**Marshlands School Construction Project (US\$6 million)** – Provides additional financing for the Emergency Schools Construction and Rehabilitation Project to finance new school construction of 33 small schools in the Southern Marshlands area of Iraq, benefiting 6,000 to 8,000 children.

**Environmental Management Project (US\$5 million)** – Aims to strengthen key functions of the Ministry of Environment to enable it to undertake policy analysis, formulate laws and regulations, monitor environmental quality, promote environmental awareness, and conduct technical studies.

**Electricity Reconstruction Project (US\$6 million)** – Aims to upgrade technical skills in operations and maintenance of power utilities at the Ministry of Electricity (MOE), in conjunction with the US\$124 million IDA credit that aims to restore the base load generation capacity of the Hartha power station.

**Regional Emergency Health Response (US\$8.7 million)** – Aims to assist the Kurdistan Regional Government to establish rapid, coordinated and effective response services to health emergencies.

**Banking Sector Reform Project (US\$10 million)** – Aims to support Iraq's implementation of its Banking Reform Strategy and Action Plan, focusing on the institutional, operational and financial restructuring of the 2 state-owned commercial banks, and strengthening of the regulatory and supervisory functions of the Central Bank of Iraq.

**Public Financial Management Reform (US\$16 million Grant / US\$2 million TA)** (US\$16 million Grant / US\$2 million TA) The project supports the ongoing public financial management (PFM) reform process, including strengthening budget management, improving public financial reporting and control, strengthening public procurement, and establishing the tools, systems and institutions required for effective PFM capacity development.

### International Development Association (IDA)

**Third Emergency Education Project (US\$100 million)** – Aims to assist the Ministry of Education to reduce school overcrowding and strengthen its capacity to improve quality of teaching and curricula.

**Emergency Road Rehabilitation Project (US\$135 million)** – Finances the rehabilitation of highways and village access roads in Central, Southern and KRG Governorates of Iraq. 3 floating bridges will also be replaced with permanent structures.

**Dokan and Derbandikhan Emergency Hydropower Project (US\$40 million)** – Aims to upgrade electricity supply primarily in the Kurdistan region, but also nationally through its connection to the national grid. About 490,000 households will benefit directly, as well as a number of industries.

**Emergency Electricity Project (US\$124 million, with the companion ITF grant of US\$6 million)** – Aims to restore the base load generating capacity of the Hartha power plant and build capacity at the Ministry of Electricity.

**Emergency Water Supply Project (US\$109.5 million)** – Aims to improve the quantity and quality of water in 4 high priority governorates through the rehabilitation and upgrade of the water supply and distribution infrastructure, and engage the government to develop a sustainable water sector policy.