# IRAQ ECONOMIC MONITOR

## The Slippery Road to Economic Recovery

Fall 2021

WORLD BANK GROUP
Middle East and North Africa Region

# Iraq Economic Monitor

## The Slippery Road to Economic Recovery

### With a Special Focus on
Overcoming Water Scarcity and Climate Change Impacts

Fall 2021


Middle East and North Africa Region

1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org



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# ACRONYMS

| | |
|---|---|
| Bcf | Billion cubic feet |
| BOP | Balance of payments |
| BWA | Baghdad Water Authority |
| CAB | Current account balance |
| CBI | Central Bank of Iraq |
| COSIT | Central Organization for Statistics and Information Technology |
| COVID-19 | Coronavirus Disease 2019 |
| CSSP | Common Seawater Supply Project |
| DRM | Domestic revenue mobilization |
| Ekyc | Electronic know your customer |
| ER | Exchange rate |
| FAO | Food and Agriculture Organization |
| FDI | Foreign Direct Investment |
| FINDEX | Financial Incusion Database |
| GDP | Gross Domestic Product |
| GoI | Government of Iraq |
| GW | GigaWatts |
| HFPS | High Frequnecy Phone Survey |
| H1 | First Half of the Year |
| IDP | Internally Displaced Persons |
| IEA | International Energy Agency |
| IEM | Iraq Economic Monitor |
| IFAD | International Fund for Agriculture Development |
| IHFPS | Iraq High Frequency Phone Survey |
| IMF | International Monetary Fund |
| IOM | International Organization for Migration |
| IQD | Iraqi Dinar |
| KRG | Kurdistan Regional Government |
| LFPR | Labor force participation rate |
| LHS | Left hand side |
| M2 | Broad Money |
| mbpd | Million barrel per day |
| mbpm | Million barrels per month |
| MENA | Middle East and North Africa |
| MoE | Ministry of Electricity |
| MoF | Ministry of Finance (Iraq) |
| MoO | Ministry of Oil (Iraq) |
| MoWR | Ministry of Water Resources |
| MPHMPW | Ministry of Public Housing, Municipalities, and Public Works |
| MT | Metric Ton |
| MW | Megawatt |
| NPLs | Non-Performing Loans |
| O&M | Operation and Maintenance |
| OPEC+ | Organization of Petroleum Exporting Countries (plus other non-OPEC partner countries) |
| PDS | Public Distribution System |
| pp | Percentage points |
| RHS | Right hand side |
| SMEs | Small and Medium-Sized Enterprises |
| SOBs | State-owned banks |
| SWIFT | Rapid Welfare Monitoring Survey |
| SWLRI | Strategy for Water and Land Resources of Iraq or Strategy |
| Tcf | Trillion cubic feet |
| UNHCR | United Nations High Commissioner for Refugees |

| | |
|---|---|
| UMIC | Upper middle-income countries |
| UNOCHA | United Nations Office for the Coordination of Humanitarian Affairs |
| US | United States |
| WB(G) | World Bank (Group) |
| WDI | World Development Indicators |
| WSS | Water Supply and Sanitation |
| WFP | World Food Program |
| WRM | Water Resource Management |
| y/y | Year-on-year (growth) |

# ACKNOWLEDGMENTS

The Iraq Economic Monitor provides an update on key economic developments and policies over the previous six months and presents findings from recent World Bank work on Iraq, placing them in a longer-term and global context and assessing the implications of these developments and other changes in policy regarding the outlook for Iraq. Its coverage ranges from the macro-economy to business environment and private sector development. It is intended for a wide audience, including policy makers, business leaders, financial market participants, and the community of analysts and professionals engaged in Iraq.

The Iraq Economic Monitor is a product of the Middle East and North Africa (MENA) unit in the Macroeconomics, Trade & Investment (MTI) Global Practice of the World Bank Group. The report was written by Wael Mansour (Senior Economist, MTI), Majid Kazemi (Economist, MTI), and Ashwaq Maseeh (Economist, MTI).

The report was prepared under the direction of Saroj Kumar Jha (Country Director, MNC02), Eric Le Borgne (Practice Manager, MTI), Carmen Nonay (Practice Manager, SMNWA), Ramzi Neman (Head of Baghdad Office, MNCO2), and Christos Kostopoulos (Lead Economist, MTI). The first chapter includes inputs from Syed Mehdi Hassan (Senior Financial Sector Specialist). The Special Focus Chapter was prepared by a team consisting of Amal Talbi (Lead Water Resources Management Specialist), Amjad Muhammad Khan (Economist), Edoardo Borgomeo (Water Resources Management Specialist), Anders Jagerskog (Senior Water Resources Management Specialist), and contribution from Nafie Mofid (Senior Water Supply and Sanitation Specialist), Wilfried Hudertmark (Senior Irrigation Specialist), Esha Dilip Zaveri (Water Economist), Nagaraja Rao Harshadeep (Lead Environment Specialist), and Iyad Rammal (Senior Infrastructure Specialist). Special thanks to Muna Salim (Senior Program Assistant, MTI) for her administrative support.

The findings, interpretations, and conclusions expressed in this Monitor are those of World Bank staff and do not necessarily reflect the views of the Executive Board of the World Bank or the governments they represent. For information about the World Bank and its activities in Iraq, please visit www.worldbank.org/en/country/iraq (English) or www.worldbank.org/ar/country/iraq (Arabic). For questions and comments on the content of this publication, please contact Wael Mansour (wmansour@worldbank.org), Majid Kazemi (mkazemi@worldbank.org), Ashwaq Maseeh (amaseeh@worldbank.org), or Eric Le Borgne (eleborgne@worldbank.org).

The data cut-off date for this report is October 15, 2021.

# EXECUTIVE SUMMARY

## Recent Economic and Policy Developments

**Iraq's economy is slowly recovering from the double COVID-19 pandemic and oil shocks of 2020.** Global demand has boosted oil prices, OPEC+ eased oil production limits to the benefit of Iraq, and COVID-19 restrictions were gradually lifted, leading to some recovery of economic activity especially in the services sectors. The recovery was aided by government actions that continued to push forward the White Paper reforms and managed to provide a small stimulus through public transfers and schemes aimed at increasing credit to businesses. This led real gross domestic product (GDP) to grow by 0.9 percent year-on-year (y/y) in the first half of 2021 (H1-21), after a 16 percent contraction in 2020. However, the recovery was held back by deteriorating public service delivery, including widespread electricity cuts, as well as intensifying climate change shocks such as historic low rainfalls (second driest year in 40 years) which led to water shortages. These developments impacted agriculture and the industrial sectors. At the same time, healthcare services deteriorated amidst growing cases of the COVID-19 Delta variant.

**More favorable oil market conditions have pushed Iraq's fiscal balance into a surplus, although structural challenges persist.** With Iraq's oil prices in Jan-Jul 2021 trending at 81 percent above the same period a year earlier, oil revenues have increased by 52 percent y/y while expenditures rose by 14 percent y/y. This led to a fiscal account surplus of 2.2 percent of GDP and a decline in the public debt-to-GDP ratio. However, the budget remains large, beset by rigid spending on wages and transfers, reducing the ability of the Government of Iraq (GoI) to undertake fiscal adjustments or further stimulate the economy, and produces poor quality services. Large arrears—especially those related to electricity, public wages, and pensions—intensify pressures on Iraq's public finances.

**Higher oil exports and global investment flows have improved Iraq's external account and bolstered international reserves**. Oil exports revenues increase of 27 percent y/y in H1-21 together with imports decline of 39 percent y/y, following the private sector adjustment to the currency depreciation, pushed the current account balance to a surplus of 7 percent of GDP. This surplus combined with improved external financing including a 27 percent rise in FDI, namely, in energy sector, has boosted the central bank's useable reserves from US$48 billion in 2020 to almost US$55 billion in H1-21. These reserves cover 15 months of current year's imports.

**Iraq's economic prospects have improved with the recovery in global oil markets, but the spread of new COVID-19 variants and climate change challenges pose significant headwinds.** Oil GDP, the main driver of growth in the medium

term, is expected to grow in line with the gradual phase-out of OPEC+ production quotas. In the absence of an accelerated process of reforms, average annual non-oil GDP growth is forecasted to remain under 3 percent in 2021–23 due to the impact of the COVID-19 Delta variant on the economy and water and electricity shortages that impact agriculture and industries. More favorable oil market conditions are projected to maintain the fiscal balance in surplus in 2021–23. Higher oil exports are also expected to drive a current account surplus over the outlook years, thereby reversing pressures on foreign exchange reserves. The recent surge in poverty is expected to gradually reverse following the economic recovery and improved vaccination rollout.

**However, Iraq's economic outlook is mired by significant risks that could materialize in the medium-term.** Downside risks include: a potential decline in oil prices, a worsening COVID-19 crisis due to the spread of new variants, a deterioration in security conditions, the intensification of climate change shocks and additional macroeconomic volatility. Positive oil price shocks would improve economic indicators in the short term but, as with previous years' experience, could come at the risk of weakening an already tepid drive for reforms. The recent recovery is especially fraught by major fiscal risks. These risks emerge from growing budget rigidities, slow clearance of arrears, a large exposure of state-owned banks and the central bank to the sovereign, and public investment management constraints that have impacted public service delivery. On the upside, progress on regional economic integration together with an improved security environment could provide new momentum for growth and diversification. The breadth and depth of these challenges underscore the need for an accelerated implementation of structural reforms by the new government.

## Overcoming Water Scarcity and Climate Change Impacts

**Increasing water scarcity and climate change impacts call for significant water sector reforms to capture water-related opportunities and manage water-related risks (droughts, and floods).** In 2015, the Government of Iraq approved its national strategy to develop water and land resources for the next 20 years. The Strategy, known as SWLRI (Strategy for Water and Land Resources of Iraq or Strategy), alerted that in a business-as-usual scenario, by 2016, the country would not have the necessary water quantity or quality and called for significant reforms to avert this alarming trajectory. By 2030, Iraq is projected to face severe water scarcity, with less than 1,000 cubic meters per person per year available. Iraq's water sector faces many challenges, among which: (i) increasing water demand and competition among sectors, (ii) deteriorating water quality, (iii) aging infrastructure operating at sub-optimal levels, and (iv) reduced water availability due to climate change. The SWLRI had envisioned spending US$180 billion in the sector over this period, but the financing did not materialize as expected due to the oil price decline and the impacts of Islamic State insurgency. The current water sector resilience (storage level and conveyance infrastructure) is no longer sufficient to face the inevitable impacts of climate change. The water sector needs to improve water productivity, efficiency, and financial sustainability in the medium to long term and control the water demand to cope with water scarcity and the climate change impacts.

**Iraq's water sector relies on a highly centralized institutional architecture, which creates coordination challenges in water resource management and service delivery across the country.** A lack of consensus among governorates and across sectors has given rise to a "tragedy of the commons", epitomized by the deterioration of downstream water quality as upstream users pollute water resources needed downstream. Central control of water supply and sanitation service provision also results in limited communication with local-level authorities and leaves little flexibility to respond to ever-changing local contexts and situations. Although central water resource planning is still needed due to the complex hydrology, local-level involvement in management and allocation of water resources is necessary for incorporating local knowledge and varying local priorities.

**Financing constraints are due to limited revenues from customers, and also arise from the**

**institutional architecture of the water sector, and present challenges to economic development in Iraq.** Centrally determined budgets are volatile in the face of macroeconomic fluctuations and resource constraints arising from political instability. Iraq is especially vulnerable to such volatility due to the high exposure to oil price fluctuations and the strain from the expensive fight against and reconstruction needed after the Islamic State insurgency. Successful execution of capital investment projects requires financial stability, especially in the water sector where many of these projects require multiple years to finish. Central budgets also place disproportionate emphasis on allocations for capital expenditures and salaries but less on needed operations and maintenance expenditures, leading to faster deterioration of existing infrastructure. Additionally, the misalignment of information and incentives also creates challenges for central planning and administration of sub-national of water supply and sanitation service delivery, leading to tariffs that may not reflect local water delivery costs. Current revenues from customers are a fraction of the costs to operate and maintain water supply and sanitation services.

**Without action, these constraints in the water sector can lead to large losses across multiple sectors of the economy (GDP, labor, and crop prices) and impact more the vulnerable people.** A 20 percent reduction in water supply with changes in crop yields that will accompany climate change could reduce real GDP in Iraq by up to 4 percent, or US$6.6 billion, compared to 2016 levels; and a drop by 11.8 percent of the demand for unskilled labor in agricultural by 5.4 percent of the demand for nonagricultural activities. Output reduction would cause consumer price index for crops to increase by 13.9 percent and would also increase net imports for food items to over US$960 million. In the Middle East, where many households are net buyers of grains and food products, any increases in crop consumer prices could increase poverty. Low-income households are particularly vulnerable because they tend to spend a high share of their incomes on staple foods (Martin and Ivanic 2016 cited in World Bank, 2020). Similar inequalities arise when considering reductions in agricultural employment, which will disproportionately hurt the poor.

Going forward, this report identifies three reform areas to improve resilience to water scarcity and climate change impacts:

- **Reform Area 1: Water efficiency, productivity, and demand management policies**
  Increasing water efficiency and productivity are essential, but only if paired with water demand management policies[1] to cap the overall water use. In addition, updating dams' operation will improve drought and flood management. Finally, water reallocation[2] within and across governorates provides an additional tool for policymakers to better cope with water scarcity and climate change.
- **Reform Area 2: Institutional solutions**
  Iraq's water sector has the opportunity to improve water resources management through multiple avenues of institutional reform. Stakeholder engagement could build consensus across water users in multiple governorates and sectors to harness the benefits of an inclusive decision-making process. Water service providers could also benefit from increased local-level fiscal and managerial autonomy. Improving cost recovery at the local level generates revenue for sustaining service delivery and in the medium to long term ensure financial sustainability, which would improve the prospect for private sector participation in the water sector.
- **Reform Area 3: Regional solutions**
  About 60 percent of Iraq's freshwater resources originates outside its borders, making dialogue with its neighbors important to ensure water security. While cooperation over transboundary waters is often thought of as a zero sum

[1] The expression "water demand management policies" in this report refers to policies that affect the consumers use of water: water pricing, quotas, shifting of crops, water accounting and monitoring, use of transformative technology to support water governance monitoring and enforcement, and strategic communication.

[2] Water reallocation is here defined as a change to the volume, timing, location, or quality of water delivered under formal or informal water rights

exercise, in practice there are many cooperative solutions that Iraq and neighboring countries can undertake to their mutual advantage. These regional solutions include, for example, increased information sharing between the countries, both on quantity as well as on water quality; more coordinated management and operation of water infrastructure to mitigate the impacts of droughts, floods, and climate change, and help improve the management of evaporative losses.

# المرصد الاقتصادي للعراق

## الطريق الزلق للإنتعاش الإقتصادي

## مع عدد خاص حول التغلب على ندرة المياه وتأثيرات تغير المناخ

# الملخص التنفيذي

### التطوّرات الاقتصادية والسياسية الأخيرة

**يتعافى اقتصاد العراق تدريجياً من جائحة COVID-19 ومن صدمات اختلال اسعار النفط لعام 2020.** فقد أدّى الطلب العالمي إلى رفع أسعار النفط، وخفّفت منظمة أوبك + حدود إنتاج النفط المتاح للعراق، وتم رفع قيود COVID-19الصحية والاجتماعية الخاصة بجائحة كورونا تدريجيًا، مما أدى إلى بعضا من التعافي للنشاط الاقتصادي وخاصة في قطاعات الخدمات. كماتعزّز الانتعاش نتيجة بعض الإجراءات الحكومية التي استمرت في دفع إصلاحات الورقة البيضاء مما مكنّ من توفير محفز بسيط من خلال التحويلات العامة والبرامج التي تهدف إلى زيادة القروض الممنوحة للشركات. أدى ذلك إلى نمو الناتج المحلي الإجمالي الحقيقي بنسبة 0.9 في المائة على أساس سنوي في النصف الأول من عام 2021، وذلك بعد انكماش وصل الى 16 في المائة في عام 2020. بالرغم من ذلك، فقد تباطأ الانتعاش مرة أخرى بفعل تدهور في تقديم الخدمات العامة، بما في ذلك انقطاع الكهرباء على نطاق واسع، فضلا عن زيادة في التأثيرات المناخية التي ادت الى صدمات تجلتّ، على سبيل المثال، في انخفاضٍ تاريخي لمعدلات هطول الأمطار (ثاني أكبر جفاف في 40 عامًا) مما أدى إلى شحّ في المياه. وقد أثّرت هذه التطورات على الزراعة والقطاعات الصناعية. في الوقت نفسه، ادى الارتفاع في معدلات الاصابة بالمتغير دلتا لفيروس كورونا الى تدن في مستوى تقديم خدمات الرعاية الصحية.

**دفعت الظروف الأكثر ايجابية في سوق النفط إلى فائض في الميزان المالي العراقي، على الرغم من استمرار التحديات الهيكلية.** ومع اتجاه أسعار النفط في العراق خلال الفترة الممتدة من يناير إلى يوليو 2021 إلى تسجيل ارتفاعٍ نسبتُه 81 في المائة مقارنةً بالفترة نفسها من العام السابق، كما زادت العائدات النفطية بنسبة 52 في المائة على أساس سنوي بينما زادت النفقات بنسبة 14 في المائة. مما أدى إلى فائض في الحساب المالي بنسبة 2.2٪ من إجمالي الناتج المحلي وانخفاض نسبة الدين العام إلى إجمالي الناتج المحلي. وبالرغم من هذا، يبقى حجم الموازنة كبيرا بسبب الإنفاق المرتكز على تسديد الرواتب والتحويلات، مما يقلل من قدرة الحكومة العراقية على إجراء تعديلات مالية أو تحفيز الاقتصاد بشكل أكبر، وينعكس سلبا على نوعية الخدمات العامة المقدمة. إن المتأخرات الكبيرة في تسديد المستحقات- خاصة تلك المتعلقة بالكهرباء والمصارفات العامة والرواتب - تزيد من الضغوط على المالية العامة للعراق.

**أدى ارتفاع صادرات النفط وتدفقات الاستثمار العالمية إلى تحسين الحساب الخارجي للعراق ودعم الاحتياطيات الدولية.** ارتفعت إيرادات صادرات النفط بنسبة 27 في المائة على أساس سنوي في النصف الأول من العام الجاري وترافق ذلك مع انخفاض الواردات بنسبة 39 في المائة، بعد تكيّف القطاع الخاص مع خفض قيمة الدينار العراقي ، مما انتج فائضا في ميزان الحساب الجاري بنسبة 7 في المائة من إجمالي الناتج المحلي. وقد أدى هذا الفائض اضافة الى تحسّن التمويل الخارجي وزيادة الاستثمار الأجنبي المباشر بنسبة 27 في المائة، وتحديداً في قطاع الطاقة، إلى تعزيز الاحتياطيات القابلة للاستخدام لدى البنك المركزي العراقي وذلك بزيادة من 48 مليار دولار أمريكي في عام 2020 إلى ما يقرب من 55 مليار دولار أمريكي في النصف الأول من عام 2121. وتغطّي هذه الاحتياطيات 15 شهرًا من واردات العام الحالي.

**تحسّنت الآفاق الاقتصادية للعراق مع الانتعاش في أسواق النفط العالمية، لكن انتشار متغيرات كورونا الجديدة وتحديات تغير المناخ تشكّل رياحًا معاكسة.** من المتوقع أن ينمو الناتج المحلي الإجمالي النفطي، وهو المحرّك الرئيسي للنمو على المدى المتوسط ، بما يتماشى مع الإلغاء التدريجي لحصص إنتاج أوبك +. غير انه وفي غياب عملية إصلاحات متسارعة، يبقى من المتوقع أن يظل متوسط نمو إجمالي الناتج المحلي غير

النفطي السنوي أقل من 3٪ في 2021-2023 بسبب تأثير متغير دلتا على الاقتصاد ونقص المياه والكهرباء الذي يؤثر على قطاع الزراعة والصناعات. ومن المتوقع أن تحافظ الظروف الأكثر ملاءمة في سوق النفط على الفائض في الميزان المالي في 2021-2023. كما يبدو من المتوقع أيضًا أن يؤدي ارتفاع صادرات النفط إلى تحقيق فائض في الحساب الجاري على مدى سنوات التوقعات، وبالتالي عكس الضغوط على احتياطيات النقد الأجنبي. كما من المتوقع أن تنعكس الزيادة الأخيرة في خفض معدلات الفقر تدريجياً بعد الانتعاش الاقتصادي وتعميم حملات التلقيح ضد فيروس كورونا.

**وبالرغم من ذلك، تبقى التوقعات الاقتصادية للعراق محاطة بمخاطر كبيرة يمكن أن تتحقق على المدى المتوسط.** ففي الجانب السلبي، تشمل هذه المخاطر انخفاض محتمل في أسعار النفط، وتفاقم أزمة جائحة كورونا بسبب انتشار المتغيرات الجديدة، وتدهور الظروف الأمنية، وتكثيف صدمات تغير المناخ وتقلبات الاقتصاد الكلي الإضافية. سينعكس إرتفاع أسعار النفط الى تحسنّ المؤشرات الاقتصادية على المدى القصير، غير ان الحال يبقى استنادا الى تجارب السنوات السابقة، في ان يؤدي هذا التحسن إلى إضعاف عملية تنفيذ الإصلاحات. كما أن الانتعاش الأخير محفوف بشكل خاص بالمخاطر المالية الكبرى. وتأتي هذه المخاطر نتيجة تزايد الجمود في الميزانية، والتباطؤ في تسوية المتأخرات، والانكشاف الكبير للمصارف المملوكة للدولة والبنك المركزي العراقي على الديون السيادية، ومعوقات إدارة الميزانية العامة للاستثمار التي اثرت سلبا على تقديم الخدمات العامة. أما في الجانب الإيجابي، يمكن النظر الى ان التقدم الحاصل في التكامل الاقتصادي الإقليمي فضلا عن التحسن في السيطرة الامنية قد اديا الى توفير زخمً جديدً للنمو والتنوّع. ويؤكد اتساع وعمق هذه التحديات الحاجة إلى ضرورة الاسراع في تنفيذ الإصلاحات الهيكلية من قبل الحكومة الجديدة.

## التغلّب على ندرة المياه وتأثيرات تغير المناخ

**ان النقص المتزايد للمياه وآثار تغير المناخ يتطلب إصلاحات كبيرة في قطاع المياه للاستفادة القصوى من الفرص المتعلقة بالمياه وإدارة المخاطر المتعلقة بالمياه (الجفاف والفيضانات).** في عام 2015، اعتمدت حكومة العراق استراتيجيتها الوطنية لتنمية موارد المياه والأراضي للسنوات العشرين القادمة. وحذّرت الاستراتيجية، المعروفة ب( استراتيجية موارد المياه والأراضي في العراق أو استراتيجية SWLRI)، من أنه في حال الاستمرار في اعتماد «سيناريو العمل المعتاد» ، فانه بحلول عام 2016، لن يكون لدى العراق الكمية أو الجودة اللازمة من المياه. وقد دعت الاستراتيجية إلى إجراء إصلاحات كبيرة تجنّب هذا المسار المقلق. وبحلول عام 2030، من المتوقع أن يواجه العراق ندرة شديدة في المياه، مع توفر أقل من ألف متر مكعب للفرد في السنة. هذا ويواجه قطاع المياه في العراق العديد من التحديات، من بينها: (1) زيادة الطلب على المياه والتنافس على الموارد المائية بين القطاعات، (2) تدهور جودة المياه، (3) وضعية متهالكة للبنية التحتية التي تعمل بمستويات دون المستوى الأمثل، و(4) انخفاض توافر المياه بسبب التأثيرات المناخية . وكانت الاستراتيجية قد لحظت ان الموازنة المطلوبة لتنفيذها في هذه المهلة الزمنية تقارب 180 مليار دولار أمريكي ، غير ان التمويل لم يتوفر وفق المخطط المرسوم كما هو متوقع بسبب انخفاض أسعار النفط والتأثيرات المالية الناجمة من الحرب التي شنها تنظيم الدولة الإسلامية على العراق. وفي هذا الوقت، لم تعد مرونة قطاع المياه الحالية (ان على مستوى التخزين اوالبنية التحتية للنقل) كافية لمواجهة الآثار الحتمية لتغير المناخ. ويحتاج قطاع المياه إلى تحسين إنتاجية المياه وكفاءتها واستدامتها المالية على المدى المتوسط إلى الطويل والتحكم في الطلب على الموارد المائية لمواجهة ندرة المياه وآثار تغير المناخ.

**يعتمد قطاع المياه في العراق على بنية مؤسسية شديدة المركزية، مما يخلق تحديات تنسيق في إدارة الموارد المائية وتقديم الخدمات في جميع أنحاء البلاد.** ان غياب التوافق بين المحافظات وعبر القطاعات قد ادى إلى ظهور ما يسمى بظاهرة «مأساة المشاعات»، والتي برزت واضحة في تدهور جودة المياه عند المصب حيث يلوث مستخدمو المنبع موارد المياه اللازمة في اتجاه مجرى النهر. ويؤدي التحكم المركزي في توفير خدمات المياه والصرف الصحي أيضًا إلى محدودية التواصل مع السلطات على المستوى المحلي ولا يفسح مجالا واسعا من المرونة للاستجابة للسياقات والمواقف المحلية المتغيرة باستمرار. على الرغم من أن التخطيط المركزي لموارد المياه يبقى ضروريًا بسبب الهيدرولوجيا المعقدة، فإن المشاركة في إدارة وتخصيص موارد المياه على المستوى المحلي ضرورية لدمج المعرفة المحلية والأولويات المحلية المتنوعة.

**إن نقص التمويل في قطاع المياه ناتج عن محدودية الإيرادات المحصلة من المشتركين في خدمات المياه، كما أنها ناجمة عن الهيكلية المؤسسية للقطاع وتحديات العراق الإقتصادية والتنموية.** يتقلب التحديد المركزي للموازنات وفق تقلبات الاقتصاد الكلي والقيود المفروضة على الموارد المالية الناجمة عن عدم الاستقرار السياسي. ويبقى العراق في خطر متزايد جراء هذه التقلبات الناتجة عن عدم استقرار اسعار النفط والاكلاف المالية الكبيرة نتيجة القتال ضد تنظيم الدولة الإسلامية الإرهابي والمتطلبات المالية لإعادة الإعمار اللازم بعده. ويبقى الاستقرار المالي شرطا اساسيا لتنفيذ ناجح لمشاريع الاستثمار الرأسمالي ، خاصة في قطاع المياه حيث يتطلب تنفيذ هذه المشاريع فترة زمنية طويلة. كما تركّز الميزانيات المركزية بشكل غير متناسق على مخصصات النفقات الرأسمالية والرواتب ولكن بشكل أقل على نفقات إدارة العمليات والصيانة، مما يؤدي إلى تدهور أسرع في وضعية البنية التحتية القائمة. بالإضافة إلى ذلك، يؤدي

الاختلال بين توافر البيانات والحوافز إلى خلق تحديات تواجه إدارات التخطيط المركزي و إدارات المحافظات لخدمات المياه والصرف الصحي، مما يؤدي إلى اعتماد تعريفات قد لا تعكس بحق التكاليف المحلية لتوصيل المياه. فيما تشكل الإيرادات الحالية من العملاء جزءا بسيطا من تكاليف تشغيل وصيانة خدمات إمدادات المياه والصرف الصحي.

**في غياب أي إجراءات، قد تؤدي هذه القيود في قطاع المياه إلى خسائر كبيرة عبر قطاعات متعددة من الاقتصاد (الناتج المحلي الإجمالي، والعمالة، وأسعار المحاصيل) وتؤثر بشكل أكبر على الأشخاص المعرّضين.** ان خفضا بنسبة 20 في المائة من إمدادات المياه والذي يترافق مع التغيرات السلبية في ايرادات المحاصيل الزراعية نتيجة تأثيرات تغير المناخ قد يؤدي إلى خفض الناتج المحلي الإجمالي الحقيقي في العراق بنسبة تصل إلى 4 في المائة، أو ما يعادل 6.6 مليار دولار أمريكي، مقارنة بمستويات عام 2016، وانخفاض الطلب على العمالة غير الماهرة في الزراعة بنسبة 11.8 في المائة مقابل نسبة 5.4 في المائة من الطلب على الأنشطة غير الزراعية. سيؤدي خفض الإنتاج إلى زيادة قياسية بنسبة 13.9 في المائة لأسعار المحاصيل بالنسبة الى المستهلك ، كما سيزيد صافي الواردات من المواد الغذائية إلى أكثر من 960 مليون دولار أمريكي. ولما كانت العديد من الأسر في منطقة الشرق الأوسط تشتري الحبوب والمنتجات الغذائية، فان أي زيادة في أسعار المحاصيل ستؤدي إلى زيادة معدلات الفقر. وتكون الأسر ذات الدخل المنخفض هي الاكثر عرضة للخطر بشكل خاص لأنها تميل إلى إنفاق نسبة عالية من دخلها على الأغذية الأساسية (Martin and Ivanic 2016 مذكور في البنك الدولي، 2020). وتَظهر أوجه عدم مساواة مماثلة عند النظر في تخفيض العمالة الزراعية، والتي ستؤذي الفقراء بشكل غير متناسب. أما بالنسبة الى الخطوات المقبلة، يحدد هذا التقرير ثلاثة مجالات إصلاح لتحسين القدرة على الصمود في وجه ندرة المياه وتأثيرات تغير المناخ:

- **مجال الإصلاح 1: كفاءة المياه، والإنتاجية، وسياسات إدارة الطلب**

  تُعدّ زيادة كفاءة المياه وإنتاجيتها أمرًا ضروريًا، غير انه وجب ان تقترن بسياسات إدارة الطلب على المياه[1] للحد من الاستخدام الكلي للمياه. بالإضافة إلى ذلك، سيؤدي تحديث تشغيل السدود إلى تحسين إدارة الجفاف والفيضانات. أخيرًا، توفّر إعادة تخصيص المياه[2] داخل وعبر المحافظات أداة إضافية لصانعي السياسات للتعامل بشكل أفضل مع ندرة المياه وتغير المناخ.

- **مجال الإصلاح 2: الحلول المؤسسية**

  يتمتع قطاع المياه في العراق بفرصة تحسين إدارة الموارد المائية من خلال طرق متعددة للإصلاح المؤسسي. ويمكن إشراك أصحاب المصلحة لبناء توافق في الآراء بين مستخدمي المياه في العديد من المحافظات والقطاعات لتسخير فوائد عملية صنع القرار الشاملة. كما يمكن لمقدمي خدمات المياه الاستفادة من زيادة الاستقلال المالي والإداري على المستوى المحلي. ويؤدي تحسين استرداد التكاليف على المستوى المحلي إلى تحقيق إيرادات للحفاظ على تقديم الخدمات وضمان الاستدامة المالية على المدى المتوسط إلى الطويل، مما يحسن احتمالات مشاركة القطاع الخاص في قطاع المياه.

- **مجال الإصلاح 3: الحلول الإقليمية**

  يتمتع قطاع المياه في العراق بفرصة تحسين إدارة الموارد المائية من خلال طرق متعددة للإصلاح المؤسسي. ويمكن إشراك أصحاب المصلحة لبناء توافق في الآراء بين مستخدمي المياه في العديد من المحافظات والقطاعات لتسخير فوائد عملية صنع القرار الشاملة. كما يمكن لمقدمي خدمات المياه الاستفادة من زيادة الاستقلال المالي والإداري على المستوى المحلي. ويؤدي تحسين استرداد التكاليف على المستوى المحلي إلى تحقيق إيرادات للحفاظ على تقديم الخدمات وضمان الاستدامة المالية على المدى المتوسط إلى الطويل، مما يحسن احتمالات مشاركة القطاع الخاص في قطاع المياه.

[1] يشير تعبير "سياسات إدارة الطلب على المياه" في هذا التقرير إلى السياسات التي تؤثر على استخدام المستهلكين للمياه: تسعير المياه، والحصص، وتحويل المحاصيل، ومحاسبة المياه ومراقبتها، واستخدام التكنولوجيا التحويلية لدعم مراقبة وتطبيق إدارة المياه، والاستراتيجية الاتصالات.

[2] يتم تعريف إعادة تخصيص المياه هنا على أنها تغيير في حجم أو توقيت أو موقع أو جودة المياه التي يتم توفيرها بموجب حقوق المياه الرسمية أو غير الرسمية.

# 1

# RECENT ECONOMIC AND POLICY DEVELOPMENTS

## Output and Demand

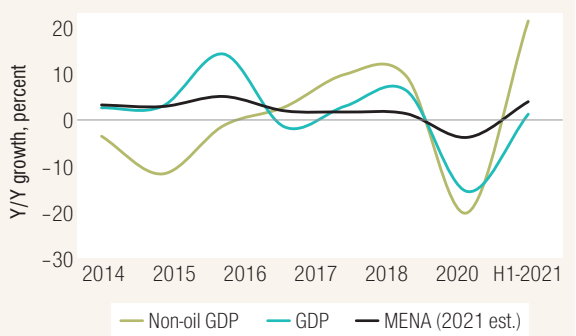
**After a sluggish start to 2021, the economy is now slowly recovering from the double COVID-19 pandemic and oil shocks.** Global demand has boosted oil prices, OPEC+ loosened oil production quotas to the benefit of Iraq, and COVID-19 restrictions were gradually lifted, leading to some recovery of economic activity especially in the services sectors. The recovery was also aided by government actions that continued to push forward the Government of Iraq's (GoI) White Paper reforms and managed to provide a small stimulus through public transfers as well as schemes aimed at increasing credit to small and medium enterprises (SMEs).

**Economic growth was driven by the non-oil sector as oil production was restricted under the OPEC+ agreement.** Iraq's Gross Domestic Product (GDP) grew by 0.9 percent year-on-year (y/y) in the first half 2021 (H1-21), after a 16 percent contraction in 2020 (Figure 1), despite negative contribution from oil (Figure 4). The modest rebound was driven by the non-oil economy, which grew by 21 percent (y/y). This strong rebound was due to a surge in services as the pandemic containment measures were eased following a decline in the infection positivity rate. This recovery outpaced the slowdown in the oil sector, which contracted by 10 percent, as Iraq adjusted its production levels to meet its OPEC+ quota early in the year (Figure 3). As a result, GDP per capita grew by 0.2 percent, following a contraction last year. GDP per capita growth remains lagging behind Middle East and North Africa (MENA) and upper-middle income countries (UMICs) averages (Figure 2).

**On the production side, electricity, water and agriculture sectors shortfalls have hampered growth.** Electricity and water sectors contracted by 0.5 percent (y/y) in H1-21. Years of expanding electricity supply has not met Iraq's growing energy demand and frequent power cuts persist owing primarily to problems in transmission and distribution.[3] The collapse in oil prices in 2020 compounded these problems by limiting Iraq's ability to invest in rehabilitation of its energy

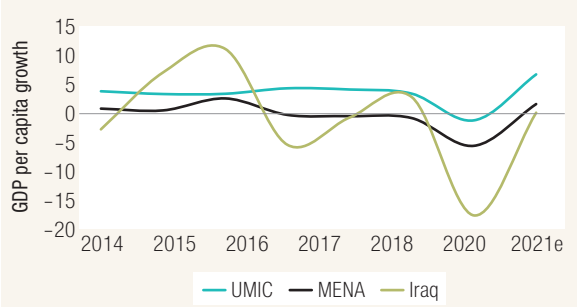
[3] Electricity supply in Iraq surpassed 18.4 Gigawatts (GW), up from 5.5 GW in 2010, but remains below the total demand of 28 GW. Source: Iraq Ministry of Electricity (MoE) and Bloomberg https://www.bnnbloomberg.ca/iraq-plans-to-go-nuclear-to-resolve-crippling-power-shortages-1.1614025).

FIGURE 1 • The Economy Is Gradually Recovering in 2021



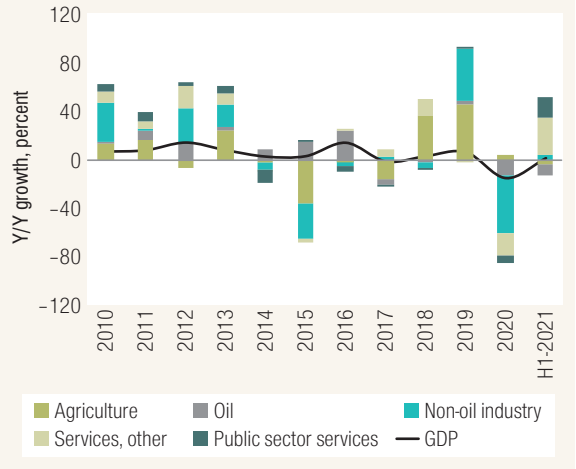

*Sources*: COSIT, WDI and World Bank staff calculations.

FIGURE 2 • Per Capita GDP Is also Growing but Remained behind that of its Regional and Income Peers



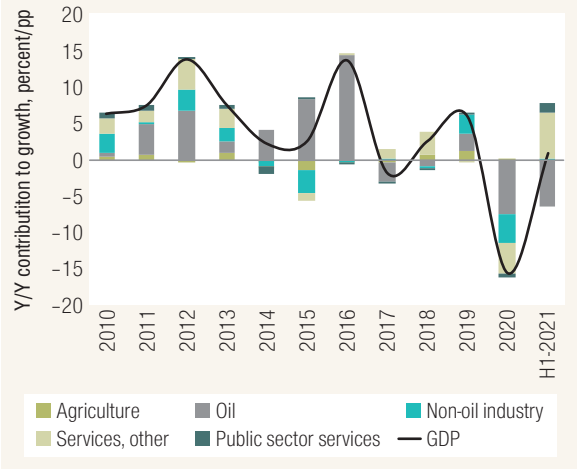

*Sources*: COSIT, WDI and World Bank staff calculations.

FIGURE 3 • Economic Growth Has Recovered in H1-21 Driven by Improved Performance of Non-Oil Activity…




*Sources*: COSIT, WDI and World Bank staff calculations.

FIGURE 4 • …and Despite Negative Contribution from Oil Which Offset the Overall Growth by More than 6 pp



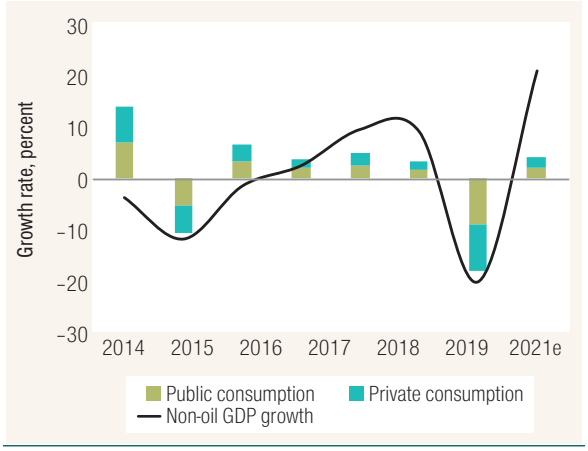

*Sources*: COSIT, WDI and World Bank staff calculations.

sector and to import gas from Iran. The declining water supply and governance problems in the sector are also another source of drag on growth if left unaddressed. Electricity and water shortages are causing widespread disruptions in the agriculture sector. Coupled with lower than usual rainfall, the second lowest in 40 years, agriculture value-added contracted by 3.3 percent (y/y) in H1-21 (Figure 3). According to the Food and Agriculture Organization (FAO), drought impacted the production of strategic crops, with wheat and barley production projected to drop by over 70 and 90 percent in 2021, respectively.[4] These trends will have severe implications on food security, particularly for the large numbers of poor people living in rural areas (Box1). Both electricity and water shortages are exacerbated by overconsumption of these resources which are highly subsidized. Appropriate pricing of these resources would help incentivize more efficient use of these resources and manage the growing demand.

**On the demand side, consumption picked up in 2021 as lockdowns eased and higher oil prices boosted government spending (Figure 5).** With the COVID-19 Stringency Index declining from 84 to 76,

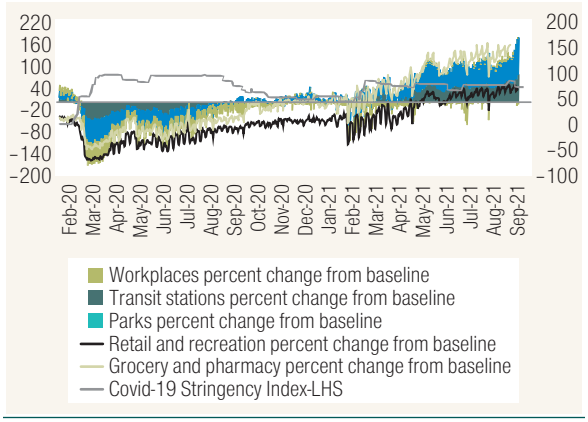
[4] FAO, Global Information and Early Warning System (GIESW), June 2021.

FIGURE 5 • Consumption Is Expected to Pick Up in 2021




*Source:* COSIT and World Bank staff calculations.

FIGURE 6 • As Pandemic Containment Measures Loosened, Mobility Improved Giving a Boost to Private Consumption




*Source:* Coronavirus Government Response Tracker, University of Oxford.

Google's mobility data has been reflecting the rising activity in Iraq as containment measures began to ease starting in Q2-21 (Figure 6). Despite such easing, the vaccination rollout has partially helped curb Iraq's daily COVID-19 infections rate, which dropped by over 82 percent in September 2021 from its July peak. Such improvements have gradually helped boosting private consumption. Moreover, public consumption has also been supporting growth. Fiscal data for the first seven months of 2021 (7M-21) reveals an almost 11 percent (y/y) rise in primary expenditures including a 26 percent increase in social welfare expenditures.

**Investment has also contributed positively to growth but remains below the development needs of the country.** The global and domestic economic recovery have boosted private investment in Iraq most notably in the energy sector. As a result, and after a sluggish start, net foreign direct investment (FDI) has recuperated and rose by 27 percent in H1-2021 (y/y) reaching US$2.1 billion. Moreover, public investment has also picked up rising by 79 percent over the same period (y/y). The GoI has been pursuing investment friendly policies to improve the business environment such as facilitating company registration and foreign ownership, access to international arbitration for commercial conflict resolution, an investor friendly visas system, as well as increasing budgetary allocations for public capital spending. However, the impact of those reforms is yet to materialize. The overall investment has remained low at 3 percent of GDP which is well below the growth and service delivery needs for Iraq. The low investment level is a reflection of broader governance and corruption challenges that the country has experienced. Even at current spending levels, public service provision—including roads, electricity, and water—could have been much higher were it not for the high level of corruption and other inefficiencies. Structural problems impeding the diversification agenda combined with public investment management constraints are hampering the prospects for increased investment.

## Oil and Gas Developments

**Iraq's oil production is rising as OPEC+ cuts are gradually tapered**. The July 2021 OPEC+ agreement to boost global oil production by a further 2 mbpd until the end of the year, has been favorable to Iraq. As a result, Iraqi crude oil output rose by over 12 percent (y/y) and reached an average of 4 mbpd in August-September 2021, its highest since the quota agreement was put in place in April 2020 (Figure 7).[5] Nevertheless, such flexibility has yet to fully offset the earlier

[5] The new OPEC+ agreement, which expires by end-2022, is also allocating higher output quotas to five member countries starting May 2022, with Iraq's output set to rise by 150,000 bpd.

## BOX 1 IMPACT OF COVID-19 ON IRAQ'S FOOD SECURITY*

The World Food Program data shows that approximately 2.6 million Iraqis had insufficient food consumption as of February 2021 (6.3 percent of the population). Earlier data from October 2020 shows that 9.9 percent of the Iraqi population (3.8 million people) adopted negative food-based coping strategies, relying on "less expensive food," "borrowing food" or "borrowing money to buy food" as the most common coping strategies. Negative coping strategies levels were even higher among internally displaced persons (IDPs) and returnees at 29 percent and 21 percent, respectively (Figure B1.2).

To examine more broadly this issue, a multi-agency report* detailed the channels through which the pandemic impacted food security most notably at the peak of the COVID-19 spread in 2020. Those channels are summarized below:

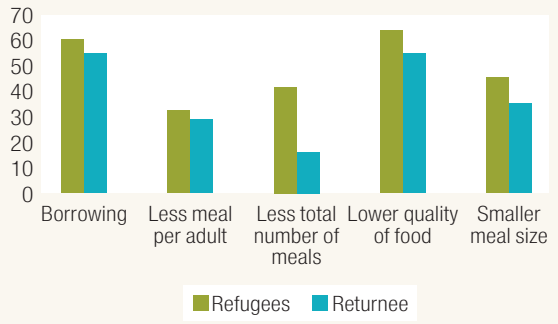
**At the macroeconomic level:**

- Underinvestment in the agriculture sector as the twin shocks (oil and COVID-19) tightened the fiscal space and reduced private sector investments.
- Border closures and strict controls coupled with import bans on certain consumer goods disrupted supply chains for food products. For example, Iraq's trade flow from Jordan dropped to 3,000 metric tons (MT) of wheat in 2020 compared to 10,000 MT in 2018.
- The drought in 2021 reduced agriculture output including wheat and barley, the two most important staples in Iraq.

**At the farmers' and firms' level:**

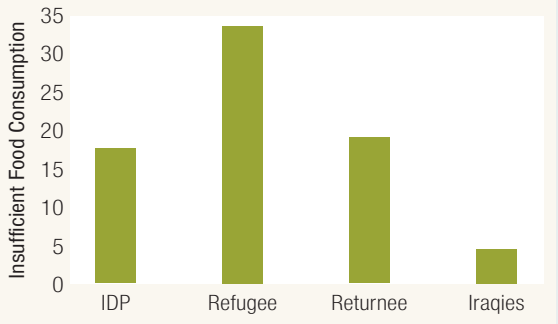
- Mobility restrictions undermining farmers' preparations for the new agricultural season; a problem compounded by the limited availability of cold storage and packaging materials.
- Rising costs of agriculture inputs, declining availability of financial support and marketing services, and delays payment by authorities of outstanding dues.
- Between June and September 2020, seven out of 10 SMEs in the agriculture and food sectors reported production and sales declined by 50 percent on average.
- Vendors reported difficulties in transporting goods, and consequently adjusted by changing their own suppliers, although at an increased cost which they then passed on to their customers.

FIGURE B1.1 • Negative Coping Strategies




*Source*: Rapid Welfare Monitoring Survey (SWIFT) 2017/18 (B1.1,B1.3, B1.4); High Frequency Phone Survey 2020 (B1.2).
*Note*: 2017 estimates are from the SWIFT survey and the 2020 are projections from a Macro-Micro simulation.

FIGURE B1.2 • Insufficient Food Consumption

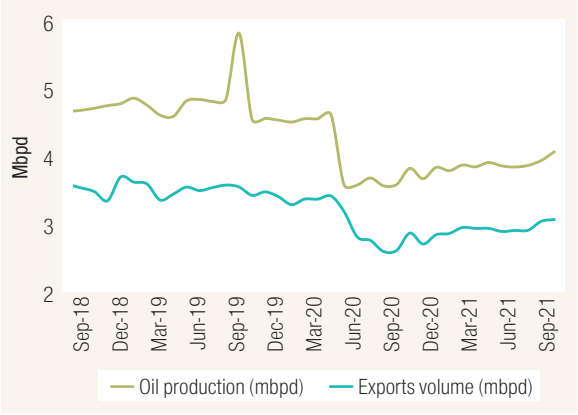



*Source*: Rapid Welfare Monitoring Survey (SWIFT) 2017/18 (B1.1,B1.3, B1.4); High Frequency Phone Survey 2020 (B1.2).
*Note*: 2017 estimates are from the SWIFT survey and the 2020 are projections from a Macro-Micro simulation.

* Food security in Iraq, impact of COVID-19, World Food Program (WFP); The World Bank (WB); International Fund for Agriculture Development (IFAD); and Food and Agriculture Organization (FAO), April 2021.

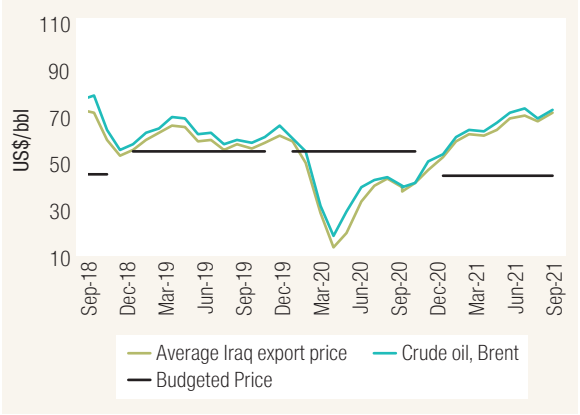
adjustment measures as Iraq's oil production averaged less than 4mbpd in 7M-21, down from 4.2 mbpd in 7M-20. In addition to quotas, major obstacles to further expansion of oil production exist. This includes water shortages affecting the operations in oil fields, and more transparency in the governance of the sector.

FIGURE 7 • Oil Production and Exports Volume Are Inceasing as OPEC+ Relaxed Production Limits




*Sources*: Iraq's Ministry of Oil (MoO), and World Bank Staff calculations.

FIGURE 8 • Prices for Iraq's Oil Have Rebounded Since Mid-2020 Driven Partially by the Pick-Up in Global Demand




*Sources*: MoO, Iraq's Ministry of Finance (MoF); and World Bank Staff calculations.

**The adjustments in oil production to meet the OPEC+ quota have been compensated by the rapid recovery in international oil prices.** After 14 months**,** Iraqi crude oil exports rose to over 3mbpd and traded at an average price of US$65.7 per barrel in 9M-21, up from US$37 per barrel in 9M-20 (Figure 8). While higher oil prices reduce short-term vulnerabilities, excessive dependency on oil exports exposes the country to macroeconomic volatility. The impact of the recent twin shocks (oil and COVID-19) underscores the urgent need to address the long-standing structural weaknesses to expedite diversification efforts, embark on a low carbon economy, and chart a path for inclusive and sustainable development.

**Iraq is making progress in investing in the energy sector.** Iraq has stepped up major energy investments in 2021 to reduce reliance on gas and electricity imports and raise potential crude output to 7 mbpd by 2027.[6] Iraq's Basra Gas Company signed a five-year loan agreement with the International Finance Corporation on June-2021, worth US$360 million. The project aims to reduce gas flaring, improve energy access, curb greenhouse gas emissions, and support a more resilient energy sector in Iraq.[7] GoI also signed a sizeable US$27 billion deal with TotalEnergies in September 2021 to develop its energy sector over 25 years. The agreement includes four projects: (i) develop Ratawi oilfield in the southern province of Basra to raise production capacity from 85,000 to 210,000 bpd; (ii) develop a gas processing plant at Ratawi with a capacity of 600 million cubic feet a day; (iii) a seawater supply facility project with a capacity of 7.7 mbpd to maintain production levels; and (iv) develop a 1GW solar power plant. Moreover, the GoI signed two other agreements in June and August with UAE-based Masdar and PowerChina for the construction of solar energy with a capacity of 2GW respectively. Many of these investments are at an initial phase and yet to be executed. To reap the largest economic returns and improve service delivery, these projects will have to be accompanied by governance reforms in the energy sector.

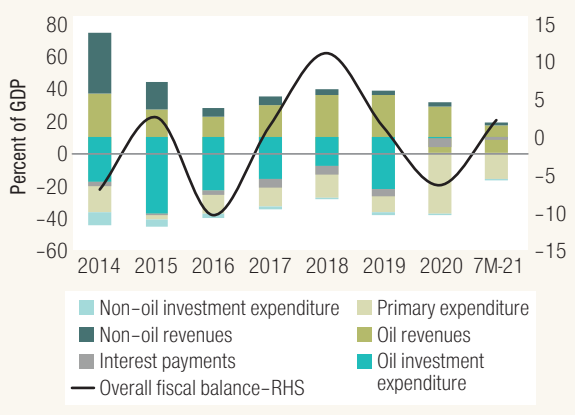
## Public Finance

**As oil market conditions recovered, Iraq's fiscal deficit turned into a surplus in the first half of 2021.** The latest fiscal data available for the 7M-21

[6] Iraq is heavily reliant on gas and electricity imports from Iran to meet domestic needs, however, the flows have been volatile recently due to Iraq's arrears to Iran and growing domestic demand in Iran.

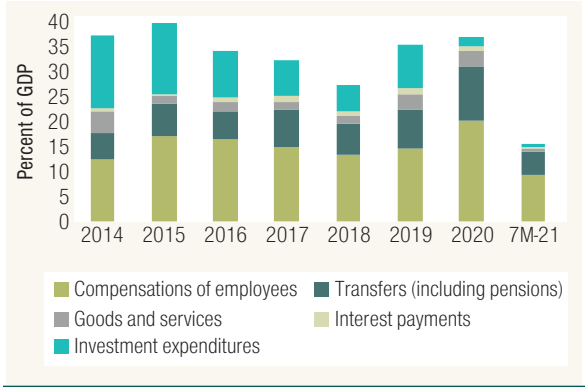
[7] Iraq joined the Global Gas Flaring Reduction initiative in 2011 and committed in 2013 to eliminate all routine natural gas flaring by 2030.

FIGURE 9 • Overall Fiscal Balance (Cash Basis) Is Improving Owing to Higher Oil Prices and Oil Exports




*Source*: Ministry of Finance and World Bank staff calculations.

FIGURE 10 • GoI Policies Led to Rising Non-Discretionary Spending with the Wage Bill Consuming the Largest Share of the Budget




*Source*: Ministry of Finance and World Bank staff calculations.

shows important gains in budgetary revenues as oil prices rose above US$64 a barrel (up 81 percent y/y). These gains were also compounded by the fiscal effects of the dinar devaluation and measures to boost domestic revenue mobilization. These developments were enough to turn the overall fiscal deficit into a small surplus (on cash basis) of 2.2 percent of GDP in the 7M-21 despite spending rigidities (Figure 9). The fiscal balance calculated on accrual basis is considerably less favorable owing to the large size of unaccounted arears. Moreover, in the absence of significant reforms to the wage and pension bill, financing needs remained present at over US$1 billion in 7M-21.

**Iraq has made progress in mobilizing non-oil domestic revenues.** The 2021 budget law directives on customs and tax administration reforms have started paying off, with non-oil budgetary revenues surging by 47 percent in the 7M-21 (y/y). These included linking customs to the currency window at the central bank limiting over-usage, border management tightening, and improvement to tax collection measures among other actions. However, at only 1.6 percent of GDP (Figure 9), Iraq still has a long way to catch up with UMIC and MENA oil exporters whose non-oil revenues average 24 and 10 percent of GDP respectively. Moreover, low tax compliance, widespread exemptions and a weak legal framework governing taxation have resulted in a tax-to-GDP ratio of only 0.6 percent of GDP in 7M-21. This will not be enough to reduce the sensitivity of the budget to oil price volatility. The White Paper recognize this structural fiscal constraint and devises tax policy and tax administration reforms aimed at raising domestic revenue mobilization.

**The budget remains large, beset by rigid spending on wages and transfers, reducing the ability of the GoI to undertake fiscal adjustments or further stimulate the economy, and produces poor quality services.** Sizeable fiscal loosening over the years has resulted in rising budget rigidities and eroded fiscal buffers. This was most visible after an expansionary fiscal package following the October 2019 demonstrations, which raised the wage bill by almost 15 percent of GDP in 2019. Despite attempts at consolidation in the second half of 2020, Iraq continues to allocate a significant portion of the budget towards non-discretionary spending, especially the wage bill and transfers, at the expense of a stimulus to fight the drawbacks from the pandemic. Fiscal data for the 7M-21 shows that while the wage bill declined by 1.5 percent compared to 7M-20 (y/y), it now accounts for over 9 percent of GDP (55 percent of total spending and 50 percent of budgetary revenues) (Figure 10). Meanwhile, the pension and social security law approved by the cabinet in November 2020 will expand benefits to the private sector without ensuring adequate contributions

## BOX 2 IRAQ COVID-19 HIGH FREQUENCY PHONE SURVEY[a]

*This box summarizes the main findings of the most recent round of phone interviews aimed to assess the Impact of COVID-19 pandemic on labor and welfare.*

***Impact on labor***. While estimated labor force participation for individuals between 18 and 64 years of age across Iraq remained above 61 percent throughout the last four rounds of the monthly survey (Oct 2020–Jan 2021), the estimated unemployment rate increased significantly during the pandemic. Compared to 12.7 percent unemployment prior to the pandemic, the figure climbed to 22 percent in October 2020 and increased slightly to 23.5 percent in January 2021. Despite lower labor force participation, unemployment rates for the non-displaced population were both more volatile and slightly higher (26.2 percent) than for IDPs or returnees (24.5 and 21.8 percent). While labor force participation among female respondents for IDPs, returnees and non-displaced households have been approximately half that of males (roughly 43.5 versus 87.5 percent), female respondents who do participate are three times as likely to be unemployed as males (roughly 54 versus 16 percent). IDPs living in camps are less likely to look for work than those living out of camps, and among those who are looking, camped IDPs are less likely to find employment. While a further investigation is required, camped-IDPs may find assimilation into the local labor market more difficult than the IDPs already living in the communities.

***Impact on welfare***. Assistance programs helped stabilize welfare, but the ability to benefit from that help varied starkly between displaced groups. Returnees tended to be most able to benefit from this help; indeed, returnees were more likely to receive PDS transfers than nondisplaced households in every month observed (October 2020–January 2021). Camped IDPs were also able to avail themselves of cash and in-kind assistance. However, there is real cause for concern for IDP households who are not part of a camp. Only 38.2 percent of these households received PDS transfers (compared to two thirds of nondisplaced and camped IDP households). Even lower trends are seen for out of camp IDPs receipt of non-PDS in-kind transfers and cash transfers from any source. In combination with high shares of non-camped IDPs consuming inadequate diets, this group warrants further initiatives to monitor and improve welfare.

FIGURE B2.1 • Impact of COVID-19 on Labor Force Participation

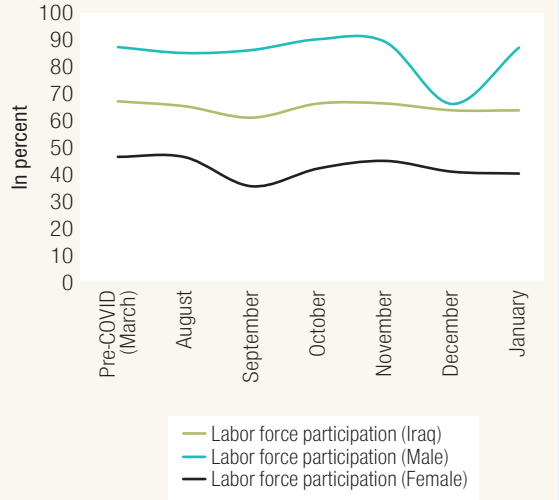



FIGURE B2.2 • Impact of COVID-19 on Unemployment


[a] "Iraq High Frequency Phone Survey, to monitor socioeconomic trends during COVID-19. Results from October, November, December 2020, and January 2021 rounds". World Bank, World Food Program, and Joint Data Center for Forced Displacement.

rates to cover the costs. Pensions and the consumer goods offered by the Public Distribution System accounted for 3.4 percent of GDP in the 7M-21. These are accompanied by various subsidies, notably fuel and electricity, which are also costly and poorly targeted. Wage bill, pensions and subsidies reforms are required to generate the needed fiscal space to invest in human capital and reap the returns on growth and welfare (Box 2).

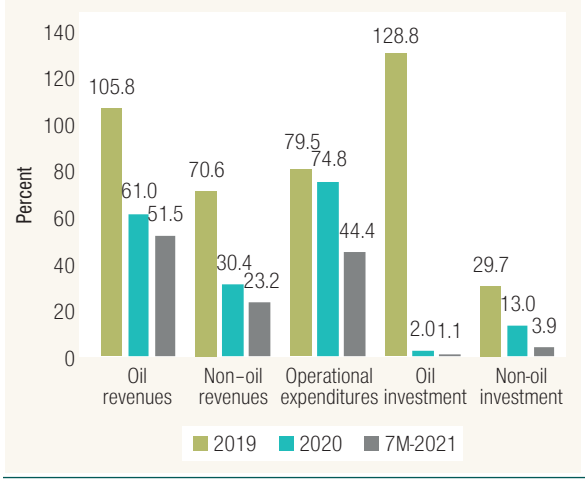
**In addition, accruing arrears especially those related to electricity, public wages and pensions intensify pressures on Iraq's public finances**. According to the 2021 budget law, arrears for electricity and gas imports, and for independent power producers amounted to IQD2.3 trillion (1 percent of GDP). This is added to the wage and pensions arrears estimated at IQD11.9 trillion (6 percent of GDP) in 2020. In addition to the liquidity risk, persistent arrears accumulation could have a detrimental impact on aggregate demand, interrupt public service delivery, increase interest rate, and reduce the effectiveness of fiscal policy.

**With the GoI failing to address structural bottlenecks for project implementation, public investment remains below the levels needed to sustain higher levels of growth**. Management constraints, complex relations between the center and governorates, rising non-discretionary spending and documented corruption cases are all aggravating inefficiencies of public investment in Iraq. This is reflected in low levels of capital spending and weak execution rates. Data for the 7M-21 reveal that investment expenditures accounted for a mere 0.5 percent of GDP, of which 0.4 percent of GDP was for non-oil investment (Figure 9). Moreover, the execution rate for public investment reached only 3.2 percent. This contrasts with over 44 percent execution rate for operational expenditures (Figure 11). The GoI policy has always been to allocate large sums to public investment in the budget. However, it has failed to address the structural bottlenecks surrounding implementation. More importantly, governance challenges, especially corruption, have diverted budget revenues away from much needed public investment and led to the current low level of public investment. Such outcomes not only put a drag on long-term growth, but also have affected service delivery and poverty reduction efforts. They also increase social vulnerabilities, especially in times where boosting physical and human capital is key to manage the impact of shocks like the pandemic and most importantly advance the economic diversification agenda.

**Iraq's public debt ratio improved in line with better fiscal outcomes, but liquidity risks remain elevated**. The base effect from rapid nominal GDP growth and the overall fiscal surplus are improving the debt-to-GDP ratio which peaked at 71.6 percent in 2020. The external debt stock composition is relatively favorable as it encompasses legacy arrears to non-Paris Club creditors and two-thirds of this debt stock is long term and relatively concessional. Nevertheless, liquidity risks remain present. First, because potential oil shocks can reduce foreign currency reserves. Second, because of the excessive reliance on domestic debt, estimated at US$47 billion (28 percent of GDP or 48 percent of total debt stock in 2020) and mostly short-term. The latter also implies higher rollover and refinancing risks as well as the crowding out of much needed private sector credit. A balanced debt management strategy is required to reduce those risks. This includes addressing structural policy issues to reduce the costs of Iraq accessing the international debt markets on the one hand and develop the domestic market to extend maturities of issuances and expand the investor base on the other.

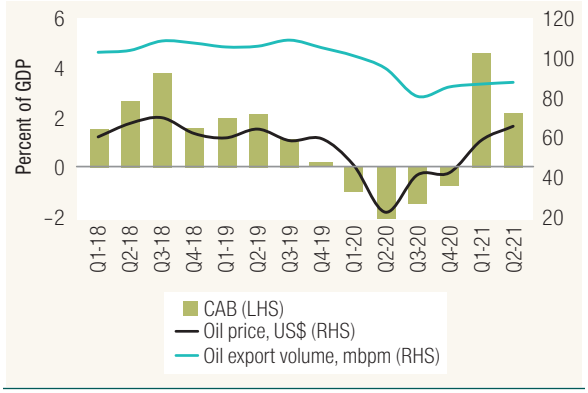
**Budget allocation disagreements between the Federal Government and the Kurdistan Regional Government (KRG) have eased in 2021**. An interim agreement was reached between the two in June 2021 to temporarily resume transfers, based on which, the KRG received three payments for

FIGURE 11 • Execution Rates, Particularly for Public Investment, Remained Low



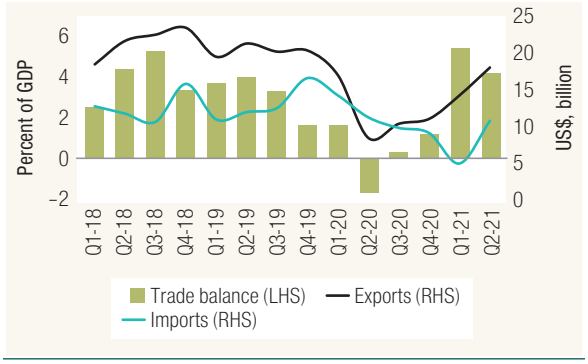

*Source*: MoF and World Bank staff calculations.

FIGURE 12 • CAB Returned to Surplus in H1-21 Easing the External Position of Iraq




*Source:* CBI, MoO and World Bank staff calculations.

FIGURE 13 • Higher Oil Prices and Lower Private Imports Contributed to the Positive Trade Balance Outcome




*Source:* CBI and World Bank staff calculations

July-September of IQD200 billion (US$137 million). The interim agreement has largely addressed the region's immediate needs, particularly salaries and pensions, and represents a quick fix until both sides finalize the details on how to implement the federal budget. Ultimately, under the premises of the 2021 federal budget law, the KRG could receive monthly installments of IQD950 billion (US$650 million) in return for handing over revenues from the sale of 250,000 barrels of crude oil per day and half of the region's non-oil revenues.

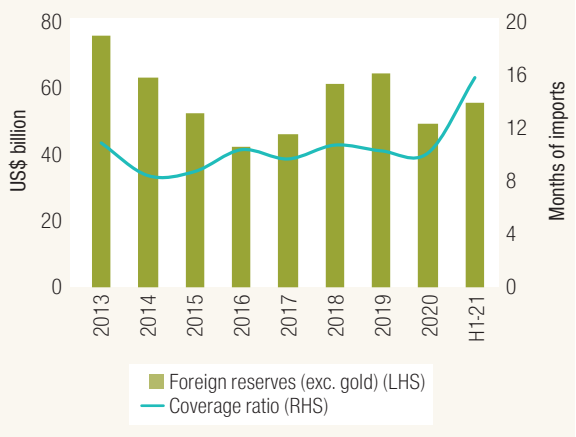
## External Sector

**The current account balance (CAB) returned to surplus in H1-21 as crude prices continued their upward trend, easing the external position of Iraq.** A strong rebound in oil prices has pushed the current account balance into a surplus of nearly 7 percent of GDP in H1-21 (US$12 billion), following a deficit of almost 4 percent of GDP in H1-20 (Figure 12). The devaluation of the dinar in December 2020 has also contributed to this outcome as imports became more expensive. Imports from the private sector, consisting mainly of capital goods, contracted by almost 37 percent in H1-21 or 4 pp of GDP (y/y) to reach 5.9 percent of GDP.

**A sluggish private sector recovery accompanied by rising oil exports have managed to turn the trade balance into a surplus.** A loosened fiscal stance resulted in a notable rise in imports of goods and services acquired by government agencies. These imports, which are typically dominated by non-capital goods such as refined oil products and consumption imports, increased by 63 percent (y/y) in H1-21. However, private sector imports fell significantly by 37 percent (y/y) in H1-21 due to a slow private sector recovery and the adjustments after the devaluation of the dinar. Indeed, more import substitution was observed especially in agri-food items. As a result, overall total imports fell by 39 percent in H1-21 (y/y), almost US$10 billion less compared to H1-20. Exports, entirely dominated by oil, increased over 27 percent in H1-21 (y/y) turning the trade balance into a surplus of 10 percent of GDP (US$17 billion) in the same period (Figure 13).

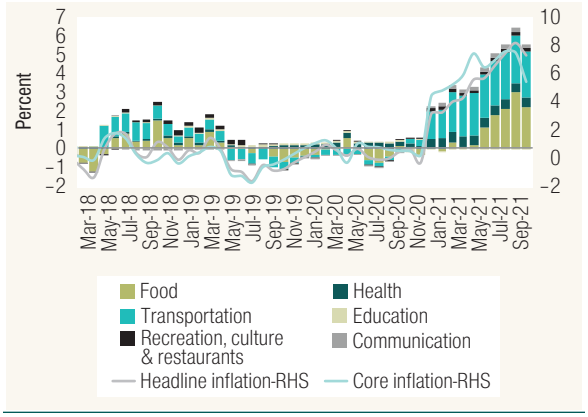
**The recovery in global investment has improved Iraq's external financing conditions and bolstered CBI's international reserves**. Available external financing has slightly recuperated as the energy sector attracted additional FDIs. Indeed, net FDI flows increased by 27 percent (y/y) in H1-21, reversing the 10 percent decline in 2020. This was also accompanied by a recovery in net official investments, which reached US$2.8 billion, largely through higher trade credits. While absorption capacity remains a constraint to further expansion of external financing sources, rising oil prices and export volume will continue to mitigate

FIGURE 14 • The Usable Reserves Have Increased to 15 Months of Imports




*Source*: CBI and World Bank staff calculations.

FIGURE 15 • Recovery in Domestic Demand and the Currency Devaluation Have Spurred Inflationary Pressures




*Source*: CBI and World Bank staff calculations.

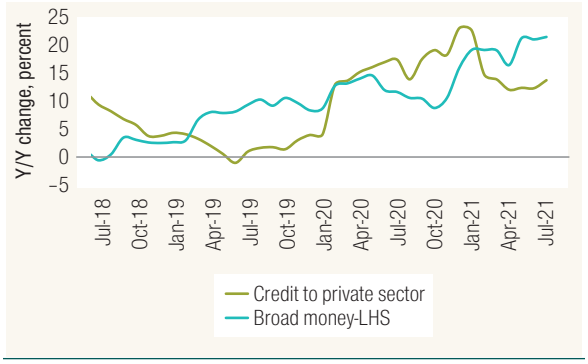
any potential pressures on external accounts. CBI usable reserves (i.e., reserves excluding gold) have increased from US$48 billion in 2020 to almost US$55 billion in H1-21, covering 15 months of current year imports of goods and services (Figure 14).

## Monetary Policy and Prices

**The recovery in domestic demand and the dinar's devaluation were the prominent drivers of inflation in 2021.** Cheaper imports and weak demand had kept Iraq's consumer price inflation low over the past 8 years. However, the recovery in domestic demand coupled with a 23 percent devaluation of the Iraqi Dinar in December 2020 are pushing prices higher. Prices typically adjust gradually after a devaluation, providing a lag effect on inflation as prices adjust to higher levels. As a result, headline and core inflation in the 8M-21 edged up to an average of 5.6 and 6.4 percent (y/y), respectively (Figure 15). This was largely driven by price increases of food items, mostly imported, such as dairy (11.8 percent), oils (8.5 percent) and meat (5.1 percent), as well as transportation and health services prices, which rose by 14.5 and 13 percent respectively. Frequent electricity cuts increased reliance on private electricity generation, and pushed electricity and water supply prices up by almost 12 percent. Inflationary pressures were partly dampened by the depreciation of the Turkish and Iranian currencies, the main import partners for Iraq.

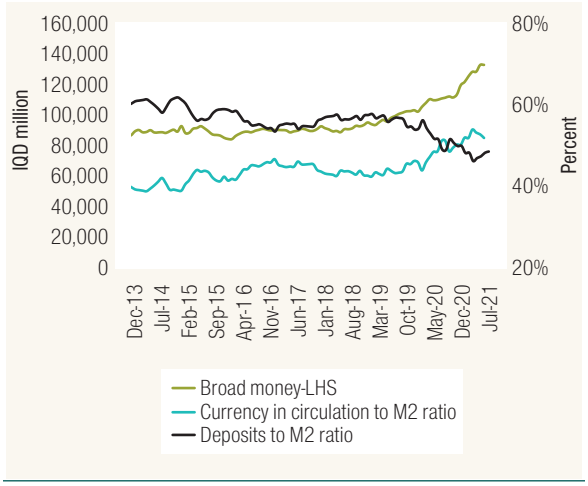
**Credit to the private sector continued to grow but at a decelerated pace as the CBI scaled back some of its support programs.** During 2020, the CBI retained policy interventions introduced at the onset of the pandemic including reduced reserve requirements, and moratorium on debt servicing by SMEs. At the time, temporary Electronic Know Your Customer (eKYC) requirements facilitated opening of e-wallets to receive cash transfer and promote digital financial channels. As a result, credit growth to the private sector was accelerated and reached a peak of 23 percent in Q4-2020. However, during 2021, the CBI started phasing out some of these procedures to ward off against inflation and contributed to decelerating credit growth to the private sector to less than 14 percent in 7M-21 (Figure 16). At only 11 percent of GDP, private sector credit in Iraq is by far the lowest in the MENA region (32 percent average), reflecting the shallow financial depth and limited role of the private sector to drive the economy. On the other hand, broad money (M2) has grown by 20 percent (y/y) driven not only by the pickup of overall economic activity, but more importantly from the cash nature of the economy and households turning to cash savings outside of the banking sector (home-savings).

FIGURE 16 • CBI Has Scaled Back Some of the Credit to Private Sectors Schemes to Limit Inflationary Pressure, but Abundance of Cash in the Economy Is Offsetting it




*Source:* CBI and World Bank staff calculations.

FIGURE 17 • The Economy Remained Cash-Based




*Source:* CBI and World Bank staff calculations.

Latest available data also shows the non-performing loans (NPLs) at State-Owned Banks (SOBs)[8] have increased to 18 percent in 2020, from 10 percent in 2019.[9] Similarly, NPLs at private banks are reported as high as 37 percent.

**Iraq's economy remains primarily cash based.** Cash, namely currency in circulation, continues to play a dominant role in Iraq's banking system. This is reflected in the high ratio of the currency in circulation to broad money. Data available shows that the ratio of deposits to broad money declined overtime from 61 percent by end 2013 to less than 49 percent as of July 2021, while that for currency in circulation increased from 39 percent to more than 51 percent over the same period (Figure 17). This reflects the increased use of cash in commercial transactions and lack of trust in the banking sector as more Iraqis prefer cash-at-home savings instead of deposits in the banking sector. This could also signal more drawings on dollars savings following the dinar devaluation. The use of digital technology to make payments remains limited. Only 11 percent of adults use digital payments compared to 23 percent in MENA.[10] Key steps are being taken to transform Iraq into a country less dependent on cash, which enables the state to fight corruption, evasion, and bureaucracy in financial dealings within banks operating in Iraq. These reforms, led by the CBI and MoF and described below, are moving forward in a gradual but steady way.

**Iraq remains committed to strengthening its financial industry as an integral part of the reforms visualized in the White Paper.** The CBI is implementing key reforms including a new corporate governance bylaw for Rasheed and Rafidain banks, establishing a SOBs' unit at the central bank, and a MoF's agreement to conduct an Asset Quality Review for the said banks. Moreover, to develop the domestic financial market and mobilize savings, the CBI offered the first issuance of (Binaa) bonds in two categories of IQD500 thousand and IQD1 million with annual interest of 6 and 7 percent, for two- and four-years maturity, respectively.[11] It has also completed the performance Scorecard Project for Environmental, Social, and Governance Standards

[8] Iraqi banking sector is dominated by under-capitalized and under-provisioned state-owned banks primarily used for quasi fiscal operations.

[9] The NPL figures are likely understated, as they do not reflect loans to public entities with uncalled government guarantees.

[10] World Bank Global FINDEX Database 2017.

[11] The "Binaa (construction) bonds was issued by the CBI in September 2021 in coordination with the Ministry of Finance. The issuance is open for public subscription through licensed banks. While they are called "construction", the bonds are not earmarked to specific infrastructure projects or sectors. https://cbi.iq/news/view/1832.

to address supervisory issues in the banking sector based on international best practices. Meanwhile, Mastercard signed a partnership agreement with the CBI last April in a bid to digitize the payment ecosystem and boost financial inclusion. In parallel, the CBI announced in March the launch of the digital enrollment service, which is the first of its kind in Iraq.[12] It is critical that these reforms, which are part of the GoI white paper, are fully implemented to ensure momentum is maintained towards the expeditious reform of Iraq's banking sector.

[12] This service helps conducting financial operations in a modern digital form, with the aim of reducing reliance on cash. Such service, if widely utilized, can be an effective way of reducing access barriers in the Iraqi banking sector and can help the fight against corruption and reduce bureaucratic red tape. https://cbi.iq/news/view/1651.

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# OUTLOOK AND RISKS

## Outlook

**The prospects for Iraq's economy have improved with the recovery in global oil markets, but the spread of new COVID-19 variants and climate change challenges pose significant headwinds.** The economy is forecast to gradually recover on the back of rising global oil prices in 2021–22 which are forecast to increase by 73 percent compared to 2020.[13] Oil GDP will be the main driver of growth in the medium term, which is expected to grow in line with the agreed gradual increase in OPEC+ production quotas. However, these quotas are planned to be phased out in September 2022 after which Iraq's oil production is projected to increase at a moderate pace. Given the high capital intensity of the oil sector, this rebound is not expected to create many jobs. In the absence of an accelerated process of reforms, average annual non-oil GDP growth is forecast to remain slightly under 3 percent in 2021–23 due to the impact of the COVID-19 Delta variant on the economy and the with water and electricity shortages that impact agriculture and industries (Table 1).

**More favorable oil market conditions are forecast to maintain the fiscal balance in surplus in 2021–23.** Higher oil revenues, driven by both export price and quantity increases, are expected to push total revenues to more than 40 percent of GDP. Non-oil revenues are also projected to steadily grow, albeit at a slower rate. However, in the absence of significant expenditure consolidation, structural rigidities including an oversized wage and pension bill[14] are projected to offset a significant part of the revenue increases. As with previous economic cycles, these recurrent costs are likely to be also prioritized at the expense of public investment with negative impact on growth. As a result, the fiscal surplus (on a cash basis) is forecast to average around 3 percent of GDP in the medium-term. In line with the trend in accumulating fiscal surpluses in the outlook, the debt-to-GDP ratio is projected to steadily improve to under 50 percent

[13] Commodity price forecasts are subject to large confidence intervals due to the evolving nature of the pandemic and the resulting uncertainties surrounding the pace and shape of the global economic recovery.

[14] Iraq's government wage bill and pension, measured as a share of GDP, is not only an outlier compared to the world average but also compared to the higher ratio witnessed in many MENA region countries. See, the recent World Bank Public Expenditure Review for Iraq.

by 2023. Nonetheless, government financing needs[15] are estimated to remain elevated (US$4.2 billion or 2.3 percent of GDP on average) and above pre-COVID-19 pandemic levels (Table 1).

**Higher oil exports are expected to drive a current account surplus in 2021–23, thereby reversing pressures on foreign exchange reserves.** In line with price and quantity increases, oil exports are forecast to rebound to over 41 percent of GDP and to account for 96 percent of goods exports over the outlook. These gains are expected to be partially offset by rising imports as domestic consumption gradually recovers after the adjustment effect of the currency devaluation. Imports are forecast to grow over 2021–23 in line with non-oil GDP growth. As a result, the current account balance is expected to remain at a surplus of over 5 percent of GDP in 2021–23. The accumulation of these surpluses is expected to lead to an increase in gross CBI foreign currency reserves to US$70 billion, equivalent to over 13 months of imports by 2023.

**The surge in poverty is expected to gradually reverse following the economic recovery and mass vaccination.** Sustained economic growth and job creation, especially in the non-oil sectors such as services, would translate to gradually undo the loss of household incomes. This recovery would be contingent on vaccine rollout especially in high contact sectors such as transport, accommodation, and retail sectors. Plans to ramp up vaccination are well underway across the regions of Iraq. However, the disproportional impact of COVID-19 pandemic on the pre-pandemic poor and vulnerable groups especially in terms of job/income loss and access to services, and the resulting inequality will be felt for a long time to come.[16] The diverging trends between groups and regions that overlap with Iraq's existing ethnic and religious divisions make the situation more precarious and call for appropriate planning in the recovery phase, including in the implementation of an equitable vaccination program.

## Risks and Opportunities

**Iraq's economic outlook is mired by significant risks that could materialize in the medium-term.** Downside risks include: a potential decline in oil prices, a worsening COVID-19 crisis due to the spread of new variants, a deterioration in security conditions, the intensification of climate change shocks and additional macroeconomic volatility. Positive oil price shocks would improve economic indicators in the short term but, as with past years' experience, could come at the risk of weakening the drive for reforms. On the upside, progress on regional economic integration together with an improved security environment could provide new momentum for growth and diversification.

**These sizable outlook risks are especially acute for government finances.** Due to high oil dependence, Iraq's fiscal account is highly sensitive to oil market volatility which in the absence of significant stabilizing mechanisms such as fiscal rules are directly transferred to the rest of the economy. With an oil price assumption of US$66 per barrel on average in 2021, sensitivity analysis shows that an oil price decline of US$1 per barrel would directly reduce revenues by 0.6 percent of GDP (or US$1.1 billion) per year. Similarly, a 0.1 mbpd decline in oil production would be equivalent to a 1.1 percent of GDP (or US$2.4 billion) fall in total annual revenues. On the expenditure side, the main source of fiscal risk is related to the accumulation of unaccounted arrears to domestic banks and public sector workers in addition to foreign arrears for energy imports. These arears are currently not captured by published government fiscal data as they are reported on a cash basis rather than accrual basis. The realization of these additional expenditures along with possible materialization of other contingent liabilities such as public guarantees to SOEs would significantly change Iraq's fiscal account outlook.

**Iraq also faces a pressing climate change challenge that will impact the country's development path.** The adverse impact of climactic challenges including desertification and water shortages (see this report's Special Focus chapter on water challenges in Iraq), which has already materialized across the country, are significant threats

[15] Government financing needs also includes debt servicing obligations.

[16] The poverty rate is estimated to have reached 29.8 percent in end-2020.

to future growth and the livelihood of all Iraqis.[17] The global climate challenges will also have direct negative spillovers for Iraq's economy as the rest of the world moves away from fossil fuels. While approval of new nationally determined contributions is an important step in the right direction, Iraq can benefit from significant progress through curbing gas flaring and transitioning away from oil for electricity generation.[18] Iraq is also endowed with a significant potential for renewable solar energy which will be crucial in this transition. Transition away from oil resources could have significant spillover effects through improving Iraq's governance and transparency conditions in the long term. Facing these challenges requires the government to embed the climate issues at the center of its economic development plan and policies.[19]

**The breadth and depth of economic challenges underscore the need for an accelerated implementation of structural reforms by the new government.** Averting or mitigating the impact of downside risks depends on the policies of the future government and commitment to comprehensive reforms. Iraq's recent parliamentary elections (held in October 2021) repeated the clear message from the majority of the population who demand change and accountability. The new government is well placed to respond to this important request and follow through with long overdue structural reforms paving the way for economic diversification. To this end, the existing GoI White Paper's comprehensive list of economic reforms remains relevant more than anytime which, if fully implemented and followed through, could put the economy on a more sustainable path that is less dependent on oil rents.

[17] According to authorities, Iraq's water supply-demand balance could reach a deficit of 11 billion cubic meters by 2035.

[18] Iraq's Council of Minister Meeting recently approved new national commitments, as announced on official GoI social media pages on October 15, 2021.

[19] Iraq's new 5-year National Development Plan for 2022–27 is currently being prepared by GoI.

TABLE 1 • Iraq: Selected Economic and Financial Indicators, 2018-2023

| | 2018 | 2019 | 2020 | 2021e | 2022p | 2023p |
|---|---|---|---|---|---|---|
| **Economic growth and prices** | | | | | | |
| Real GDP (percentage change) | 2.6 | 6.0 | -15.7 | 2.6 | 7.3 | 6.3 |
| Non-oil real GDP (percentage change) | 9.4 | 9.0 | -20.2 | 2.0 | 2.5 | 3.0 |
| GDP per capita (US$) | 5,720 | 5,866 | 4,017 | 4,038 | 4,175 | 4,465 |
| GDP (in IQD trillion) | 268.9 | 277.9 | 198.8 | 251.7 | 269.5 | 279.5 |
| Non-oil GDP (in IQD trillion) | 148.7 | 163.5 | 138.0 | 151.2 | 160.4 | 170.4 |
| Oil production (mbpd) | 4.61 | 4.84 | 4.00 | 4.12 | 4.54 | 4.91 |
| Oil exports (mbpd) | 3.50 | 3.54 | 2.99 | 2.91 | 3.24 | 3.58 |
| Iraq oil export prices (US$ pb) | 65.5 | 61.1 | 38.4 | 67.0 | 66.0 | 61.0 |
| Consumer price inflation (percentage change; average) | 0.2 | 0.4 | -0.2 | 7.5 | 3.5 | 3.1 |
| | | | In percent of GDP | | | |
| **Public Finance** | | | | | | |
| Government revenue and grants | 39.6 | 38.7 | 31.8 | 44.4 | 45.3 | 44.6 |
| Government oil revenue | 35.6 | 35.7 | 28.7 | 41.0 | 42.0 | 41.3 |
| Government non-oil revenue | 4.1 | 3.0 | 3.0 | 3.4 | 3.3 | 3.2 |
| Expenditures | 28.6 | 37.4 | 38.2 | 42.8 | 41.3 | 41.4 |
| Current expenditure | 23.5 | 28.6 | 36.6 | 34.3 | 33.5 | 33.7 |
| Wages and salaries | 13.3 | 14.6 | 20.1 | 17.8 | 17.2 | 17.0 |
| Goods and Service | 1.5 | 3.2 | 3.2 | 4.4 | 4.3 | 4.3 |
| Interest payment | 1.1 | 1.1 | 1.1 | 1.4 | 1.9 | 2.4 |
| Other | 7.6 | 9.7 | 12.2 | 10.7 | 10.2 | 10.0 |
| Investment Expenditure | 5.1 | 8.8 | 1.6 | 8.5 | 7.8 | 7.7 |
| Oil investment | 3.9 | 6.8 | 0.2 | 5.1 | 4.8 | 4.7 |
| Non-oil investment | 1.2 | 2.0 | 1.5 | 3.4 | 3.0 | 3.0 |
| Primary fiscal balance, cash basis | 12.1 | 2.4 | -5.3 | 2.9 | 5.9 | 5.6 |
| Budget balance | 11.0 | 1.3 | -6.5 | 1.5 | 4.0 | 3.2 |
| Gross budget financing needs | 9.6 | -1.5 | -9.2 | -4.1 | -1.2 | -1.7 |
| | | | In percent of GDP, unless otherwise indicated | | | |
| **Public Debt** | | | | | | |
| Total government debt (percent of GDP) | 48.6 | 44.4 | 71.6 | 55.0 | 47.4 | 42.5 |
| Total government debt (US$ billion) | 110.6 | 104.4 | 119.4 | n.a | n.a | n.a |
| External government debt (percent of GDP) | 25.9 | 23.0 | 36.9 | n.a | n.a | n.a |
| External government debt (US$ billion) | 59.0 | 54.0 | 50.7 | n.a | n.a | n.a |
| Monetary indicators | | | | | | |
| Growth in broad money | 3.9 | 4.1 | 22.9 | n.a | n.a | n.a |
| Policy interest rate (end of period) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |

*(continued on next page)*

TABLE 1 • Iraq: Selected Economic and Financial Indicators, 2018-2023 *(continued)*

| | 2018 | 2019 | 2020 | 2021e | 2022p | 2023p |
|---|---|---|---|---|---|---|
| | In percent of GDP, unless otherwise indicated | | | | | |
| **External sector** | | | | | | |
| Current account | 9.8 | 5.6 | -5.8 | 4.8 | 5.9 | 5.2 |
| Trade balance | 15.6 | 12.6 | 1.5 | 11.7 | 14.5 | 13.8 |
| Exports of goods | 38.0 | 34.7 | 28.1 | 42.5 | 43.6 | 42.9 |
| Imports of goods | 22.4 | 22.1 | 26.6 | 30.8 | 29.1 | 29.1 |
| Gross reserves (US$ billion, excl. gold) | 60.3 | 62.9 | 48.1 | 55.1 | 65.0 | 74.3 |
| In months of imports of goods and services (excl. gold) | 10.5 | 10.1 | 9.9 | 9.8 | 11.4 | 12.6 |
| Exchange rate (IQD per US$; period average) | 1183 | 1182 | 1192 | 1450 | n.a | n.a |

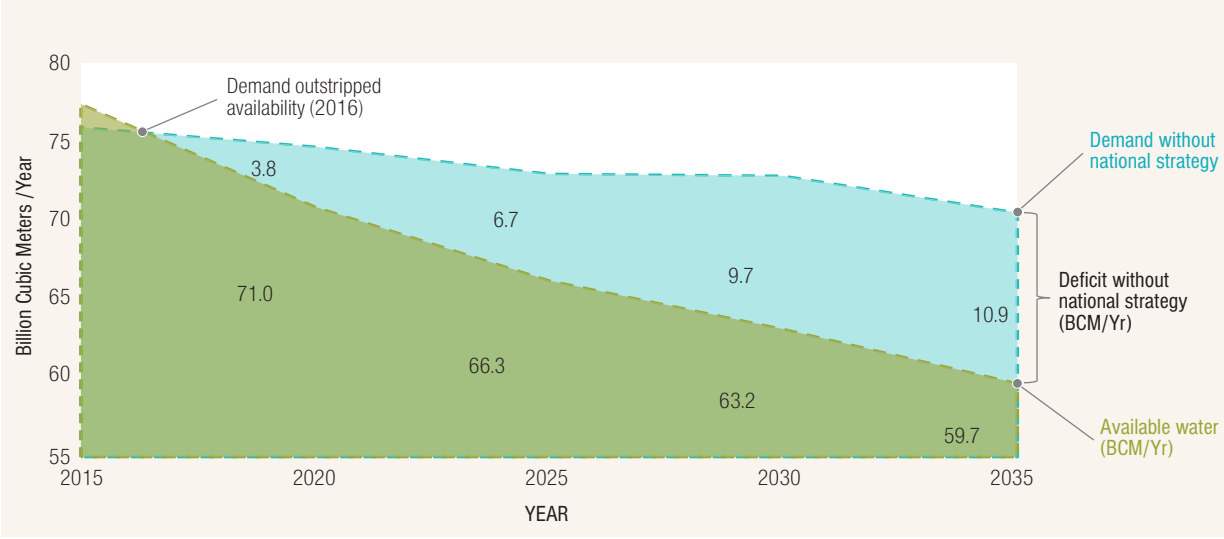
*Sources:* Iraqi authorities and World Bank staff estimates and projections.

# SPECIAL FOCUS: OVERCOMING WATER SCARCITY AND CLIMATE CHANGE IMPACTS: RESILIENCE AND INSTITUTIONAL SOLUTIONS

*Iraq is quickly running out of water and is also running down the quality if its water supply. Without policy action, the internal freshwater resources of less 16 percent in 2035 and "scarcity level" threshold—1,000 cubic meters per person per year—could have detrimental impacts on growth and job creation. This tragic situation can be avoided if Iraq immediately adopts demand management policies[20] (such as quotas, tariffs), and strengthens domestic water management institutions (including better management of dams and local governance initiatives) on the one hand and pursues regional solutions on the other (including better information sharing among riparians). Strengthening domestic water management institutions should create better conditions for private sector investment, which is necessary to defray the US$180 billion investment price tag that is needed to address water scarcity and quality challenges.*

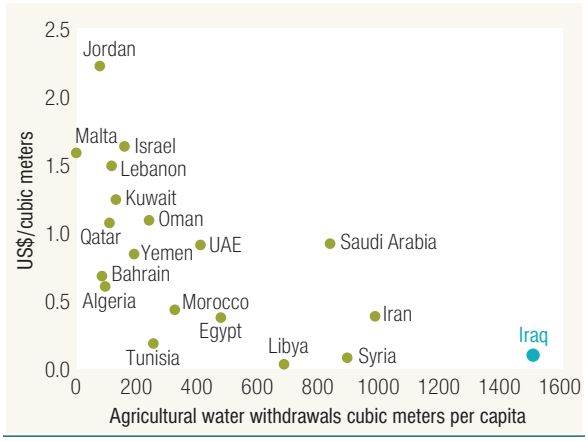
[20] The expression "water demand management policies" in this report refers to policies that affect the consumers use of water: water pricing, quotas, shifting of crops, water accounting and monitoring, use of transformative technology to support water governance monitoring and enforcement, and strategic communication.

FIGURE 18 • Supply-Demand Gap without the National Strategy (Business-as-Usual Scenario)




*Source*: Hydro Nova (2020).

FIGURE 19 • Agricultural Water Productivity (US$/m$^3$) and Per Capita Agricultural Water Withdrawals in Iraq and MENA




*Source*: World Bank (forthcoming) "Economics of Water Scarcity in MENA: Institutional Solutions"

## Setting the Context: Water Scarcity, Climate Change, and Much More…

**Back in 2015 the GoI water strategy assessed that in a business-as-usual scenario, internal freshwater resources would not meet water demand and reach scarcity levels (1,000 cubic meters per person per year) by 2035 (Figure 18).** In 2015, the Government of Iraq approved the Iraq water strategy known as SWLRI (Strategy for Water and Land Resources of Iraq or Strategy). The SWLRI shows that the renewable internal freshwater resources per capita would drop to 1,000 cubic meters per person per year water scarcity threshold in 2035. Renewable water resources within the country are under pressure from demographic growth, competing uses (agriculture, municipal water, and industries) and climate change. Withdrawals from riparian countries are increasing, to meet their needs and cope with climate change, further constraining available water resources in Iraq. By 2050, a temperature increase of 1 degree Celsius, and a precipitation decrease of 10% would cause a 20% reduction of available freshwater. Under these circumstances, nearly one-third of the irrigated land in Iraq will have no water by the year 2050. At same time, Iraq has one of the lowest water productivities in the region with the highest agricultural water withdrawal per capita (Figure 19). The SWLRI states that Iraq can avert this alarming trajectory only with significant water usage and allocation reforms within Iraq and through cooperation with riparian countries.

**In addition to water scarcity, Iraq faces the challenge of water quality degradation in its riv-**

## BOX 3 WATER AVAILABILITY ESSENTIAL TO MAINTAIN OIL PRODUCTION

Oil production remains a dominant element of Iraq's economy; however, the sector faces four major challenges moving forward, with water availability being as important as international oil market conditions, foreign investments, political stability in determining the sector's outlook (IEA 2019). Injecting water into oil formations can increase recovery factors (ratio of oil extracted to oil originally in place) and help achieve increases in production rates. Hence, water availability will be a key determinant of oil production stability and growth in Iraq in the coming decade. However, the country's binding water scarcity constraints, declining water quality and increasing competition over water mean that the oil industry can no longer uniquely rely on surface freshwater resources to meet its needs. The sector is already facing the implications of the country's water crisis. In 2018, for example, operations were curtailed at power plants and its largest oil refinery when salt levels in water were four-times higher than operable limits (IEA 2019).

Looking ahead, the International Energy Agency estimates that about 0.5 $km^3$/year (or 8 million barrels per day, equivalent to more than 1% of the country's current total water withdrawals) of water will be required by 2030 for Iraq's oil production, up from 0.3 $km^3$/year (5 million barrels per day of water) used today (IEA 2019). To meet the sector's water needs, plans were drafted in 2011 to build the Common Seawater Supply Project (CSSP) that would process seawater from the Gulf and transport it to the largest oil fields in the South to be used for injection. However, conflicts and changes in ownership have delayed this project, which is now expected to partly come online towards mid-2020s. In the meantime, oil companies are still looking for alternative water sources, such as the creation of water treatment facilities and increased recycling. Unless the oil industry pursues decisively these alternative water supply models centered around recycling of produced water (i.e., reutilization of the water injected in the fields), it will face significant challenges maintain its production targets.

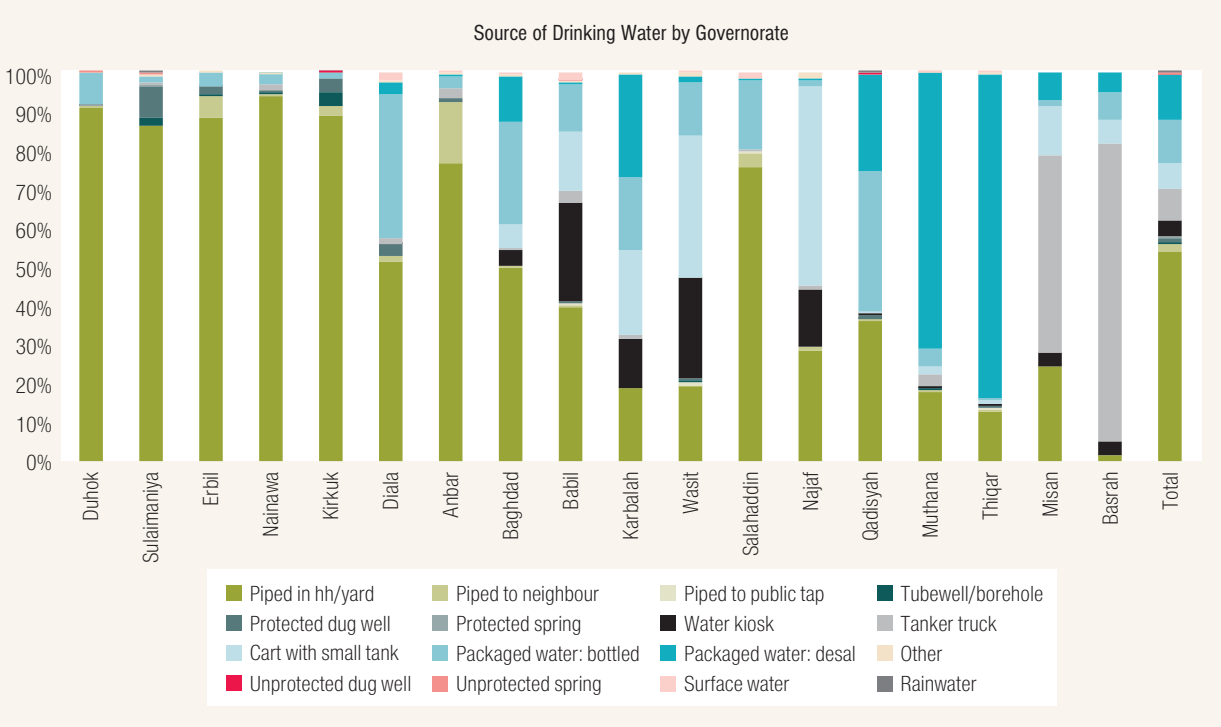
Moving forward, the oil industry will also have to pay increasing attention to water quality and pollution. The oil industry is not only a major water user, but also a source of water pollution. Oil spills and seepage from pipelines cause declines in water quality, which affect drinking water quality and public health, as recently observed along the Tigris river and in Basrah (Human Rights Watch, 2019; Mawlood et al., 2018).

**ers and its ground water**. Contaminants entering freshwater from agricultural, industrial, and municipal sources include total dissolved solids (representative of the water's salinity), organic and inorganic substances, and pathogens. Iraq is dealing with two types of water quality issues within its surface water. First is the water's salinity, and the second is pollution related to municipal, industrial (for example the oil sector see Box 3), and agricultural activities. Agricultural Development throughout the Euphrates and Tigris watershed, both outside and inside Iraq, is causing a progressive increase in the water salinity of the Euphrates, Tigris, and their major tributaries. Groundwater quality also varies across the country. The highest quality aquifers are in the northeast and groundwater salinity increases in the central, topographically lower, Mesopotamian Plain and Jazira area. Groundwater in the Mesopotamian Plain is, in general, extremely saline.

**Economic development and population growth contribute to increasing loads of various contaminants in freshwater.** Most of the soil salinization observed in central and southern Iraq stems from the use of irrigation water with high salt content. Limited drainage mechanisms and high evaporation rates cause salts to accumulate in irrigated agricultural land. Salinity along the Euphrates is more elevated than along the Tigris and its tributaries because of land management and irrigation and drainage practices within the Euphrates watershed. In a business-as-usual scenario, the SWLRI projects that poor water quality will worsen further and cause damage across several sectors, including public health, agriculture, and economic development.

**Reduction in water availability could lead to large losses across multiple sectors of the economy (GDP, labor, and crop prices) (World Bank 2020).** For example, the Water in the Balance Report (World Bank 2020) uses a computable general equilibrium model to quantify the economy-wide impacts of a 20% reduction in water availability, which would likely materialize by mid-century under a business-as-usual scenario represented in Figure 18 Supply-Demand Gap without the National Strategy (business-as-usual scenario). The economic modelling shows that real GDP in Iraq could drop by up to 4 percent, or US$6.6 billion compared to 2016 levels; and demand for unskilled labor in agricultural activities could drop by 11.8% and in non-agricultural activities by 5.4%, under a scenario of 20% reduction in water availability

FIGURE 20 • Source of Drinking Water by Governorate (2018)




*Source*: Learning Review: World Bank Water Sector Technical Assistance to Iraq FY19–21 using 2018 MICS survey.

and climate change-induced declines in crop yields. Output reduction would cause consumer price index for crops to increase by 13.9% percent and would also increase net imports for food items to over 960 Million USD.

**Aging water infrastructure is under strain to deliver water services following three decades of war, more than a decade of sanctions, and security challenges with the Islamic state.** The condition of existing infrastructure is a challenge for both the water sector and other sectors depending on water. Estimates suggest that dams, barrages, regulators, and main pumping stations rehabilitation would require over US$11 billion (Hydronova 2020). These dams and reservoirs need to be well maintained and operated, as they are essential to retaining fresh water during high flow periods that enter Iraq along the Euphrates and Tiger rivers to support year-round water needs. Irrigation and drainage infrastructure also need rehabilitation and better operation. The current state of infrastructure has led to salinity affecting approximately 60% of the cultivated land and a 30–60% reduction in yield. The use of surface flooding irrigation methods without drainage systems results in waterlogging and raises salt accumulation in topsoil. Food production faces challenges with this Iraq's cropland salinization. Currently, evaporation losses are also significant in Iraq due to high temperature, with an estimated 9 BCM water loss by evaporation from Iraq's reservoirs. Climate change will put more pressure on infrastructure, with reduced water availability and higher temperature leading to increased evaporation and demand.

**Availability of adequate water resources is increasingly a binding constraint to water supply services for cities and towns in Iraq, with the quality of water supply services getting markedly worse the further south governorates are along the Tigris and Euphrates (Figure 20).** While this binding constraint relates to both reduced quantity and quality of water resources, water quality is a bigger concern particularly the increasing salin-

ity in the south of Iraq (Hydronova 2020). In southern Iraq, critical water quality thresholds are already being exceeded, suggesting that a water quality crisis is already under way and is a major symptom of the impending water availability crisis in Figure 18 Supply-Demand Gap without the National Strategy (business-as-usual scenario). The lack of water quality is evident in the proportion of households that are opting to use non-piped water sources (i.e., those not provided by water service providers) as their main source of drinking water. In 2018, although close to 90% of households had a piped connection to a public water service provider, the proportion of households using it as the main source of drinking water had dropped to 60 percent. The piped connection use varied from the north to the south. In KRG and the northern governorates, 90% of households used the public piped source for drinking compared to just 1% in Basra in the south. The remaining 99% households resorted to purchasing water from more expensive alternatives: tanker trucks or carts (83%) or buying bottled water (16%). In 2018, in Basra, riots erupted over poor access to service when thousands of people were hospitalized because of contaminated water (HRW 2019). This deterioration in water quality has forced an increasing number of households to switch to more expensive alternative drinking water sources. Reliance on private water vendors, such as tanker trucks, carts, bottled and packaged water, is becoming increasingly prevalent across Iraq, increasing the cost of water to its people. The situation is particularly dire for the country's forcibly displaced population (Box 4).

## BOX 4 WATER SCARCITY: A DRIVER OF FORCED DISPLACEMENT AND SOURCE OF VULNERABILITY FOR THE FORCIBLY DISPLACED AND THEIR HOST COMMUNITIES

At the end of 2020, Iraq hosted more than 2 million forcibly displaced people, of which at least 618 thousand are refugees and asylum seekers and about 1.5 million are internally displaced people (UNHCR 2020). Given these high levels of displacement, it is paramount to understand the role of water in influencing human mobility and also the vulnerabilities of those that are displaced and their host communities. Here two mechanisms are examined. First, the contribution of water to forced displacement. Second, the water challenges faced by the forcibly displaced and their host communities.

Water scarcity is linked to small-scale forced displacement in Iraq. Multiple surveys of internally displaced persons (IDPs) from different years identify water scarcity as one of the key drivers of forced displacement and reasons for returning (or not) to places of origin (IOM 2012, 2019; Guiu 2020). In these surveys, water scarcity refers to both lack of water to support agriculture and livestock and lack of drinking water services. In some governorates, especially in southern Iraq, more than 25 percent of IDPs cited water scarcity as the main reason for displacement and also the main reason preventing them from returning to their place of origin (2010 survey). In a follow-up survey in 2019, the International Organization for Migration in Iraq identified 21,314 IDPs from the southern and central governorates who were displaced due to drinking water issues caused by high salinity content or waterborne diseases (IOM and Deltares 2020). Most of these individuals came from the four governorates in the south (Missan, Muthanna, Thi-Qar, and Basra).

Beyond acting as a driver of forced displacement, water plays a much bigger role as a determinant of the vulnerability of the forcibly displaced and their host communities. Across Iraq, the number of people in need of WASH assistance includes approximately 600,000 IDPs (of whom about half reside in out-of-camp locations) and 1.06 million returnees; 14,724 people in highly vulnerable host communities; and more than 100,000 refugees in nine refugee camps and out-of-camp locations (UNOCHA 2019). Of these, 317,663 people lack access to an improved water source, while 679,751 people lack access to sufficient quantities of water[a] (UNOCHA 2019).

Host communities in Iraq have also faced water challenges in relation to the influx of Syrian refugees and IDPs. A large share of the forcibly displaced population is hosted in the Kurdistan region of Iraq, where there are at least 237,000 registered Syrian refugees and more than 1 million IDPs.[b] Together, this means that the population of the Kurdistan region of Iraq (Dohuk, Erbil, Halabja, and Sulaymaniyah governorates) has increased by about 20 to 30 percent. Most refugees and IDPs live in host communities. By 2016, only a third of Syrian refugees and 20 percent of IDPs were still living in the 42 camps set up throughout the region (*Saaid 2016*). This influx of forcibly displaced persons led to increasing demand for services, affecting the provision of health, education, and social protection programs for the population in general (*WHO 2019*). Perhaps surprisingly, water supply and sanitation coverage in the Kurdistan region of Iraq has slightly increased following the forcibly displaced crisis. This suggests that the region's government and its development partners adapted quickly to improve water supply, with indicators for coverage improving since the start of the Syrian crisis.

Based on *Ebb and Flow, Volume: Water in the Shadow of Conflict in the Middle East and North Africa.* Washington, DC: World Bank.

[a] A sufficient and adequate quantity of water means at least 15 liters of safe water (from improved water sources) per day.
[b] Data from UNHCR's data portal: http://data2.unhcr.org/en/situations/syria/location/

**Economic theory dictates that where water is scarce it ought to be allocated efficiently to maximize its contribution to growth, jobs, and well-being (World Bank 2017).** Nevertheless, in water scarce countries like Iraq, water is often used less efficiently, and more intensively than in countries where it is more abundant. In doing so, less economic value-added is squeezed out of each drop of water such that high-water stress does not necessarily lead to economization on water use. One of the underlying reasons for this paradox is that very often water is not valued at adequate level for cost recovery or to reflect the scarcity of water.

## Sector Architecture and Issues

**Presently, the water sector in Iraq relies on a highly centralized institutional architecture, but there is fragmentation of responsibilities for water resources management and water services across federal ministries.** All decisions regarding governance and administration of water resources and water supply and sanitation (WSS) services lie at the center. Complications arise as these inter-linked responsibilities are fragmented between two federal ministries—the Ministry of Water Resources (MoWR) manages the "resource", while the Ministry of Public Housing, Municipalities, and Public Works (MPHMPW) manages the WSS service. There is limited dialogue between MoWR and MPHMPW at the federal level, and though they have some deconcentrated representation at the governorate level, there is not enough decision-making power or funding to better align water resources with WSS services at the local level. The top-down master-planning approach leaves little space to capitalize on the benefits of local-level decision making and increases the risks of backlash from, as well as conflict between, stakeholders engaged in competing uses.

**Consensus among governorates and across sectors is needed for managing Iraq's uneven hydrology, without which a "tragedy of the commons"[21] arises where upstream users pollute the water resources needed downstream.** The highly centralized approach to water resources management in general and difficulties in implementing the 2015 Strategy specifically exacerbate this "tragedy of the commons". For instance, the existing central command and control systems fail to win the compliance of irrigators and make monitoring and enforcement of wastewater treatment standards at the local level difficult. The burden of this inability to coordinate effectively across regional and sectoral users is borne by populations and users in downstream regions, who are forced to rely on costly alternatives in the face of deteriorating water quality.

**Although central water resource planning is still needed due to the complex hydrology, increasing local-level involvement in management of water resources could harness the benefits of local knowledge and incorporate varying local priorities.** Central water resources planning for Critical maintenance, repairs and upgrades allows managing various major dams and canals to provide minimum water flows along the Tigris and Euphrates to preserve nature, prevent further salinization, and provide downstream populations with water services. At the same time, broader stakeholder participation in water resource management, especially by governorate-level actors, could better inform resource management plans and identify water reallocations necessary to secure water needs across consumptive uses—including basic WSS services. Failure to appropriately account for local-level information may endanger downstream water needs for people, economic development, and the environment.

**The high reliance on centralized administration poses specific challenges to the efficient and sustainable provision of WSS services at local level.**

[21] A "tragedy of the common" is a situation when the collective use of a common pool resources, shared by multiple individuals results in its depletion. Such depletion arises when individual actors utilize a shared resource (e.g., ground water) only on the basis of their own individual costs and incentives but without considering how the aggregate impact of collective usage could negatively impact the availability of that resource for all (e.g., overuse leads to groundwater depletion) (Ostrom 2008).

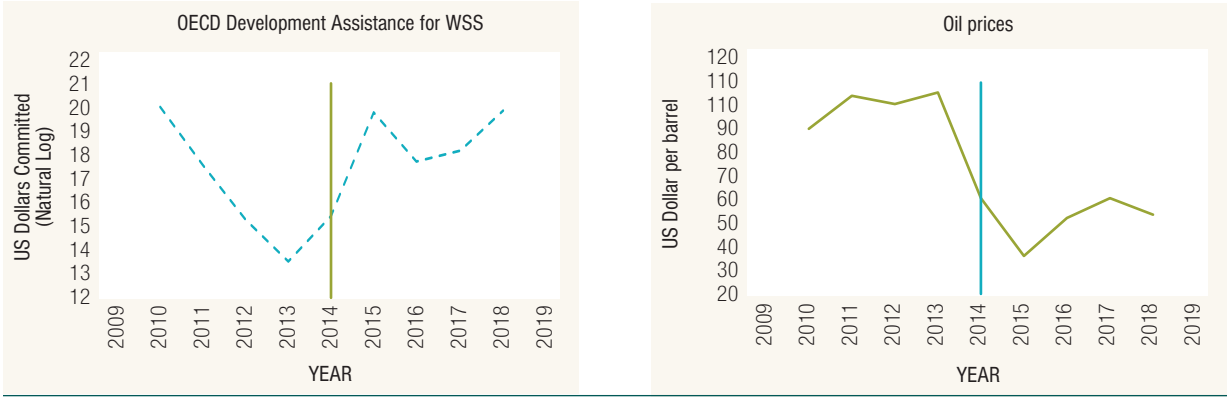
The GoI earlier had plans to devolve WSS services alongside other functions such as health and education, but in 2019 the parliament halted the devolution process and a decision on the legality of the rollback of decentralization currently rests with the Supreme Court. All WSS services in Iraq are managed centrally by the MPHMPW through a network of 265 deconcentrated municipal directorates, also responsible for other services such as solid waste management and roads. However, these Municipal directorates report directly to MPHMPW with no formal oversight or reporting link to sub-districts, districts or to governorate administrations. This centralization of WSS provision and limited communication with local-level authorities presents barriers to effective engagement with the demands and needs of end-users and on-the-ground conditions. In particular, resource allocation decisions taken at the center leave little flexibility to respond to ever-changing local contexts and situations. As discussed below, centrally determined budgets tend to omit important allocations required for operations and maintenance and also tend to be highly discretionary and volatile in the face of macroeconomic fluctuations.

## Sector financing and issues

**Much of the financing constraints faced in the water sector stem from its institutional architecture and limited revenues from customers.** Centrally determined budgets tend to be highly discretionary and volatile in the face of macroeconomic fluctuations and resource constraints arising from political instability. They also place disproportionate emphasis on allocations for capital expenditures and salaries, but omit important allocations required for operations and maintenance of infrastructure. In addition to lack of autonomy, the lack of fiscal decentralization to WSS service providers at the local level also constrains their ability to effectively serve the end-users who are their clientele. In addition, current revenues from customers are a fraction of the costs to operate and maintain WSS services.

**Implementation of SWLRI had envisioned spending US$180 billion in the sector over a 20-year period, but the financing did not materialize as expected.** The planned expenditures included: approximately US$12billion for rehabilitating and building new water infrastructures such as dams, barrages, regulators and main drains; US$13 billion for rehabilitating existing irrigation projects; US$33 billion for developing new irrigation projects; and an additional US$80 billion for investment across the municipal water sector. Based on regional experience, the latter could potentially see the involvement of private sector actors, including oil and gas companies. But these capital resources never materialized: in 2018, for example, the budget for MoWR was about US$0.015 billion—less than 0.2 percent of the planned budget. A significant decrease in the price of oil in 2015, coupled with the expensive fight against and reconstruction needed after the Islamic State insur-

FIGURE 21 • Increasing Reliance on Development Assistance for WSS Corresponds to Decreasing Oil Prices




*Source*: World Bank staff calculations based on OECD data.

gency, decimated the Iraqi budget (see Figure 21). The financial shortfall left little money for implementing the Strategy. The COVID-19 pandemic has only made the situation worse with further oil price fluctuations and a halt in water tariff collection.

**Sustainable delivery of WSS services is constrained by the O&M deficit, against a backdrop of the central government's declining ability to provide subsidies due to oil price fluctuations, fragility, and now covid.** The center subsidizes salaries of WSS employees and capital expenditures, but O&M costs of frontline service delivery departments are not accounted for. This budgeting encourages the local level to opt for new infrastructure funded by central level instead on efficiency, optimizing, and maintaining existing assets. Even in the case of capital expenditure allocations for new infrastructure, central control presents challenges. Public investment projects are executed at very low rates, are highly discretionary and are the first to be cut when oil prices decline. Hence, such capital expenditure allocations related to water require financial stability, especially given that many of these projects require multiple years to finish.

**Misalignment of information and incentives creates challenges for central ministries to plan and administer sub-national delivery of WSS services, leading to tariffs that may not reflect local water delivery costs.** Tariffs are set centrally by MPHMPW, while the staff across the 265 municipal directorates are appointed and paid directly by MPHMPW with estimates varying from 13,000 to 40,000 staff. Since 2014, municipal directorates have been allowed to retain revenue from customers, but these revenues are a fraction of what it actually costs to operate and maintain WSS services. The average tariff in 2019 was US$0.01/$m^3$. Additionally, billing of customers was suspended by central government decree in March 2020 in response to the COVID-19 health crisis.

**WSS provision in Iraq also suffers from high levels of non-revenue water, both in terms of physical losses and commercial losses.** For the Baghdad water authority (under the Mayorality of Baghdad), NRW is estimated at 53 percent—20 percent due to physical losses, and 33 percent from unauthorized consumption, metering inaccuracies, unbilled consumption. Cost-recovery for water services could be achieved through reduction in the costs (or efficiency improvements) and increasing the revenues (tariffs). Higher revenues, however, would need to be attained through tariff structures that cover operation and maintenance costs whilst ensuring vulnerable households can afford the services.

**Without action, climate change and reduced water availability will reduce GDP through a cascade of negative impacts across multiple sectors of the economy and impact more the vulnerable people.** Reduced water supply alongside changes in crop yields that will accompany climate change could reduce real GDP in Iraq by up to 4 percent, or US$6.6 billion (World Bank 2020). Output would be reduced across the economy, with the worst-hit sectors being the crops, food and industrial sector which would experience a 16, 6 and 5.5 percent loss of output. The output reduction would, in turn, cause consumer price index for crops in Iraq to increase by 13 percent and would also increase net imports for food items (see Box 5 Impact on trade balance of food products). In the Middle East, where many households are net buyers of grains and food products, any increases in crop consumer prices could increase poverty. Low-income households are particularly vulnerable because they tend to spend a high share of their incomes on staple foods (Martin and Ivanic 2016 cited in World Bank, 2020). Similar inequalities arise when considering reductions in agricultural employment, which will disproportionately hurt the poor.

**Vulnerable people are likely to suffer some of the most severe impacts of water scarcity.** Direct impacts include reduced job opportunities in agriculture, healthcare costs to addressing the health impacts of inadequate quantity and quality. Impacts can also be indirect and can be felt through food prices and human development. Higher food prices could raise poverty levels and reduce food security, because many households are net buyers of grains

and food products, and thus any increases in crop prices could increase poverty. Higher reliance on food exports without social protection can expose poor households to international food price shocks. Large impacts on agricultural production would also trigger a reduction in the demand for (low-skilled) labor in the agriculture sector, raising important distributional concerns as agricultural employment constitutes an important 18 percent of total employment in Iraq (World Bank 2020). Long-term exposure to water scarcity also accumulates into further economic losses through their impacts on the human capital formation of children and labor productivity of adults (World Bank 2017).

## Confronting Iraq's Water Situation—Demand Management, Institutional and Riparian Solutions

**Iraq water sector faces old and new water challenges requiring to complement the dialogue with riparian countries and current water supply-side policies[22] with water demand management policies, to cap or reduce water demand in the face of dwindling of water availability.** Since the 2015 SWLRI, many events have taken place (fall in oil price, Islamic state, and COVID 19 pandemic) hampering the implementation of the SWLRI. As such, the water situation of demand exceeding the supply and the water quality degradation has worsened. With the impact of climate change in Iraq and the riparian countries, added to the economic development and demographic, demand management policies must accompany supply-side policies. Water demand policies break the water demand cycle[23], the reservoir effect[24], and the paradox of water efficiency[25]. This transition to using demand management policies will contribute to securing water for uses within a financially sustainable path for the sector.

This section identifies three areas of reforms for improved water security and adapting to impact of climate change: (i) efficiency and water demand management; (ii) Institutional reform; and (iii) regional solution.

### Reform Area 1: Water efficiency, productivity, and demand management policies

**Increasing water efficiency and productivity is essential, but will only pay off with water demand management policies to cap the water use.** As water needs exceed the available water, Iraq must improve water use, including improving reservoir operations and increasing water efficiency and productivity. The water in the balance report (World Bank 2020) shows that with climate change, improvements in water use efficiency needs additional mitigation policies to deal with the adverse impacts of climate change on rainfed crop yields. However, with no effective water demand management policies in place, improvements in water use efficiency may generate rebound effects[26] in water consumption, increas-

[22] In this note, "Water supply-side policies" refer to water resource augmentation interventions including increasing storage capacity, desalination, agriculture drainage water reuse, and wastewater reuse and increasing efficiency and water productivity; reduction of non-revenue water, reduction in water leakages (distribution network, and transfers), and modernizing irrigation.

[23] The supply-demand cycles hypothesize that supply side policies can lead to counterintuitive effects. An increasing water supply can generate a higher demand, which can even aggravate water scarcity.

[24] The reservoir effect results on overreliance on water infrastructure (dams, desalination, wastewater treatment), which is associated with the expansion of water supply and a belief that the volume of water will always be available leading to reduced incentives for adaptive actions at individuals or community level to period of water shortages or droughts.

[25] Claims of water-saving potential, have focused solely on changes in the volume of water withdrawn or applied to farm fields, neglecting the volume and fate of return flow back into the original water source, creating misleading impressions of water benefits within the overall irrigation network within which water practices have been modified. This insufficient accounting leads to a water efficiency paradox, in which more efficient irrigation application can result in greater net consumptive use, ultimately lessening the volume available for subsequent use.

[26] "Rebound effects" encompasses several economic and behavior adaptation mechanisms which occur when an increase in resource-use efficiency affects the total consumption of that resource.

ing water withdrawals. Improved water accounting and monitoring are essential to detect unexpected responses to enhanced efficiency and productivity. In addition, while supply-side improvements tend to require costly capital expenditure and take time to materialize, demand management has the potential to reduce inefficiencies.

**Increasing efficiency and demand management require better valuation of water alongside regulation of water-use.** Strategic communication is needed to encourage behavior change among users to reduce consumption. In addition, tariffs for municipal and industrial uses and quotas for agriculture provide incentives for users to lower their water consumption. Finally, transformative technology (e.g., remote sensing and smart meters) allows for cheaper and faster collection and processing of information, which can help monitor users' compliance with water demand management policies and can also fill information gaps regarding water demand and supply to capture more accurately its value.

**Updating dam's operation will improve drought and flood management, which are expected to increase with climate change.** In collaboration with the riparian neighbors, Iraq should develop a real-time meteorological gage network to help forecast flood events and improve drought early warning systems. Iraq needs to update the dams' operation to accommodate floods volumes and determine the water allocations during drought events. More agile water allocation and flood and drought response mechanisms will support Iraq's investments, preserve economic development, and prevent seasonal or annual losses in the agriculture sector.

**Water reallocation[27] within and across governorates provides an additional tool for policymakers to better cope with water scarcity and climate change.** At the same time, with the water scarcity and climate change impacts, Iraq shall explore water reallocation within and among different governorates. Water resource management in Iraq will always require federal oversight because of the complex hydrology system. Water reallocation agreements are a potential tool to offer flexibility in implementing national plans at the local level. The SWLRI does not direct local water managers in determining how to use the water allocating them, which can lead to suboptimal outcomes. International experience shows that involving and empowering local water managers on water use can contribute to more efficient and effective water management. The SWLRI offers flexibility to allow for a greater role for local water managers as long as local decisions and reallocation agreements between users are made within the confines of SWLRI and allow meeting local and national priorities. While water reallocations agreements are not a stand-alone solution for Iraq's water management problems, they can provide an additional tool for policymakers to draw on within the SWLRI water balance.

## Reform Area 2: Institutional solutions

**Despite the importance of central oversight, increased stakeholder engagement and participatory decision-making would optimize water allocations across competing uses.** The inclusion of important local-level actors from across multiple sectors is necessary for effective coordination between competing uses and integrated management of water resources. For WRM, stakeholder engagement can take advantage of local level knowledge to better inform policy-decisions in identifying sectoral requirements and priority areas for any water reallocations, while ensuring a just and equitable distribution of water resources. In the case of WSS service delivery this process could improve customer satisfaction with services provided, which in turn could trigger a virtuous cycle of increasing locally generated revenue from customers. In general, increased stakeholder engagement would build trust in water sector institutions and generate users' support for and compliance to the decisions taken regarding shared water resources, arguably also setting the stage for broader-scale cooperation (World Bank (forthcoming)). Build-

[27] Water reallocation is here defined as a change to the volume, timing, location, or quality of water delivered under formal or informal water rights.

ing consensus in the water sector has the potential to catalyze cooperation and can lay the foundations for cementing a broader settlement though integrated agreements with other sectors.

**Service providers need to have a minimum degree of local-level fiscal and managerial autonomy for improving WSS service delivery.** Improving cost recovery for water supply and sanitation services at the local level will generate cash for service providers to sustain service delivery, and, in the medium to long-term, increased water sector revenue will ensure financial sustainability of the sector and attract the private sector. While other forms of funding from the center are non-discretionary, such as subsidies earmarked for staff salaries, the revenue from customers can be used to fix immediate problems; be they leaks, replacing pumps and generators or even taking commercial customers to court for non-payment. Local-level managerial autonomy is a necessary precondition for effectively mobilization of local revenues. Today the only partially autonomous WSS provider is the Baghdad Water Authority (BWA)—which itself stands to benefit from improved cost-recovery and customer-relationship management.

**Moving towards the corporatization of water supply and sanitation services could help tackle the lack of locally generated revenue from customers, which restricts the ability to operate and maintain WSS services.** Restructuring WSS services into semi-commercial corporatized entities able to recover O&M costs from users would also lay the necessary foundation for public-private partnerships and to attract private sector in both the financing and management of WSS services. A first step of corporatization would involve unbundling WSS from other municipality functions ringfencing the operations of WSS service providers. While in most countries, including within MENA, the operations of WSS service providers have been unbundled from line ministries or municipalities this is not the case in central and southern Iraq, where ringfencing the operations of WSS service providers has not yet been taken, as discussed above. The White Paper adopted by the GoI acknowledges the need to establish an independent body to regulate WSS services and proposes to restructure WSS services into semi-commercial corporatized entities able to recover the actual costs of operation and maintenance from users—in line with good international practice.

**A key benefit from moving towards corporatization of WSS services would be increased accountability of corporate entities to customers and to the service authority (government).** Improved customer relationship management (CRM) could build trust in service providers, establish a reputation for service delivery and positively impact revenue through increased collection rate. In the case of BWA, the only autonomous WSS provider, strengthening customer relationship management systems for billing and collecting the revenue was a key constraint to sustaining critical aspects of operation and maintenance. e satisfied with the quality of education and water in their area.

**Strategic communications and ensuring availability of reliable data and information is fundamental for effective stakeholder engagement, customer relationship management and improved service delivery.** Transparent information sharing and communications campaigns underpin the social contract that exists between the governed and the governors. Such transparency can win compliance from multiple actors in the water sector by building trust and legitimacy for decisions taken regarding water sector allocations and cost-recovery efforts in service provision (municipal water, and irrigation). One of the most powerful outcomes of information disclosure is its ability to catalyze pro-social behaviors and create the support needed for policy improvements, such as the need to charge tariffs to meet costs of service delivery or quotas. Well-functioning data collection and information systems are also essential to monitoring water use and the condition of existing infrastructure, and would ensure timely responses, effective management and reduction in losses in the water sector.

## Reform Area 3: Regional solutions

**A large share of Iraq's freshwater resources originates from outside its borders, making dialogue with its neighbors important.** The high level of water

dependency (more than 60% of Iraq's freshwater comes from neighboring Turkey, Syria and Iran) underscores the need for a regional approach, especially in light of increasing water demands and climate change. The World Bank's Water in the Balance Report (2020) highlights the significant benefits of a more cooperative approach towards water infrastructure development and freshwater resources management. In Iraq, a 20% reduction in water supply with changes in crop yields that will accompany climate change could reduce real GDP in Iraq by up to 4 percent, or US$6.6 billion compared to 2016 levels; and a drop by 11.8% of the demand for unskilled labor in agricultural by 5.4% of the demand for nonagricultural activities. Output reduction would cause consumer price index for crops to increase by 13.9% percent and would also increase net imports for food items to over US$960 Million. A regional dialogue focusing on the broader basked of benefits that can be derived from cooperative management of water, as well as increased trade would benefit Iraq and the region.

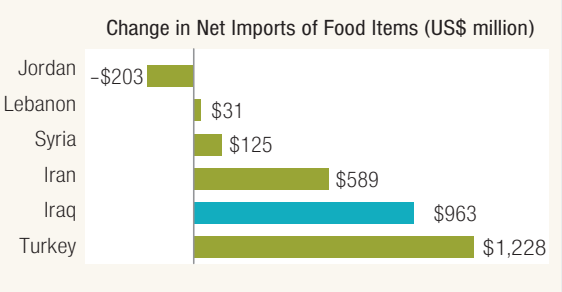
**The impacts of water scarcity can ripple through national economies to affect topics of regional importance such as trade and labor markets.** For example, economic modelling suggests that an increase in water scarcity would lead to increased food import in Iraq, and also neighboring countries (Box 5 Impact on trade balance of food products). Therefore, water scarcity should not be considered in isolation from its broader ramifications on opportunities and risks for regional economic development and integration. For example, efficient water management can contribute to a more productive, export-oriented agricultural sector while mitigating the impacts of water scarcity. For an upstream country, this means growing more food while using less water, making the water available for downstream countries. Moving forward, there is a need to build on ongoing efforts to further the debate on how the regional water scarcity challenge can be turned into an opportunity for greater cooperation over transboundary water resources and beyond.

**Regional solutions include increased information sharing between the countries, both on quantity as well as on water quality.** More coordinated management and operation of water infrastructure on shared river systems can mitigate the impacts of droughts and floods on downstream countries and help improve the management of evaporative losses. Information sharing and the development of monitoring and early warning systems all promote the cooperative operation of water infrastructure, allowing for better decisions to be made to protect and benefit the environment, economies, and communities within the basin. In addition, as water quality generally deteriorates downstream, as more pollution sources contaminate the river, improved coordination and sharing of information can also be a powerful to help address this challenge.

## BOX 5 IMPACT ON TRADE BALANCE OF FOOD PRODUCTS

In general, a reduction in water supply increases the net imports of food items across the region. The larger the reduction in water supply, the higher the increase in net imports. As water scarcity hits Iraq, the country will face a higher food bill. Other neighboring countries, including Iran, Syria and Turkey, are also expected to import more food in an increasingly water scarce world. The exception is Jordan, which experiences fewer net imports (or more net exports) as the level of water scarcity increases. This is because Jordan might export more valuable food products to neighboring countries as the severity of water scarcity grows in the entire region and imports less valuable products from the world market. Improvements in water-use efficiency can partially eliminate a small portion of the increases in net imports of food items.

FIGURE B5.1 • Water Scarcity Leads to a Higher Food Bill




*Source*: World Bank 2020.

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