The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with almost 300 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series of conferences.

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www.gsmaintelligence.com
info@gsmaintelligence.com

This report was authored by
Barbara Arose Lucini, Senior Analyst
Kalvin Bahia, Senior Economist

Mobile for Development brings together our mobile operator members, the wider mobile industry and the development community to drive commercial mobile services for underserved people in emerging markets. We identify opportunities for social and economic impact and stimulate the development of scalable, life-enhancing mobile services.

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## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive summary</td>
<td>2</td>
</tr>
<tr>
<td>1 Côte d'Ivoire as a digital society</td>
<td>6</td>
</tr>
<tr>
<td>2 Introducing the UN Sustainable Development Goals</td>
<td>10</td>
</tr>
<tr>
<td>3 Sustainable development ambition in Côte d'Ivoire</td>
<td>14</td>
</tr>
<tr>
<td>Mobile connectivity</td>
<td>18</td>
</tr>
<tr>
<td>Digital identity</td>
<td>23</td>
</tr>
<tr>
<td>Mobile financial services</td>
<td>26</td>
</tr>
<tr>
<td>M2M and IoT</td>
<td>30</td>
</tr>
<tr>
<td>Accelerating the impact of mobile on the SDGs</td>
<td>32</td>
</tr>
<tr>
<td>4 Opportunities for public-private collaboration</td>
<td>36</td>
</tr>
<tr>
<td>Appendix A: Impact of the mobile industry on SDGs</td>
<td>38</td>
</tr>
<tr>
<td>Appendix B: SDG benchmarks for Côte d'Ivoire</td>
<td>48</td>
</tr>
</tbody>
</table>
Executive summary
Mobile industry and government together supporting social and economic progress

Since the government granted the first mobile licence in Côte d’Ivoire in 1996, the mobile industry has contributed to enormous change across the country. In 2005, only 11% of people subscribed to a mobile service, but within 10 years the unique subscriber rate had increased to 53%, enabling more than half the population to connect with friends and family and to do business better. A key driver for the increase in subscriber penetration was the launch of 3G services in 2012. In 2010, only 3% of the population in Côte d’Ivoire had internet access; within five years, almost a quarter of the population could use the internet via mobile, one of the highest penetration rates in West Africa.\(^1\)

In less than 10 years industry innovation and government collaboration have also powered the shift from inadequate financial infrastructure to digital financial services. There were 9.8 million mobile money accounts in the country in 2015.\(^2\) With more than a quarter of adults using mobile money, according to Findex 2014 data, Côte d’Ivoire has the fifth highest penetration rate in the world and the highest in West Africa.\(^3\)

The last few years have seen Côte d’Ivoire benefiting from strong economic growth, with GDP growth remaining steady at above 8%, supported by strong exports in cocoa and palm oil.\(^4\) The elections held in October 2015 secured a second term for President Ouattara. Two months later, the government launched the National Development Plan (NDP) 2016–2020, focusing on enabling socioeconomic progress in Côte d’Ivoire by reducing poverty, improving inequality, increasing agricultural output and promoting the manufacturing sector.

Mobile helping achieve the UN SDGs

Several of the programmes within the NDP are aligned with the UN Sustainable Development Goals (SDGs) which were adopted by Côte d’Ivoire, as well as all other 192 member states, in September 2015. A significant undertaking is required by both the public and private sectors for Côte d’Ivoire to achieve its targets across the SDGs. The mobile industry – the first to come together and make a commitment to the goals – has a critical role to play in helping the country achieve its ambitions. We have identified four areas where the mobile industry’s activities can help accomplish the SDGs and support the continued development of Côte d’Ivoire: mobile connectivity (voice, SMS and internet), digital identity, mobile financial services and machine-to-machine (M2M)/Internet of Things (IoT).

The provision of mobile connectivity affects all 17 SDGs. For example, it reduces the costs of accessing information and can create or expand markets by enabling the mechanisms for buyers and sellers to discover each other and conduct transactions, driving more inclusive growth. Another example is the use of mobile for emergency calls and broadcasting, which can play a critical role in the response to and management of natural and man-made disasters. Additionally, mobile services enable users to access essential information such as health advice and educational tools.

To maximise the impact of mobile technology on the SDGs, it is important to increase take-up of both voice and mobile internet among the unconnected. One of the key barriers to the adoption of mobile services, especially mobile internet, is affordability, particularly for low-income groups and women. Government policy can help via taxation; taxes on devices were reduced in 2015, and similar initiatives can help reduce the cost of mobile ownership. Mobile operators can also play a role by continuing to develop pricing structures and payment models that align with the needs and ability to pay of those on the lowest incomes.

Mobile operators can also facilitate the provision of digital forms of identity underpinning access to core public services and financial services that are relevant to many SDGs, including 1 – No poverty, 5 – Gender Equality, 8 – Decent work and economic growth, and 16 – Peace, justice and strong institutions. Working

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\(^1\) GSMA Intelligence
\(^2\) BCEAO
\(^3\) World Bank (Findex 2014)
\(^4\) World Bank
closely with local authorities, mobile operators are already providing mobile birth registration in remote and rural areas of the country. Many types of identity card are accepted as proof of ID in Côte d’Ivoire; in order to accelerate impact and to support its e-government goals, the government could work closely with mobile operators to reduce fragmentation in the identity ecosystem to implement digital identity services and provide access to e-services such as healthcare and social welfare.

The provision of mobile financial services, launched in 2008 in Côte d’Ivoire, is relevant to the majority of the SDGs. Mobile operators and the government have already successfully collaborated to digitise school registration fees using mobile money. In 2015, 99% of secondary school fee payments were made digitally, 94% of which were via mobile money. Mobile money is also increasingly being used by individuals for domestic and international remittances. Using mobile money is, on average, more than 50% cheaper than using global money transfer operators, and is particularly competitive for low-value transactions.

Potential areas for further collaboration between the government and mobile money operators include social security contributions and disbursements, health insurance contributions and disbursements, digitisation of agricultural value chains and transportation payments.

Lastly, mobile operators can offer IoT solutions to bring social, economic and environmental benefits to the whole country. Although IoT technologies are nascent in Côte d’Ivoire (and most other countries), they have the potential to be of benefit to a number of SDGs. For example, IoT and sensor technology can contribute significantly to improved agricultural outputs, improved energy and water efficiency through smart meters and increased productivity for cities, businesses and individuals.

Closer collaboration between the Ivorian mobile industry and the various line ministries of its government offers a strong opportunity to support Côte d’Ivoire’s social and economic progress.

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5 Paying school fees with mobile money in Côte d’Ivoire: A public-private partnership to achieve greater efficiency. GSMA, September 2015
6 Driving a price revolution: Mobile money in international remittances. GSMA, October 2016
Côte d’Ivoire as a digital society
Digital technology in Côte d’Ivoire is evolving rapidly, leading to the emergence of new services and applications that are transforming the way people live, work, play and communicate. The large-scale societal adoption and use of digital technologies, particularly via mobile, is a key driver of measurable economic, social and cultural value, including increased productivity and employment, improved security and greater capacity to tackle social and environmental issues.

In 2005, only one in 10 people in Côte d’Ivoire subscribed to a mobile service. Within 10 years this had increased to more than half the population. In 2010, the vast majority of people in Côte d’Ivoire had no internet access, but within five years almost a quarter of the population were using the internet via mobile, one of the highest rates in West Africa. By contrast, only 3% of the population have access to a fixed broadband connection and only 7% have access to a fixed telephone line. In 2020, GSMA Intelligence forecasts almost half the population will use mobile internet services.

Such digital transformation has had a significant positive impact on economic development. ICT accounts for 8% of Côte d’Ivoire’s GDP and employs more than 150,000 people. It also contributes XOF300 million to the government budget. The regulator, Autorité de Régulation des Télécommunications de Côte d’Ivoire (ARTCI), is aiming to increase the GDP contribution to 15% by 2020, an ambition that demonstrates the importance of the sector to the country’s economy.

Note: penetration measured as percentage of population; smartphone adoption measured as share of connections

8 ARTCI
9 “Côte d’Ivoire téléphonie mobile: L’Etat retire définitivement les licences de GreenN et Comium-KOZ”, Connectionivoirienne, April 2016
Mobile technology has also driven significant progress in financial inclusion. While 15% of the adult population have an account at a formal financial institution, around a quarter have a mobile money account, by far the highest penetration rate in West Africa and the fifth highest in the world, according to Findex 2014 data. This allows households to make and receive payments and transfers much more easily, and allows agricultural producers, particularly small-scale farmers, to replace inefficient cash payments with digital payments. It has also made the payment of secondary school fees much easier. In 2011, 60% of school registration fee payments were made digitally, of which 3% were via mobile money. By 2015, 99% of school registration fee payments were made digitally, 94% of which were via mobile money.¹⁰

Source: World Bank Findex

Mobile money accounts in West Africa, 2014

Mobile technology is also revolutionising the delivery of healthcare and agricultural services. Platforms have been developed that enable doctors and health professionals to communicate directly with patients through voice calls and SMS, significantly benefitting rural communities that would otherwise have to travel long distances to receive such services. Mobile platforms have also been used to provide farmers and agricultural firms with up-to-date information on market prices, production techniques and weather. Such mAgri services currently have almost half a million users in Côte d’Ivoire.¹¹

The government of Côte d’Ivoire has a vision to create a prosperous country that benefits all its inhabitants, especially for the least privileged and most vulnerable. This is in line with its commitment to the UN Sustainable Development Goals. The mobile industry can continue to drive digital transformation in Côte d’Ivoire and help both the government and the population achieve their commitments under the SDGs.

¹⁰ Paying school fees with mobile money in Côte d’Ivoire: A public-private partnership to achieve greater efficiency, GSMA, September 2015
¹¹ GSMA Intelligence
Côte d’Ivoire: key facts

**Total population**
23 million

**Political capital**
Yamoussoukro

**Economic capital**
Abidjan

**Official language**
French

**Land area**
322,463 sq km

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- **Source:** World Bank, UN, GSMA Intelligence

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- **Yamoussoukro**
- **Abidjan**
- **Total population:** 23 million
- **Official language:** French
- **Land area:** 322,463 sq km

---

- **Location split:**
  - Rural: 46%
  - Urban: 54%

- **Gender split:**
  - Male: 51%
  - Female: 49%

- **Population split:**
  - 0-14 year-olds: 42%
  - 15-24 year-olds: 20%
  - 25-64 year-olds: 34%
  - 65+ year-olds: 3%

---

- **Labour force participation rate:**
  - Male: 53%
  - Female: 30%
  - Total: 41%

- **Literacy rates:**
  - Male: 52%
  - Female: 30%
  - Total: 41%

- **Unemployment:**
  - Male: 4.1%
  - Female: 3.7%
  - Total: 4.0%

---

- **GDP growth:**
  - Côte d’Ivoire: 9%
  - Sub-Saharan Africa: 6%

---

- **GDP per capita PPP:**
  - SSA average: $3,712
  - Côte d’Ivoire: $3,514

- **Lower middle income**
Introducing the UN Sustainable Development Goals
On 25 September 2015, Côte d’Ivoire joined the other 192 UN member states in adopting 17 Sustainable Development Goals (SDGs) seeking to end poverty, protect the planet and ensure prosperity for all. This high-level ambition is made specific by the 169 targets that sit behind the SDGs and provide greater direction, quantification and timing for each goal. The intention is to meet all the targets by 2030, with some requiring earlier attainment.

The mobile industry was the first to come together and make a commitment to sustainable development and the goals. As part of this commitment the GSMA has started to assess how mobile technology contributes to the SDGs. The first report was launched at the UN Private Sector Forum in September 2016 and provided a framework to assess the industry’s impact on the SDGs.

All SDGs are affected by the mobile industry to varying degrees. Basic voice connectivity offers many societal, economic and environmental benefits, and upgrading to mobile broadband, to smartphones, and further to M2M and IoT, together with rapid digital transformation, creates a significant opportunity for the industry to support governments in meeting their SDG commitments.
Table 1 shows which SDGs are impacted by each category. Further details are provided in Appendix A.\(^\text{12}\)

<table>
<thead>
<tr>
<th>Sustainable Development Goal</th>
<th>Mobile connectivity</th>
<th>Digital identity</th>
<th>Mobile financial services</th>
<th>M2M and IoT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 No poverty</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Zero hunger</td>
<td></td>
<td></td>
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<tr>
<td>3 Good health and well-being</td>
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<tr>
<td>4 Quality education</td>
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<tr>
<td>5 Gender equality</td>
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<tr>
<td>6 Clean water and sanitation</td>
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<td></td>
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<tr>
<td>7 Affordable and clean energy</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8 Decent work and economic growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Industry, innovation and infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Reduced inequalities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Sustainable cities and communities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Responsible consumption and production</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>13 Climate action</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>14 Life below water</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15 Life on land</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Peace, justice and strong institutions</td>
<td></td>
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<td></td>
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<tr>
<td>17 Partnerships for the goals</td>
<td></td>
<td></td>
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</tbody>
</table>

Source: GSMA

A full assessment of the mobile industry’s contribution to the SDGs can be found in the GSMA report: [2016 Mobile Industry Impact Report: Sustainable Development Goals](#).
Introducing the UN Sustainable Development Goals

COUNTRY OVERVIEW: CÔTE D'IVOIRE
Sustainable development ambition in Côte d’Ivoire
Following two civil wars (2002–2007 and 2010–2011), Côte d’Ivoire has experienced solid economic growth, yet important challenges remain related to the SDGs. In December 2015, the government adopted the National Development Plan (NDP) 2016–2020 with the aim of making Côte d’Ivoire an emerging country with a strong industrial base, reducing poverty and better distributing the fruits of growth, particularly for the least privileged and most vulnerable. The NDP calls for an increase in agricultural output, promotion of the manufacturing sector and improvement in living standards. The total cost of the project is expected to be $50 billion. The plan is based on five pillars:

**Enhancing the quality of governance and institutions.** In 2012, an e-government programme was launched connecting 52 ministries and public institutions to facilitate better coordination between government entities. As part of the NDP, three e-government programme goals were announced for the medium to long term: assigning a single identifier to each user to ease administrative follow-up, achieving paperless administration, and providing public servants with a database to centralise administrative documents such as birth certificates and diplomas.

**Accelerating the structural transformation of the economy through industrialisation.** The government has put forward a plan for a transition in the agro-alimentary sector geared towards improving the production processes of raw materials and diversification of the economy through promotion of manufacturing.

**Developing infrastructure across the economy, while protecting the environment.** Efforts will be dedicated to improving access to electricity and water, particularly in rural areas.

**Accelerating the development of human capital and social welfare.** The NDP places a strong emphasis on education as a means to reduce poverty and inequality, and is expanding the public schooling network. In 2016, the government of Côte d’Ivoire introduced mandatory public schooling up to the age of 16 and has committed more resources to new schools, higher education and vocational training. Particular attention will be paid to addressing gender disparities, with increased investment in education targeting the female population. Additionally, the government is dedicating increasing resources to improving access to healthcare and the quality of public healthcare infrastructure – for instance, it will build approximately 15 hospitals in the period to 2020.

**Strengthening regional integration and international cooperation.** The government aims to continue to promote and strengthen regional and international cooperation, and increase the influence of Côte d’Ivoire. It is well placed to do so given its membership in organisations such as ECOWAS and WAEMU.
In Table 2, we benchmark some of the indicators for the SDGs that relate to the NDP and which have been prioritised by the United Nations Development Programme in Côte d’Ivoire. Due to issues around data availability and the fact that complete and up-to-date SDG data has not been compiled for most countries (including Côte d’Ivoire), it is not possible to assess every individual target for any of the SDGs. However, the analysis provides an indication of where Côte d’Ivoire currently is on key aspects of eight of the SDGs. This will allow both the Côte d’Ivoire government and the mobile industry to assess progress and impact in the coming years.

Further detail and analysis on the indicators, including comparisons with other countries in West Africa, can be found in Appendix B.

Source: UN Statistics, World Bank, Institut National de la Statistique (INS).

### Progress on SDGs in Côte d’Ivoire

<table>
<thead>
<tr>
<th>SDG</th>
<th>Indicator</th>
<th>Target</th>
<th>Value in Côte d’Ivoire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 No poverty</td>
<td>Proportion of population in poverty according to national definition</td>
<td>Reduce by at least half by 2030</td>
<td>46%</td>
</tr>
<tr>
<td>2 Zero hunger</td>
<td>Prevalence of undernourishment (% of population)</td>
<td>Eliminate by 2030</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Prevalence of moderate or severe food insecurity (% of population)</td>
<td>Eliminate by 2030</td>
<td>52%</td>
</tr>
<tr>
<td>3 Good health and well-being</td>
<td>Maternal mortality ratio (per 100,000 live births)</td>
<td>Reduce to less than 70 by 2030</td>
<td>645</td>
</tr>
<tr>
<td></td>
<td>Under-five mortality rate (per 1,000 live births)</td>
<td>Reduce to less than 25 by 2030</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Tuberculosis incidence (per 1,000 population)</td>
<td>Eliminate by 2030</td>
<td>165</td>
</tr>
<tr>
<td></td>
<td>Malaria incidence (per 1,000 population)</td>
<td>Eliminate by 2030</td>
<td>385</td>
</tr>
<tr>
<td>4 Quality education</td>
<td>Proportion of pupils with minimum proficiency in maths</td>
<td>100% by 2030</td>
<td>71%</td>
</tr>
<tr>
<td></td>
<td>Proportion of pupils with minimum proficiency in reading</td>
<td>100% by 2030</td>
<td>55%</td>
</tr>
</tbody>
</table>
### Gender equality
- **Gender parity index for literacy**: No target but a value of 1 indicates equality
  - Value: 0.61
- **Gender parity index for school life expectancy**: No target but a value of 1 indicates equality
  - Value: 0.79
- **Gender parity index for income**: No target but a value of 1 indicates equality
  - Value: 0.52

### Clean water and sanitation
- **Proportion of population using safely managed drinking water services**: 100% by 2030
  - Value: 82%
- **Proportion of population using safely managed sanitation service**: 100% by 2030
  - Value: 22%

### Affordable and clean energy
- **Proportion of population with access to electricity**: 100% by 2030
  - Value: 56%
- **Proportion of population with primary reliance on clean fuels and technology**: 100% by 2030
  - Value: 19%

### Reduced inequalities
- **Proportion of income share of bottom 40%**: No target, but 40% would mean equality
  - Value: 15%
- **Gini coefficient**: No target but 0 is perfect equality. Countries with high equality have values between 20 and 30
  - Value: 43

For more detail on how each of these categories impacts the SDGs, see Appendix A.
Mobile connectivity

Impact on SDGs

The mobile industry’s core mission is to provide connectivity. The provision of voice, SMS and data connectivity impacts all 17 SDGs. For example, mobile connectivity reduces the costs of accessing information and can create or expand markets by enabling the mechanisms for buyers and sellers to discover each other and conduct transactions, driving more inclusive growth. This is particularly relevant to SDGs 1 – No poverty, 5 – Gender equality, 8 – Decent work and economic growth, 9 – Industry, innovation and infrastructure, and 10 – Reduced inequalities.

Another example is the use of mobile for emergency calls and broadcasting, which can play a critical role in the response to and management of natural and man-made disasters, which is relevant to SDGs 1 – No poverty, 2 – Zero hunger, 3 – Good health and well-being, 11 – Sustainable cities and communities, and 13 – Climate action. Additionally, mobile services enable users to access essential information such as health advice and educational tools, key to SDGs 3 – Good health and well-being and 4 – Quality education.

Mobile connectivity – SDG case studies from Africa

Inclusive growth with SOKO

SOKO is an e-commerce platform that enables independent artisan entrepreneurs in the developing world to access the global market via mobile. Artisans can submit their entry form, vendor profile and images of their products via SMS, and their products are then sold on the SOKO website. Based in Kenya, SOKO was launched in 2009 and currently operates in 30 countries. It has connected more than 1,000 artisans to the international market.

Mobile healthcare application in Nigeria

In an effort to reduce infant and maternal mortality in Nigeria, in 2014, mobile operator Airtel partnered with Grameen Foundation and VAS2Nets Technologies Ltd to launch Mobile Midwife. This service delivers voice messages containing important health information for pregnant women and new mothers in their local language. Additionally, Airtel launched the Dial-a-Doctor service, providing real-time help to pregnant women or mothers with children under five years old.

MTN reconnecting refugees in Rwanda and Burundi

In April 2015, as thousands of refugees began fleeing pre-election tension in Burundi, the Rwandan government established a new refugee camp on the border between the two countries. During the displacement process, many people were separated from their families. MTN Rwanda worked with the International Committee of the Red Cross (ICRC) to provide communication services to refugees. The service was free at sites in the refugee camps and aimed to reconnect family members who were still in Burundi. Over 13,000 phone calls were made in the first two months of the service, with more than 8,550 calls resulting in restored family contacts and/or exchange of family news. To enable Burundi refugees to use their own phones, MTN Rwanda has provided 10,000 SIM cards, each pre-loaded with RWF500 of airtime. MTN has also provided personnel to register and activate the SIM cards.

13 GSMA members focus attention on crisis and disaster response, GSMA, October 2015
Mobile connectivity in Côte d’Ivoire

The Côte d’Ivoire mobile market comprises Orange (48% market share), MTN (30%) and Moov (22%), with an additional LTE-only operator – YooMee. In Q2 2016 regulator ARTCI revoked the licences to some of the smaller players, namely Koz, Green Network, Warid Telecom and Cafe Mobile. Later that year, the fourth mobile licence was awarded to the Libyan Post, Telecommunications & Information Technology Company (LPTIC).

Source: operator websites, GSMA Intelligence

Côte d’Ivoire mobile market: milestones

1996
• Mobile services launched in Côte d’Ivoire
• Orange launches under the Ivoiris brand.

2005
• Moov launches services
• MTN Group acquires 51% of Loteny Telecom
• ORICEL awarded a licence

2006
• Warid Telecom awarded a licence

2007
• Comium Côte d’Ivoire Limited is founded

2008
• Green Network Côte d’Ivoire launches

2012
• First 3G licence awarded to MTN
• Cafe Mobile (Aircom) launches services
• First phase of national broadband network (NBN) launched

2013
• Second phase of NBN launched (south-east with north-east)

2014
• YooMee (wireless internet provider) launches

2015
• Maroc Telecom acquires Moov from Etisalat

2016
• Orange and MTN launch 4G services
• Universal licences awarded to all operators
• Third phase of NBN launched

2016
• ARTCI revokes Comium (Koz), Green Network, Warid Telecom and Cafe Mobile licences
• LPTIC awarded mobile licence

2017
• Orange completes merger with fixed operator Côte d’Ivoire Telecom (CI-Telecom)
Côte d’Ivoire is mainly a prepaid market and has one of the highest multi-SIM usage rates in the world; subscribers have an average of more than two SIM cards. Mobile connections penetration in 2016 was 122%. Unique subscriber penetration was 53% at the end of 2016; this increases to 85% among just the adult population.\textsuperscript{15}

Since the launch of 3G services in 2012, mobile internet subscribers increased at an annual rate of 54% to 2016. Two years after 3G services were launched, mobile internet subscribers on 3G networks overtook the number of subscribers on 2G. Through operator investments, 3G population coverage was 76% at the end of 2016 and is expected to grow to 90% by 2020. Orange and MTN launched 4G services at the beginning of 2016, and the uptake of 4G is expected to grow rapidly up to 2020 – at a CAGR of 70% between 2016 and 2020, with 4G population coverage growing to 53% in 2020, up from 8% in 2016.

\begin{center}
\textbf{Mobile internet subscribers in West Africa}
\end{center}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{mobile-internet-subscribers.png}
\end{figure}

Smartphone adoption in Côte d’Ivoire has also been increasing in recent years at a CAGR of 35% between 2012 and 2016, reaching 27% of connections. This is expected to increase to more than half of connections by 2020.
Mobile connectivity – case studies from Côte d’Ivoire

One Citizen, One Computer, One Internet Connection

To increase the digital maturity of Côte d’Ivoire, in 2015 the government launched the ‘One Citizen, One Computer, One Internet Connection’ programme. The government aims to reach 500,000 households in five years with this programme. All the country’s mobile operators are involved in the project. One of the initiatives within this is ‘one student, one computer, one internet connection, one printer’. This allows students who do not have access to credit to buy warrantied equipment, have internet access and pay in instalments at rates subsidised by the government. Payments can be made via mobile money. According to government sources, a computer bought through this initiative will cost around €100, compared to between €300 and €400 at a retailer. Other initiatives target particular groups such as women, journalists and government workers.

mHealth

In 2016, Orange launched the platform Mobile Training EveryWhere (M-Tew), which enables doctors and other health professionals to communicate directly with their patients, through SMS, phone calls or voice messages. This platform has been launched as a pilot in Abidjan, in partnership with UNAIDS.

mAgri

In 2014, Orange Côte d’Ivoire launched the platform m-Agri, with the support of Anacarde, to help more than 12 agricultural sectors improve their revenues, access up-to-date information on market trends, techniques and weather forecasts, and strengthen the overall agricultural value chain.

Gender equality

In 2014, Moov launched Weena, an initiative that aims to encourage entrepreneurship and financial autonomy for women. Women from associations and cooperatives across 20 regions in the country were targeted. On joining Weena, women start a savings plan for themselves and for the community they belong to; savings are accumulated in an individual mobile money account and another savings account is created for the whole community. The community savings account is then used to finance community projects.

In 2016, Orange Côte d’Ivoire launched the initiative She Is The Code, which aims to provide unemployed women with work opportunities by offering four months’ numeracy training as well as free IT equipment. Additionally, since February 2016, and following the Orange Foundation Villages Programme, Orange Côte d’Ivoire has opened five Digital Centres to serve 1,000 women with entrepreneurial goals. The IT equipment available in the centres will give them access to a range of training options (literacy, basic IT and financial education) and help them along the road to financial independence.

Economic growth and innovation

In 2015, Moov launched Cyberlab with the aim of training for free 4,500 young Ivorians to deepen their knowledge of ICT, help them master digital tools and allow them to lead and develop economic activities on the internet.

In 2016, Orange Côte d’Ivoire, Simplon and the Life Builders Foundation launched the Bouaké Bootcamp, providing digital and leadership training for 20 young entrepreneurs. Additionally, in 2014 Orange launched a start-up accelerator in Côte d’Ivoire, Orange Fab, with the aim of integrating start-up solutions with Orange platforms to facilitate the delivery of services to customers. This accelerator integrates about four start-ups per year, which receive expert advice and financial support (XOF10 million or $16,000).
Mobile connectivity – case studies from Côte d’Ivoire continued

Education and digital literacy

In 2016 MTN Côte d’Ivoire launched its multimedia platform Easyteach, facilitating teaching, learning and coaching for students. Delivered through software installed on a tablet as well as via an online portal, the platform offers tools and information to support lesson preparation; stores homework, tests and exams; and enables alerts for assessment dates and messages to parents. The online portal offers a separate area for teachers, and enables parents to track their child’s attendance and performance at school.

The MTN Foundation offers free educational materials supporting the school curriculum through its Succès Assuré website. It offers subject support from primary to secondary level, accessible via computer, tablet or smartphone. Through its Génération Numérique Programme, the MTN Foundation has equipped more than 114 multimedia rooms in schools and colleges, improving access to ICT for more than 300,000 students.

Orange offers modules for learning English, which are available on all types of mobile phone through USSD technology. Since 2015, Orange has also offered Introductions to Coding for more than 200 children in Côte d’Ivoire. Additionally, Orange has set up cyber-centres in Abidjan and other cities, offering free equipment and internet access to local schools. Orange employees can mentor students and support them with internship opportunities. Since 2014, Orange has sold the Qelasy tablet through its distribution network. With Qelasy, Orange aims to offer affordable education solutions to students; the tablet is available at around €150. This has been possible partly as a result of the commitment from the government to remove taxation on tablets between 2015 and 2018. Lastly, the Ministry of Higher Education has worked with Orange to launch a virtual university, offering online teaching and content.
Digital identity

Impact on the SDGs

In addition to providing connectivity, mobile can facilitate the provision of digital forms of identity, which underpin core public services (e.g. healthcare and social welfare), financial services and ownership rights (of land, for example). This supports SDGs 1 – No poverty, 8 – Decent work and economic growth, and 16 – Peace, justice and strong institutions. Digital identity via mobile can also reduce gender inequalities, for example by reducing barriers to women accessing financial services (by allowing them to open a mobile money account).

Digital identity – SDG case studies from Africa

Mobile birth registration in Tanzania

The Births and Deaths Registration Act (2002) and the Law of the Child Act (2009) recognise every Tanzanian child’s right to a name and nationality, and establish the responsibility of parents or guardians to register the birth of their child within 90 days of birth. However, Tanzania has one of the lowest birth registration rates in the world, with only 16% of children under five registered at birth and only half of those registered receiving a birth certificate.

In 2011 the Registration Insolvency and Trusteeship Agency (RITA) of Tanzania together with UNICEF developed a strategy to make the birth registration process more affordable, accessible and efficient. RITA eliminated the processing fees to make it more affordable and decentralised the registration process by training agents from local government administrative offices, hospitals and health clinics to perform the process of birth registrations. RITA and UNICEF then partnered with Tigo Tanzania to develop a mobile app to collect birth registration data and remotely upload it to a centralised system. When the new mobile registration system was introduced in the pilot area of Mbeya, over 127,000 children were registered in six months. This increased local registration from just 9% to 30%. Since then, over 420,000 children have been registered.16

Mobile app to verify refugee IDs

In 2015, the United Nations High Commission for Refugees (UNHCR) introduced a new biometric ID card. The card was first launched as a pilot project in Malawi and then deployed in Thailand and South Sudan. In 2016, a mobile app was launched in Malaysia, UNHCR VERIFY-MY. The app was designed to allow authorities to scan the SQR code on the back of a given card and verify its authenticity.17

16 Innovations in Mobile Birth Registration: Insights from Tigo Tanzania and Telenor Pakistan, GSMA, January 2017
17 Regulatory and policy trends impacting digital identity and the role of mobile, GSMA, October 2016
Digital identity in Côte d’Ivoire

In Côte d’Ivoire about 60% of the population have access to national ID. A birth certificate is one of the base documents needed to apply for most other forms of ID, but birth registration is still low, at 65%,\(^\text{18}\) and many people are able to obtain multiple birth certificates with different names and ages. These are commonly used for example to attend school when pupils have already passed the age limit to attend. In Côte d’Ivoire many types of identity card are accepted as proof of ID, of which some are robust and some less so. These include national ID, driver’s licence, passport, birth certificate, student ID, consulate card, attestation letters, voter cards and army cards. Some people might also resort to using expired documents that have not been renewed due to difficult application processes or prohibitive costs.\(^\text{19}\)

One of the initiatives implemented to increase registration figures was the adoption of registration systems for elections. For the referendum and parliamentary elections in 2016, Safran Identity & Security implemented a voter registration system using biometrics. At the time of the 2016 referendum there were 6.3 million registered voters, around 60% of the population of voting age (over 18).\(^\text{20}\)

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Digital Identity – SDG case study from Côte d’Ivoire

Mobile birth registration

In 2014, working closely with local authorities, Orange Côte D’Ivoire launched a mobile birth registration pilot service to allow people to register the birth of a child from isolated villages. Each village leader was given a mobile phone to register births in their local community.
Mobile financial services

Impact on SDGs

The provision of financial services via mobile is one of the most dynamic innovations in the industry and has had significant social and economic benefits for users. The use of mobile money as a financial instrument is relevant to 11 of the SDGs. For example, the immediacy, security and low cost of sending remittances through mobile money results in higher volumes of remittance, which overwhelmingly benefits the poorer populations that are more reliant on them, and builds the resilience of those in vulnerable situations (e.g. by helping to mitigate against socioeconomic, health and environmental shocks). This is relevant to SDGs 1 – No poverty, 3 – Good health and well-being, 5 – Gender equality, and 10 – Reduced inequalities. Mobile money providers are also well placed to replace inefficient cash payments to farmers and provide formal financial services for SMEs, relevant to SDGs 2 – Zero hunger, 5 – Gender equality, 8 – Decent work and economic growth, 9 – Industry, innovation and infrastructure, 10 – Reduced inequalities, and 17 – Partnerships for the goals.
Government salary payments in Liberia

Liberia is a cash-based economy, with ATMs and bank branches limited in number. For this reason, civil servants spend a large share of their monthly income travelling to collect their salary. Each month, a teacher would spend on average 15% of their salary doing so. In July 2016, USAID partnered with the Ministry of Education and Lonestar (MTN), with support from FHI 360, to roll out the first mobile salary payments to 67 teachers in Nimba County.

Initial results show that recipients preferred receiving mobile salary payments to collecting cash in the capital. Teachers on average saved nearly 14 hours, as they were able to cash out at local agents in a matter of minutes. The cost of collecting salaries dropped by 90%, as teachers only paid a small fee to the local agent to cash out the funds. It is estimated that mobile money could collectively save teachers $1.36 million per year and the Liberian government could save $4 million in fees, paymaster salaries, travel and other logistics costs.

Mobile money in international remittances

More than 250 million people live outside their place of birth and send money home. International remittances are critical in the economies of developing countries; nearly 75% of global remittances are sent to developing countries. According to the World Bank, the global average cost of sending $200 is around 8%. In Sub-Saharan Africa this rises to nearly 10%. Mobile money is having an impact on reducing the cost of remittances. A study conducted by Developing Markets Associates shows that using mobile money for international remittances is more than 50% cheaper than using a global money transfer operator (MTO) and is even more competitive for low-value transactions. Competition is also having an impact on cost – global MTOs tend to offer their services at lower prices in markets where they are in competition with mobile money providers.

Mobile-enabled pay-as-you-go (PAYG) model in utilities

PAYG solar providers, offering lease-to-own products that can be paid for via mobile money, are becoming some of the largest mobile money bill pay recipients. In Sub-Saharan Africa, Fenix International in 2014 became the third largest bill pay account by transaction volume for MTN Uganda, while PEG in Ghana has become the biggest biller for MTN Mobile Money outside of key government services and urban utilities. Offering PAYG solar services has been shown to increase financial inclusion, with new customers signing up to mobile money services to access solar services. For example, in Rwanda, 20% of Mobisol’s customers using the entrepreneurial kit were new MTN mobile money customers.

Mobile savings and insurance for women in Mali

In December 2014, Orange launched linked savings and insurance products – Sini Tonon and Tin Nogoya – in partnership with the NGO Population Service International (PSI) and NSIA, an insurance company. The products are mainly targeted at women: Tin Nogoya includes maternal cover as well as the more common life insurance; maternal mortality rates are high in the country and health insurance is limited. The two services are linked in that the insurance product activates automatically when the savings balance reaches XOF40,000 ($65) and gives 12 months of life/disability and maternal health insurance. The payout is XOF150,000 (approximately $250). Initial results suggest that Sini Tonon is driving Orange purchases and adoption of Orange Money, as a number of savings users are also new users to Orange Money. Sini Tonon has encouraged savings habits too; 55% of women had never saved before registering to this product. The sense of safety, reliability and privacy, and the insurance cover are the main reasons why customers have registered for Sini Tonon. Tin Nogoya also provides a first point of access to insurance for women: 97% of its female users had never had insurance before.
Mobile financial services in Côte d’Ivoire

With around 10% of the adult population having an account at a formal financial institution in Côte d’Ivoire, the Central Bank of West African States (BCEAO) realised that mobile money had the potential to increase financial inclusion. In 2006, it issued regulation on electronic money allowing non-banks to issue e-money.

Mobile money services were launched in 2008 by Orange Money, followed by MTN in 2009 and Moov’s Flooz in 2013. The uptake of mobile money services was slow initially, but reached a tipping point in mid-2012 as the country returned to peace and economic recovery. Aside from these external factors, mobile money providers have implemented strategies to increase adoption, including:

- partnering with utility companies
- rolling out ATMs, allowing customers to access cash at any time without the assistance of a mobile money agent
- developing stronger recruitment criteria for agents, managing agent performance more closely, and increasing support for agent liquidity.

Côte d’Ivoire has the highest mobile money penetration levels in West Africa according to Findex 2014 data, and a quarter of the adult population have a mobile money account. In June 2016, 72% of mobile money users subscribed to Orange Money, followed by MTN with 22% and Moov with 7%. Mobile money accounted for around 5% of operators’ recurring revenues.

Although cash is still the most common way to send and receive money, mobile money is increasingly used for domestic remittances. Some 50% of recipients receive domestic remittances through a mobile phone and 42% of senders use mobile phones to send domestic remittances. Additionally, Orange, MTN and Moov offer international remittance services to Côte d’Ivoire’s mobile money users, connecting them to several markets across Sub-Saharan Africa. Orange Money International Transfer links Côte d’Ivoire, Mali and Senegal. This is the first example of mobile money transfers between three markets. The Côte d’Ivoire to Mali corridor is one of the largest flows in Sub-Saharan Africa. MTN Mobile Money also offers cross-border transfers with Airtel Money in Burkina Faso. This was the first example of operators from separate groups agreeing to interoperate their mobile money services. Moov also offers international money transfer to Burkina Faso, Niger, Benin, Togo and France.

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27 World Bank Global Findex
28 Mobile money in Côte d’Ivoire: A turnaround story, GSMA, May 2014
29 World Bank Global Findex
30 ARTCI
31 World Bank Global Findex
Paying secondary school fees with mobile money

This is a strong example of successful collaboration between mobile operators and government. In 2011, the Ministry of National and Technical Education (MENET) launched a pilot project to digitise school registration fees in collaboration with CelPaid, a local online payments provider with field agents, and MTN. Following a successful pilot, MENET expanded the programme and looked to work with other mobile money providers to ensure universal coverage of the programme. Orange joined the initiative in 2012 and Moov did so in 2013. When the initiative was launched in 2011, 60% of school registration fee payments were made digitally, but only 3% were via mobile money. This increased significantly by 2015, when 99% of school registration fee payments were made digitally, 94% of which were via mobile money.

One of the success factors of this project was the government commitment to its successful implementation. The government has benefitted from this project in a number of ways. Firstly, it has reduced lost payments, fraud and theft; secondly, it has allowed the government to collect fees earlier in the year and over a shorter period, which makes it easier to manage annual budgets. Additionally, MENET has been able to consolidate its student database and significantly increase the quality of its information thanks to the digital registration of secondary school students.

Orange Rural Electrification Programme

This programme is the first domestic solar-energy trial for consumers to generate electricity in rural Côte d’Ivoire. It provides an affordable solution to help populations generate electricity where no traditional electricity grids are available. It has been piloted in three West African countries (Côte d’Ivoire, Senegal and Cameroon) since November 2016. Orange provides solar kits to rural communities to generate electricity that can be paid for through Orange Money.

Digitising payments in agricultural value chains

Recent research undertaken in 2015 by the IFC into the financial lives of cocoa farmers in Côte d’Ivoire shows that while very few cocoa farmers have bank accounts, just over half have a mobile money account. Cocoa farmers receive the majority of their income during the main harvest, and this money has to cover expenses throughout the year. It is therefore important for farmers to save money to better deal with their resources, particularly when there are unexpected events. Cocoa farmers need access to savings, which could also enable them to have a credit score to formally borrow money. Given the more common use of mobile money services compared to bank accounts, mobile operators are well placed to fill this gap by expanding their service offerings. Advans Côte d’Ivoire has partnered with MTN to offer cocoa farmers a digital savings account using USSD, which makes it accessible across different types of phone and where digital literacy is a barrier for farmers. As of July 2016, more than 7,000 cocoa farmers from 58 cooperatives had subscribed to the service and had a savings account in a formal financial institution.

GSMA Intelligence has estimated the direct revenue opportunity for mobile money service providers in 69 countries from digitising business-to-person (B2P) payments and government-to-person (G2P) transfers in agriculture. The digitisation of formal procurement by agribusinesses and of agricultural subsidy disbursement by governments can serve as the entry point to financial inclusion. In Côte d’Ivoire it is estimated that 27% of total annual production is sold through formal procurement channels. Some 1.3 million new mobile money accounts could be added by 2020 from digitising B2P and G2P payments, depending on the number of farmers engaged in formal value chains. Digitising agricultural payments can benefit the government by lowering the cost of distributing payments, by facilitating real-time and scalable payments to smallholder farmers across multiple locations and by mitigating cash handling risks, such as theft and fraud, and enabling transparent and traceable transactions.
M2M and IoT

Impact on SDGs

The rollout of M2M and IoT technologies is a relatively recent development and is nascent in many countries, particularly those with low average incomes. However, it has the potential to benefit countries across a range of SDGs. For example, IoT and sensor technology can contribute significantly to improved agricultural outputs (relevant to SDG 2 – Zero hunger), improved energy and water efficiency through smart meters (relevant to SDGs 6 – Clean water and sanitation, 7 - Affordable and clean energy, and 12 – Responsible consumption and production) and increased productivity for businesses, individuals and cities (relevant to SDGs 8 – Decent work and economic growth, and 9 - Industry, innovation and infrastructure). The mobile industry can play a critical role in developing the IoT infrastructure.

M2M and IoT – SDG case studies from Africa

Reliable energy for remote communities

BBOXX was founded in 2010 and provides solar power to rural areas in Africa. Vodafone M2M SIMs provide connectivity to BBOXX’s generator, so that the solar units can be activated, updated and managed centrally. Remote monitoring allows BBOXX to check for faults, install firmware updates and shut down the units in the event of missed payments. Some 5,000 units have already been deployed; there are a further 6,000 in production and 8,000 on order. The primary markets for BBOXX are Kenya, Uganda and Rwanda. BBOXX aims to have 4 million smart solar units in operation by 2020.

Clean drinking water in Gambia

In 2016 Africa Water Enterprises launched eWATERpay in Gambia – a solution that integrates mobile technology and contactless prepay to provide access to clean water. Each household buys an eWATERtag registered to their household, and in each village there is a water retailer with a smartphone. The retailer buys eWATERcredit via a mobile money service and then resells the credit to each household by tapping their phone on the eWATERtag. Retailers take 8% commission. While many charities install new taps, currently there is no way to monitor and fix the taps. With eWATERpay, it is always possible to track if the taps are usable and there is regular water supply.

The first eWATER taps were installed in four villages in Gambia. Within 24 hours more than 500 households had bought eWATERtags and had spent between 50p and £1 to buy water. The price of water is 1p for 20 litres. Today more than 11,500 people have access to safe drinking water through eWATERpay, nearly 2,000 eWATERtags have been sold and there are 20 eWATER sellers. The average purchase of water per person per day is 9 litres. The total number of litres bought by sellers is just under 900,000 litres.

Connected toilet project in Nairobi

People living in slums in Kenya have limited access to proper sanitation facilities. Sanergy manufactures low-cost but high-quality sanitation facilities called Fresh Life. The toilets are sold to people in the community who run them as small businesses. Sanergy collects the waste daily and converts it to end products such as fertilisers and renewable energy. Today Sanergy, in partnership with SweetSense, is testing the use of sensors to determine the fill levels of Fresh Life Toilets to better understand if sensor technology works in the sanitation environment and can help optimise waste collection routes and reduce operating costs.
M2M and IoT in Côte d’Ivoire

M2M and IoT are still nascent in Côte d’Ivoire and most of Sub-Saharan Africa. The number of M2M connections in Côte d’Ivoire is lower than most of its neighbouring countries, such as Benin, Nigeria and Ghana, and lower than the average for Sub-Saharan Africa. Strong ICT infrastructure is necessary so that IoT can realise its full potential. The sooner this infrastructure is in place, the sooner the rural communities will be able to realise the social, economic and environmental benefits of this technology.

Source: GSMA Intelligence

M2M connections as a share of total connections

M2M and IoT – SDG case study from Côte d’Ivoire

Mobile for smart energy solutions

In Côte d’Ivoire, just over half the population have access to electricity, with a significant gap between urban and rural areas. The government of Côte d’Ivoire and the Compagnie Ivoirienne d’Electricité (CIE), the national utility, have developed a strategy to leverage smart meters to improve the country’s electricity management. Orange has developed an M2M platform connecting smart electricity meters. This service aims to help customers monitor their electricity bills on a more regular basis, while helping utility companies reduce the cost of reading meters and the risk of fraud or billing errors.
CÔTE D’IVOIRE

Accelerating the impact of mobile on the SDGs

Increasing mobile connectivity

In order to ensure that mobile technology continues to transform Côte d’Ivoire into a digital society and to accelerate its impact on the SDGs, it will be important to increase take-up of both voice and mobile internet among the unconnected. This will also enable more people to utilise services such as mobile money and digital identity as well as mobile health and mobile agricultural applications.

The GSMA Mobile Connectivity Index measures how the key enabling factors for mobile connectivity differ across countries, helping focus the efforts and resources of the mobile industry, governments and wider international community to achieve universal internet access. The Index is built around four key enablers: infrastructure, affordability, consumer readiness and content.

Côte d’Ivoire has a score of 35 out of 100, above the West Africa average. It is classed as a ‘Discoverer’ (a cluster of countries defined as having room for improvement across all four enablers), but scores above average for this group in all enablers apart from consumer readiness. It therefore has the potential to quickly move to the next category of ‘Emerging’ countries.

Côte d’Ivoire in relation to West African peers and cluster average

<table>
<thead>
<tr>
<th>Country</th>
<th>Mobile Connectivity Index</th>
<th>Infrastructure</th>
<th>Affordability</th>
<th>Consumer readiness</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d’Ivoire</td>
<td>35</td>
<td>28</td>
<td>48</td>
<td>35</td>
<td>31</td>
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<tr>
<td>West Africa</td>
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<td>23</td>
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<td>Benin</td>
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<td>Senegal</td>
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<tr>
<td>Discoverers</td>
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<td>21</td>
<td>39</td>
<td>39</td>
<td>19</td>
</tr>
<tr>
<td>Emerging</td>
<td>43</td>
<td>34</td>
<td>56</td>
<td>57</td>
<td>36</td>
</tr>
</tbody>
</table>

Côte d’Ivoire’s lowest scores are for infrastructure and content. The former is driven to a significant extent by the relatively limited availability of spectrum, particularly in bands below 1 GHz (well suited to achieving better coverage). Rolling out coverage in remote rural areas may also require innovative solutions such as network sharing, alternative networks and collaboration with infrastructure partners to reduce network costs. In terms of content, Côte d’Ivoire can improve in the provision of e-government services. In the latest UN E-Government Survey Côte d’Ivoire scored 0.19 (out of 1) in the Online Service Index (OSI) compared to an average of 0.26 in Africa. The OSI assesses the quality and accessibility of each country’s national websites and portals to see if users can find information in local languages on health, finance, education, employment and so on.

See Mobile Connectivity Index for detailed scores underpinning each enabler.

However, the biggest enabler gap between the ‘Emerging’ group of countries and Côte d’Ivoire is in consumer readiness, followed by affordability. This illustrates the importance of improving digital skills and literacy, particularly among women, and ensuring that consumers can access mobile services and devices at price points that are affordable, especially for the bottom 40%.

To understand the barriers to internet adoption, we also analysed the results of the GSMA Intelligence Consumer Survey. The main issue preventing phone owners using the mobile internet is cost. The affordability threshold for the cost of mobile ownership, which includes both the cost of the device and the cost of mobile services (voice, SMS and data) as a percentage of income is generally considered to be 5%. In Côte d’Ivoire this is over 20% and increases to more than 60% of monthly income when considering the bottom of the pyramid, making mobile services unaffordable for many.

Source: GSMA Intelligence Consumer Survey 2016

### Barriers to mobile internet usage in Côte d’Ivoire

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>66%</td>
</tr>
<tr>
<td>Lack of digital skills</td>
<td>35%</td>
</tr>
<tr>
<td>Access barriers</td>
<td>34%</td>
</tr>
<tr>
<td>Safety and security concerns</td>
<td>32%</td>
</tr>
<tr>
<td>Lack of awareness and locally relevant content</td>
<td>18%</td>
</tr>
<tr>
<td>Lack of education</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>7%</td>
</tr>
<tr>
<td>Lack of network coverage</td>
<td>2%</td>
</tr>
</tbody>
</table>

Percent of non-users (among mobile phone users) citing reason
N=548
Through the GSMA Intelligence Consumer Survey we have also analysed the gender gap in mobile phone ownership and internet usage. In Côte d’Ivoire the gender gap is much more significant for internet adoption than mobile phone ownership – at 48% and 9% respectively. Two reasons for this gap are literacy and affordability. In Côte d’Ivoire, 30% of women are literate, compared to 52% of men, making the internet, which is often text-based on low bandwidth connections, much less accessible to those who cannot read. Additionally, the cost of mobile services as a share of monthly income is much more significant for women than for men – 33% compared to 17%. This means women are being disproportionately excluded from the benefits of mobile and the mobile internet. In this respect, the government’s plan to provide mandatory public schooling for all children, and the specific attention it is giving to the education of women, will be critical.

Source: GSMA Intelligence, ITU, UN

Estimate of the monthly cost of mobile services as a share of monthly income by gender in selected West African countries

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41 GSMA Connected Women defines the ‘gender gap’ as how less likely a female is to own a mobile phone (or use a mobile service) than a male. Gender gap in ownership (%) = (male phone owners (% of male population)) - (female phone owners (% of female population)) / (male phone owners (% of male population))
42 Consumer barriers to mobile internet adoption in Africa, GSMA Intelligence, July 2016
43 World Bank
44 Cost of mobile services includes the consumption of 500 MB of data plus a basket of voice calls and SMS
Accelerating mobile money

Côte d’Ivoire has been at the forefront of the rollout of mobile money in West Africa. It is important that it maintains this momentum so that the country can meet its SDG commitments.

The GSMA recently published a report analysing the success factors for mobile money services. Among the findings were the following:

- Operator-led mobile money deployments have been much more successful in delivering digital finance with broad outreach than non-operator-led mobile money deployments.
- Enabling regulation is an important predictor of success in mobile money services (for example, permitting non-banks to issue electronic money, imposing proportional capital requirements, and not prescribing the implementation of specific interoperability models without allowing for a market-led approach).
- Operators with greater market share are associated with greater success in mobile money.
- The probability that a mobile money service scales significantly is greater in countries with high levels of population density.
- Mobile money providers are able to capture a greater percentage of the addressable mobile money market in countries ranked higher in the World Bank’s Ease of Doing Business Index. In 2017, Côte d’Ivoire ranked 142 out of 190 countries, a drop of three places compared to 2016, though it compares well with comparator economies in West Africa.

This illustrates the importance of the government continuing to support the mobile industry with a regulatory framework that incentivises investment and the development of innovative mobile products. A recent World Bank study suggested that a way to drive additional financial inclusion in Côte d’Ivoire would be to diversify further the financial system by extending the range of activities performed by mobile companies – for example, allowing operators to issue credits to customers.

Source: World Bank

Ease of doing business in Côte d’Ivoire and comparator economies

- Mali: Rank 141
- Côte d’Ivoire: Rank 142
- Burkina Faso: Rank 146
- Senegal: Rank 147
- Regional average: Sub-Saharan Africa
- Benin: Rank 155
- Nigeria: Rank 169

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45 Success factors for mobile money services: A quantitative assessment of success factors, GSMA, November 2016
46 The race to emergence: Why Côte d’Ivoire must adjust its financial system, World Bank, July 2016
4

Opportunities for public-private collaboration
The mobile industry has a significant role to play in supporting the government to meet its national development goals and its SDG commitments. The industry already contributes to the SDGs by providing mobile connectivity and has increased financial inclusion through mobile money services. In order to increase its impact, it will be necessary to achieve further uptake of mobile services, so it is important that government and mobile operators work together to make them affordable.

Affordability is a key barrier to the take-up of mobile services among low-income individuals, particularly women. Inequality is a big challenge in Côte d’Ivoire: the per-capita income of the top 20% of the population is seven times that of the bottom 40%. Government policy can help make services more affordable – for example, taxes on devices were reduced in 2015. Similar initiatives could help reduce the cost of mobile ownership. Mobile operators can also play a role in providing more affordable services through continuing to develop pricing structures and payment models that align with the needs and ability to pay of those on the lowest incomes.

Inclusive digital identity systems can help unlock access to core public services and mobile-enabled services, such as financial services. Today Côte d’Ivoire’s identity ecosystem is fragmented, with many types of documents accepted as proof of identity. Mobile operators can help accelerate the scale and reach of robust digital identities through the use of mobile technology - for instance, by helping to address key barriers to birth registrations in the country, particularly in remote areas. The government could work closely with mobile operators to implement digital identity services and provide access to e-services such as healthcare and social welfare. This may also be an area where financial and technical support could be sought from donors and other international organisations.

Mobile financial services have had a significant social and economic impact in many countries and are a key driver for many SDGs. Today, Côte d’Ivoire has the highest penetration of mobile money accounts in West Africa, and mobile money is already being used by the government to facilitate the payment of over 1.7 million secondary school fees each year. Further rollout of mobile financial services will continue to contribute to Côte d’Ivoire’s achievement of the SDGs. Additionally, mobile money can help digitise person-to-government and government-to-person payments, helping to make money flows more efficient and reduce leakages. Potential areas of collaboration between the government and mobile money operators include social security contributions and disbursements, health insurance contributions and disbursements, digitisation of agricultural value chains and transportation payments.

Additional areas of opportunity include other mobile-enabled services such as energy, health and education. Given that just over 50% of the population have access to electricity, providing innovative ways for people to access electricity is important, particularly in rural areas, such as with pay-as-you-go solar home solutions. For this to be realised it is important to have the right infrastructure in place as IoT is still nascent in the country. Additionally, given low levels of literacy in the country and low health outcomes (such as high levels of maternal and infant mortality, and high levels of food insecurity), the Ministry of National and Technical Education (MENET), the Ministry of Health and mobile operators could collaborate to meet the goals on good health and wellbeing (SDG 3) and quality education (SDG 4).

Closer collaboration between the Ivorian mobile industry and the various line ministries of its government offers a strong opportunity to support Côte d’Ivoire’s social and economic progress.
Appendix A
Impact of the mobile industry on the SDGs

The following assessment of the mobile industry’s impact for each SDG is based on the GSMA’s SDG Impact Report. 47

Mobile connectivity

1. **No Poverty**
   - Connectivity reduces the costs of accessing information and can create or expand markets by enabling the mechanisms for buyers and sellers to discover each other and conduct transactions. This stimulates local businesses and growth in poor communities as well as the wider economy.
   - Mobile is bringing the internet to unconnected populations in low-income and rural areas. This brings material increases in productivity and economic growth, allowing local businesses and consumers to work their way out of poverty.
   - The provision of emergency calls and communications via mobile during disasters can be critical to their management and to the safety of those involved.
   - The mobile industry can also serve as a source of critical, location-specific data in disaster relief by providing access to data on phone usage, either in aggregate (showing how populations are responding to specific situations or interventions) or at an individual level (e.g. tracking missing people).

2. **Zero Hunger**
   - Mobile connectivity improves agricultural productivity by enhancing communication and education. For example, rural farmers often incur significant wastage by taking produce to a market with over-supply, and sometimes incur losses through low prices. Mobile technology can alleviate these problems by helping set up mobile market places connecting buyers and sellers.
   - The provision of emergency broadcast systems can also help farming communities prepare for, and mitigate, the damage caused by extreme weather events that disrupt food production systems.

3. **Good Health and Well-Being**
   - Access to basic voice and SMS services can enable pregnant women and new mothers to communicate with medical practitioners, which can be critical in remote, isolated and under-served communities. Mobile also provides an efficient means to access tertiary care advice, particularly in underserved areas. This enables those in need to seek treatment earlier and better adhere to their prescribed treatments.
   - The use of mobile big data can provide an important source of information for disease prevention, for example by tracking how diseases are spread.
   - Emergency broadcast systems are an effective means of communicating to populations in rural and widely dispersed locations during disaster situations such as health epidemics, fires, hurricanes or chemical pollution.

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Mobile improves the accessibility of primary and secondary education, particularly in remote or rural areas, by connecting schools to the mobile internet. This enables low-cost access to e-learning options. This is particularly useful in areas without reliable electricity as mobile phones require low energy consumption and little infrastructure.

With internet access, teachers and pupils can access the latest materials and the former can connect to teaching networks that enable their continued professional development. Teaching can also be done remotely via the internet, expanding teachers’ reach outside their own schools.

Mobile internet enables low-cost access to massive open online courses (MOOCs), supporting formal education for youth and adults seeking higher qualifications and allowing them to acquire relevant skills for employment. This can particularly benefit individuals with low incomes and socioeconomic status.

Mobile learning via MMS can play a significant role in education for those that do not have basic literacy skills.

Mobile is an effective tool in improving literacy and numeracy skills via voice and SMS due to its high penetration in low socioeconomic and remote communities with limited access to formal education.

The provision of basic mobile and internet connectivity supports access to reproductive healthcare, especially in remote areas.

It also provides access to information, social connectivity and financial services that increase empowerment. Connectivity exposes women to political content and networks, which can increase civic participation and activism.

Connecting women to the sharing economy infrastructure via mobile internet enables trading and the monetisation of traditionally unpaid care and domestic work.

Mobile provides a channel to offer education to poor and remote communities with a limited understanding of water and sanitation.

It can also enable water and sanitation outcomes to be monitored, allowing communities to report on water quality and sanitation issues through voice and SMS and to identify and rectify issues effectively.

Mobile also improves access to local sanitation builders.

Access to mobile internet reduces information, search and transportation costs and enables the use of online tools to increase efficiency. This is particularly important to reduce the inequality of business opportunities between rural and urban areas, where information asymmetry and price distortions can limit the benefits of national economic growth for those in remote areas.

Improved communication and information processing also improves supply chain management and enterprise resource planning, thus improving productivity.

The wider economic benefits of mobile connectivity also help drive more inclusive growth and expose businesses to a national and global market place.
COUNTRY OVERVIEW: CÔTE D’IVOIRE

• Operators build reliable and resilient communications infrastructure and networks to support economic development and connect mobile users both within and across countries.

• Mobile can promote equitable infrastructure access due its ability to economically cover large, sparsely populated areas. This helps to reduce unequal service provision between rural and urban areas and enables remote communities to be economic participants.

• Mobile is the dominant platform connecting people to the internet, especially in developing countries. This promotes the inclusiveness of economic development and allows remote communities who would usually be marginalised from urban industrialisation to access employment and business opportunities.

• By providing access to the internet and social networks, mobile offers a range of services and a powerful source of inclusion and information regardless of age, sex, disability, race, ethnicity, religion or economic/other status. Where affordability of access is a barrier, mobile has a significant role to play as an innovator of flexibly priced services (e.g. via micro prepayments).

• The mobile internet can have a significant impact on social and political inclusion by providing a channel for users to stay in touch despite physical distance. Networks also empower people to advocate for their political and social rights and enable collective action and campaigning.

• Mobile connectivity also promotes economic inclusion by enabling access to market places and lowering barriers to engaging in commercial activities.

• Mobile communication can be critical to the mitigation of loss and to the co-ordination of disaster recovery. Mobile also plays a key role in dissemination of news, providing those connected with the ability to receive updates about the disaster in question and notify their neighbours, relatives and friends through messages on various platforms.

• In order to deliver this impact, networks need to have minimal downtime, so operators are improving base stations to ensure functionality during natural disasters (e.g. by having their own power supply and satellite transmission equipment).

• Mobile provides access to information to communities (both consumers and businesses) to improve their awareness of sustainable development practices.

• The provision of emergency broadcast systems can prepare communities for natural disasters.

• Mobile services help individuals spread warnings among their communities of impending disasters.

• The mobile industry has a significant impact on resilience during a disaster by ensuring that the network is operational and has sufficient capacity.
• Mobile communications can facilitate education and knowledge sharing on the sustainable management of coastal ecosystem and fisheries.

• Small-scale fishermen can gain access to information about the market (e.g. weather, prices) as well as general marine resources via mobile channels.

• The mobile industry also enables the management of coastal ecosystems through the establishment of crowdsourcing platforms.

• Mobile enables platforms to monitor activity in forests and gather information on land-based ecosystems to inform conservation management – for example, crowdsourcing platforms and the use of mobile devices for environmental monitoring.

• Mobile can be used to share information in instances of poaching and trafficking. There are also specialised mobile applications that provide tools to help identify wildlife products and illegal goods.

• Mobile technology allows police officers to transfer information efficiently and effectively, providing input for better decision making.

• Where networks allow, police in some countries are piloting streaming video or wearable cameras to improve deployment, evidence collection and safety.

• Operators, in conjunction with governments, can develop technical solutions to identify organised crime and terror threats (e.g. interception devices enabled by connectivity can be deployed to monitor suspicious or threatening communication).

• By enabling internet access, the mobile industry can promote freedom of expression, thought, belief and opinion by opening a channel for individuals to share ideas and information around the world.

• The industry is a direct contributor to improvements in connectivity, which can catalyse the dissemination of technology and enhance the level of science, technology and innovation in a country. The mobile industry also makes a significant contribution to capacity building by investing substantially in the technological capacity of the least developed countries.

• Mobile network operators have distinct capabilities and access to data on large populations which can be synthesised and used to inform public decision making for the benefit of sustainable development, in partnership with governments.
Digital Identity

- Mobile facilitates the provision of digital identity, which can unlock access to e-services of many types, including core public services (e.g. healthcare and social welfare), financial services and ownership rights (e.g. of land).

- Where mobile facilitates the provision of digital identity, it can reduce barriers for women in accessing financial services (e.g. by allowing them to open a bank account).

- The benefits of digital identity under SDG 1 are also relevant to SDG 8 as they can help promote the inclusion of the poor in economic growth. They can also simplify government targeting of specific population segments (e.g. for certain healthcare or social welfare programmes).

- By enabling the provision of digital identity, mobile offers solutions for identity management and birth registration, facilitating access to fundamental services and freedoms that are typically inaccessible to those without formal identities.
Mobile financial services

- By providing the poor with the financial services they need to make investments and manage unexpected costs, the mobile money industry is helping to eliminate extreme poverty. The industry is also contributing to job creation, entrepreneurship and the growth and stability of the financial system in many markets.

- Access to financial services can help small agricultural producers increase crop productivity by digitising crop payments and facilitating the purchase of equipment, agricultural inputs and insurance.

- Financial services can help individuals successfully manage their own health and that of their family, by giving them a greater ability to track medical expenses, save income, receive remittances from friends and family in times of crisis, and purchase health insurance. In India, Ghana, Kenya, Mali, Paraguay, Senegal, Sri Lanka and elsewhere, mobile money providers are partnering with health service providers – predominantly insurance providers – to offer these services to people without a formal bank account.

- In several markets, mobile money providers are working with primary and secondary schools, as well as universities, to digitise payment of registration, tuition and exam fees. Digital payments via mobile money are helping schools to better manage their finances, receive tuition payments on time and pay teacher salaries. This has resulted in cost and operational efficiencies and greater transparency.

- Financial services help women to empower themselves economically. It is currently estimated that 42% of women globally are not integrated into the formal financial system. The mobile money industry is helping to give women greater control over household finances, helping them to access credit to start or expand businesses, relieving them of the insecurity associated with carrying cash, and enabling greater privacy.

- More people in the developing world have access to mobile phones than basic services such as electricity, water and sanitation. The mobile money industry has been a key enabler of the rapidly expanding pay-as-you-go sector, facilitating better access to water and services through a lease-to-own model. More than 30 countries have pay-as-you-go models that provide off-grid energy in exchange for ongoing payments, and many of these companies are partnering with mobile money providers to facilitate the timely and secure collection of payments.
• By employing agents to register customers and perform cash-in and cash-out services, the mobile money industry has created a new source of income for many in the developing world. In June 2015, the top 10 mobile money providers paid out 54% of their revenues ($650 million) as commission to their 925,000 agents. Mobile money has also been a catalyst for local business and entrepreneurship – important in developing markets, where formal small and medium-sized enterprises contribute up to 45% of employment and 33% of GDP.

• The digitisation of payments and access to credit services via mobile money have both led to the emergence of new industries, innovative practices and even infrastructure. Many businesses now rely on mobile money providers to secure timely payment for goods and/or services. The pay-as-you-go solar industry, now operating in 30 countries, is just one example of this. Access to credit services via mobile money is also helping micro and small businesses to flourish.

• High unemployment rates mean that economic migration is common across much of the developing world. Migrant workers tend to earn low incomes and send some or all of the money they earn to relatives back home, many of whom rely on remittances as an important source of income. The cost of sending remittances is often high relative to income. Recent findings show that sending international remittances from a mobile money account is, on average, 50% cheaper than doing so via a global money transfer, underscoring the role that the service is playing in making remittances more affordable.

• Mobile money providers are partnering with a large number of businesses, governments and NGOs across a range of sectors to facilitate the transition to digital payments. Ultimately, all partners benefit; mobile money providers increase the sustainability of their operations, and businesses, governments and NGOs benefit from the greater efficiency, transparency and security that digital payments offer.

[49] World Bank
[50] Driving a price revolution: Mobile money in international remittances, GSMA, October 2016
M2M and IoT

- IoT and sensor technology can contribute significantly to improved harvesting output. For crop farming these advancements impact the preparation of soil and the timing of planting and harvesting. These systems also generate higher harvest yields while reducing the use of resources such as seeds, water, fertilisers and energy.

- The mobile industry is critical in developing the IoT infrastructure to facilitate these improvements, particularly low power wide area (LPWA) technology, which can support geographically dispersed sensors covering large land masses.

- M2M technology can significantly change the safety profile of cars. Connected car solutions reduce the chance of collisions and therefore road and traffic accidents.

- Smart sensor technology and the use of smart metres can improve water efficiency and the performance of water management systems by identifying leaks and suboptimal water pressure, and recording timely consumption data.

- Smart sensors can also track the activity of sewerage networks, in order to prevent blockages, and pit and septic tank levels.

- Introducing IoT solutions to capture energy usage information and directly manage usage has huge potential to drive both consumption and production efficiencies. The dynamic monitoring of consumption provides organisations with the knowledge to introduce immediate responses, as well as more systemic changes as the drivers of energy consumption become better understood. Immediate responses include turning off equipment or lights. More systemic changes include scheduling consumption when energy rates are lower, and incentivising workers to lower their energy usage.

- Development of IoT infrastructure (e.g. software upgrading, remote SIM provisioning) can support sensor connectivity and innovations that increase productivity for businesses, individuals and cities (e.g. driverless cars, self-monitoring energy-efficient buildings and crop monitoring).

- IoT solutions also have a role in the improvement of global resource efficiency in consumption and production, for example by providing the connectivity infrastructure for smart meters and smart sensor technology.

- IoT connectivity infrastructure can drive improved production efficiency and sustainability in industrial processes as well as lowering costs. Supporting the development of IoT focused on energy and industrial process efficiency can enable resource-intensive sectors (such as manufacturing, utilities and logistics) to improve the sustainability of their processes.

- IoT also impacts the innovation aspect of SDG 9 by driving technological progress across sectors that promote innovation in traditional industrial processes.
### COUNTRY OVERVIEW: CÔTE D’IVOIRE

- **IoT solutions** can be employed for environment monitoring in order to improve air quality and waste, and reduce the negative environmental impact of cities.

- The data sets created by IoT monitoring solutions can enable authorities to build smarter cities that are more efficient at delivering services and reduce the impact of urban growth on the environment – for example, intelligent traffic management and driverless cars.

- The deployment of IoT solutions allows consumers and businesses to monitor, measure and analyse consumption and production patterns, driving more sustainable behaviour.

- IoT is critical in supporting smart cities to optimise consumption patterns without user intervention (e.g. light sensors used to turn lampposts on or off, depending on the level of daylight).

- IoT systems are also used as monitoring solutions to protect and maintain the environment. Systems are able to accurately measure: temperature, humidity, light levels and air quality to understand the primary drivers of detrimental impacts on the environment.

- Richer data sets are at the heart of establishing the impact of climate change and facilitating its ongoing management. IoT solutions can enable relevant authorities and communities to monitor climate change and take targeted action in response to climate change and climate-related events (e.g. providing farmers with quick access to rainfall data so they can plan for flood or other extreme weather conditions).

- IoT innovations can improve energy efficiency to address the root cause of climate change, for example by turning off power-hungry devices based on real-time data from sensors.

- M2M solutions can provide a cost-effective option for monitoring near-shore coastal marine ecosystems and therefore contribute to more effective conservation management of such areas.

- IoT solutions can be used to protect both animals and humans – for example using IoT trackers to map the location, movements and habits of animals and predict when they are likely to come into contact with local farmers.

- They can also be used to support natural habitats and monitor endangered species and land ecosystems.
### Mobile-enabled services

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<tr>
<td><strong>2</strong></td>
<td><strong>ZERO HUNGER</strong></td>
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<tr>
<td>• The provision of mobile health offers an effective high-reach and low-cost solution to provide timely and relevant information to individuals that can improve nutrition and address their healthcare needs.</td>
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<tr>
<td>• Mobile health also creates a channel to deliver educational content on improved nutritional practices such as balanced diets and improved use of locally available foods. This can also help to ensure increased intake of important nutrients, effective breastfeeding of infants and safe and appropriate feeding of children.</td>
<td></td>
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<tr>
<td>• Mobile agricultural services improve productivity by enabling the provision of agricultural information and education, particularly to small-scale producers in isolated communities, and can connect them to agricultural marketplaces.</td>
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<tr>
<td><strong>3</strong></td>
<td><strong>GOOD HEALTH AND WELL-BEING</strong></td>
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<tr>
<td>• Access to mobile health programmes supports the reduction of preventable deaths of children by increasing immunisation awareness.</td>
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<tr>
<td>• It also provides specialised healthcare to women in rural communities so they can access pregnancy healthcare programmes and online information about safe sex and family planning that is not openly available in communities.</td>
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<td><strong>4</strong></td>
<td><strong>QUALITY EDUCATION</strong></td>
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<tr>
<td>• Mobile technology education tools can improve the quality of engagement in the learning experience and build relevant digital skills in children (for example, use of interactive educational tablets).</td>
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<tr>
<td><strong>5</strong></td>
<td><strong>GENDER EQUALITY</strong></td>
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<tr>
<td>• Access to mobile health promotes equal access to health care, particularly in rural communities where women are less likely to be able to travel to obtain specialised healthcare services.</td>
<td></td>
<td></td>
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<tr>
<td>• Female-specific e-health services support access to sexual and reproductive health services.</td>
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Appendix B
SDG benchmarks for Côte d’Ivoire

In order to measure progress in achieving the SDGs, the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) has developed a global indicator framework. General agreement has been reached on 230 indicators. In the following charts, we provide Côte d’Ivoire’s current benchmark for a selection of indicators relevant for SDGs 1 – No poverty, 2 – Zero hunger, 3 – Good health and well-being, 4 – Quality education, 5 – Gender equality, 6 – Clean water and sanitation, 7 – Affordable and clean energy and 10 – Reduced inequalities. In line with the NDP aim, these are the SDGs that have been given priority by the Côte d’Ivoire government and UNDP (particularly SDGs 1, 2 and 10). Due to issues around data availability and the fact that complete and up-to-date data has not been compiled for each country (including Côte d’Ivoire), it is not possible to assess every individual target for any of the SDGs. However, the analysis provides an indication of where Côte d’Ivoire currently is with respect to eight of the SDGs.

Source: UN, INS

Proportion of population below poverty line

Source: INS

Proportion of population below poverty line, Côte d’Ivoire (1985–2015)
COUNTRY OVERVIEW: CÔTE D’IVOIRE

*Note: Stunted children is defined as the proportion of children under 5 years of age whose height is less than two standard deviations from the median of the World Health Organization (WHO) Child Growth Standards. Wasted children is defined as the proportion of children under 5 years of age whose weight or height is less than two standard deviations from the median of the WHO Child Growth Standards.

Undernourishment and food insecurity*

Source: UN

Agriculture value added per worker

Source: World Bank

Maternal and infant mortality

Source: UN

Tuberculosis and malaria incidence

Source: UN

*Note: Stunted children is defined as the proportion of children under 5 years of age whose height is less than two standard deviations from the median of the World Health Organization (WHO) Child Growth Standards. Wasted children is defined as the proportion of children under 5 years of age whose weight or height is less than two standard deviations from the median of the WHO Child Growth Standards.
COUNTRY OVERVIEW: CÔTE D’IVOIRE

Percent of primary pupils with minimum proficiency and school life expectancy

<table>
<thead>
<tr>
<th>Country</th>
<th>Minimum proficiency in maths</th>
<th>Minimum proficiency in reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d’Ivoire</td>
<td>71%</td>
<td>8.9</td>
</tr>
<tr>
<td>West Africa</td>
<td>55%</td>
<td>9.4</td>
</tr>
</tbody>
</table>

Source: UN

Proportion of schools with access to basic facilities

<table>
<thead>
<tr>
<th>Source</th>
<th>TARGET 100%</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>PRIMARY</td>
</tr>
<tr>
<td></td>
<td>Côte d’Ivoire</td>
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<tr>
<td></td>
<td>Electricity</td>
</tr>
<tr>
<td></td>
<td>25%</td>
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<tr>
<td></td>
<td>21%</td>
</tr>
</tbody>
</table>

Source: UN

Gender parity index for literacy, school life and income

<table>
<thead>
<tr>
<th>Source: UN/UIS</th>
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</thead>
<tbody>
<tr>
<td>Literacy</td>
</tr>
<tr>
<td>School Life Expectancy</td>
</tr>
<tr>
<td>Income</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
</tr>
<tr>
<td>61%</td>
</tr>
<tr>
<td>79%</td>
</tr>
<tr>
<td>52%</td>
</tr>
<tr>
<td>West Africa (average)</td>
</tr>
<tr>
<td>64%</td>
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<tr>
<td>94%</td>
</tr>
<tr>
<td>63%</td>
</tr>
</tbody>
</table>

Source: UN

Incidence of harmful practices against women

| Source: UN |
| Percent of girls aged 15-19 who have undergone FGM/C |
| Côte d’Ivoire |
| 10%          |
| West Africa (average) |
| 38%          |

| Source: UN |
| Percent of women aged 20-24 married by age 15 |
| Côte d’Ivoire |
| 12%          |
| West Africa (average) |
| 45%          |

Source: UN

Use of safe drinking water and sanitation

| Source: UN |
| Percentage of population |
| Use of improved drinking water sources |
| Côte d’Ivoire |
| 82%          |
| West Africa (average) |
| 76%          |

| Source: UN |
| Use of improved sanitation facilities |
| Côte d’Ivoire |
| 22%          |
| West Africa (average) |
| 27%          |
Access to electricity and use of clean fuels

Source: UN

<table>
<thead>
<tr>
<th>Percentage of population</th>
<th>Access to electricity</th>
<th>Primary reliance on clean fuels and technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Africa (average)</td>
<td>56%</td>
<td>31%</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>37%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Renewable energy as a proportion of total final energy consumption

Source: UN

<table>
<thead>
<tr>
<th>Côte d’Ivoire</th>
<th>West Africa (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>74%</td>
<td>66%</td>
</tr>
</tbody>
</table>

Inequality and Gini coefficient

Source: World Bank

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of income share of bottom 40%</th>
<th>Gini coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mali</td>
<td>20%</td>
<td>33</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>20%</td>
<td>35</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>20%</td>
<td>34</td>
</tr>
<tr>
<td>Guinea</td>
<td>20%</td>
<td>34</td>
</tr>
<tr>
<td>Niger</td>
<td>20%</td>
<td>34</td>
</tr>
<tr>
<td>Liberia</td>
<td>15%</td>
<td>36</td>
</tr>
<tr>
<td>Senegal</td>
<td>16%</td>
<td>36</td>
</tr>
<tr>
<td>Benin</td>
<td>15%</td>
<td>36</td>
</tr>
<tr>
<td>Nigeria</td>
<td>15%</td>
<td>36</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>15%</td>
<td>36</td>
</tr>
<tr>
<td>Cabo Verde</td>
<td>14%</td>
<td>36</td>
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<tr>
<td>Togo</td>
<td>14%</td>
<td>36</td>
</tr>
<tr>
<td>Guinea-Bissau</td>
<td>13%</td>
<td>36</td>
</tr>
</tbody>
</table>