

Smart Water Systems

Thursday 13th January, 2011

Silver Springs Hotel

Nairobi, Kenya

RURAL FOCUS LTD.



Challenges and prospects of water management in Kenya

Forum urges more investments in Lake Victoria Basin

Mwanza | Tanzania | Dec 08, 2010
by crocodilla

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Delegates pose for a group photograph during the Lake Victoria Investment Forum at Malaika Beach Resort in Mwanza, Tanzania.

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NEWS

City water supply under threat over Sh95m debt

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By OLIVER MUSEMBI newsdesk@kenyanationmedia.com AND CAROLINE RUVENJI crows@kenyanationmedia.com Posted Monday, December 6 2010 at 22:00

IN SUMMARY

Water authority says it will cut supply unless the bill is settled

Water supply to Nairobi is threatened with disconnection as the Nairobi Water Company and the Water Resources Management Authority squabble over Sh95 million bill.

While the authority, which manages dams and water pipes supplying water to the city, the water company is distributes to residents and businesses.

The EastAfrican

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BUSINESS

As water needs increase, so does tension in the Nile Basin states

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Aerial view of the River Nile in Cairo. Picture: AFP/Marwan Naamani

By JOSEPH NGOME (email the author)
Posted Tuesday, November 30 2010 at 19:43

A report that Egypt will need water supply totalling 86 billion cubic metres by 2017 if the country has to meet its fast-rising demand is causing heightened anxiety among the upstream countries of the River Nile. This has clearly indicated that Egypt's fear over the equitable sharing of the Nile waters is close to desperation.

Call for action over private wells in Africa

Tuesday, 16 November 2010 07:45

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1. Women fetch water from a borehole.

By David Fox

London. Academics may call it "self-supply of ground water", those who benefit from it are more likely to refer to "having their own well". Either way, it is a crucial part of the water supply to cities in the developing world, and one which is almost entirely absent from official statistics.

Now a new study from the International Institute for Environment and Development (IIE) urges that much more attention should be paid to these wells, on which, it estimates, something like a third of all urban dwellers in Africa, and South and Southeast Asia depend for their water.

"The policy trend is to promote the use of piped water, but as our research shows, large proportions of urban populations are not served and must supply themselves with groundwater from wells," says the report's co-author Jenny Grönwall.

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NEWS

150,000 in northern Kenya risk starving as food crisis bites

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Women wait for their turn to fetch water at Welmerer Borehole in Jarajilla division, Fafi district. In the past, severe drought has forced herders in northern Kenya to cross the border into Somalia in search of pasture and water. Photo/FILE

Africa Needs Innovative Sources Funding for Water and Sanitation, Says AfDB

MONDAY, 22 NOVEMBER 2010 08:48 NEWBUSINESSETHIOPIA.COM

Print Email

By NEW BUSINESS ETHIOPIA REPORTER

Africa needs to introduce innovative sources of funding to meet its water infrastructure needs, which range from 45 - 60 billion US dollars per annum, the African Development Bank (AfDB) says.

An estimated 45 - 60 billion US dollars is required annually to meet Africa's water infrastructure requirements, of which drinking water supply and sanitation represents some 11 billion US dollars, the bank noted in a press statement newbusinessethiopia.com received.



Disruptive technologies and developmental impacts

“Mobile telephony... can contribute meaningfully to every single MDG. The gains are breathtaking in promoting livelihoods, improved health, better schools, and other areas.”

- Prof Jeffrey Sachs, special adviser to the UN Secretary General on the MDGs

“New technology-based solutions that did not exist when the [Millennium Development] goals were endorsed can and should be leveraged to allow for rapid scaling up. The most important of these technologies involve use of mobile telephones, broadband internet and other information and communication technologies”

- UN Secretary General Ban Ki Moon

Africa leads the way in the mobile money revolution

Africa now has 506 million mobile subscribers

10.11.2010

Categories: [Mobile](#), [Communications](#), [Mobility](#), [Wireless Communications](#)

Tags: [Mobile Phones](#), [Mobile Broadband](#), [Africa](#)

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Africa is shaping up to be the next hotbed of mobile innovation after it emerged the number of active mobile subscribers on the continent has crossed the half a billion mark.

At the end of September, Africa reached 506 million mobile subscribers, according to Informa Telecoms & Media.

At the end of the third quarter, Africa accounted for 10pc of the world's mobile subscriptions and was one of the world's fastest-growing regions – with the subscription numbers increasing 18pc over the year to September – as a result of the still low mobile penetration rate on the continent, as well as demand for new services, such as mobile internet access, that increase the need for telecoms connectivity.



Mobile's next frontier - Africa has breached the half a billion mobile subscriber mark, don't be surprised to see some of the next major innovations in wireless to emerge from this region

Forbes

PERSONAL FINANCE

Names You Need To Know in 2011: Mobile Money

Nov. 16 2010 - 5:52 pm | 959 views | 0 recommendations | 7 comments

Mobile Money. Mobile Commerce. It's so new it's too early to say what name will ultimately stick, but over the next year we're going to be hearing a lot more about our ability to zap funds between one-another without the shackles of coins, paper bills, plastic cards or checks.



Image via CrunchBase

Mobile banking revolution gathers pace, opens new frontier for profits

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Money transfer. Mobile cash transfers now stand at an average \$h3 billion a day. File

By Robin Okoth (email the author)
Posted Thursday, November 18 2010 at 19:17

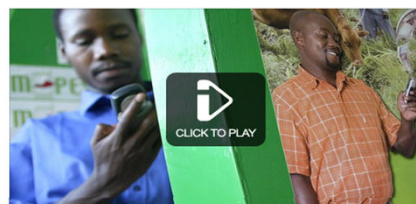
Kenya has been the birthplace of a banking revolution: with 65 per cent of mobile phone users now interested in adopting mobile banking services over traditional banking, according to a global survey last month by Netherlands technology firm Fundtech and research firm Aite

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22 November 2010 Last updated at 08:55

M-Pesa: Kenya's mobile wallet revolution

By Fiona Graham
Technology of business reporter, BBC News



Why has the developed world been so slow to adopt the mobile wallet?

Think of the developing world, and the first thing that springs to

Airtel Kenya hits the ground running



AIRTEL Kenya, the second largest cellular mobile operator in Kenya has hit the ground running barely two weeks after re-branding, with the release of an additional 2.5million lines covering five numbers prefixes.

The company has unveiled new mobile number prefixes in the range of 0739, 0786, 0787, 0788 and 0789.

In a statement, Airtel Kenya Managing Director Rene Meza said that the increased demand for Airtel Kenya lines in the market in recent days had necessitated the release of new prefixes.

M-Pesa boosts war against poverty

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File | NATION The World Bank has praised M-Pesa saying it is an ideal story of why it pays to invest in the poor. The service provides a low-cost money transfer and savings service.

By Paul Redfern, Nation Correspondent, London Posted Monday, November 22 2010 at 22:00

IN SUMMARY

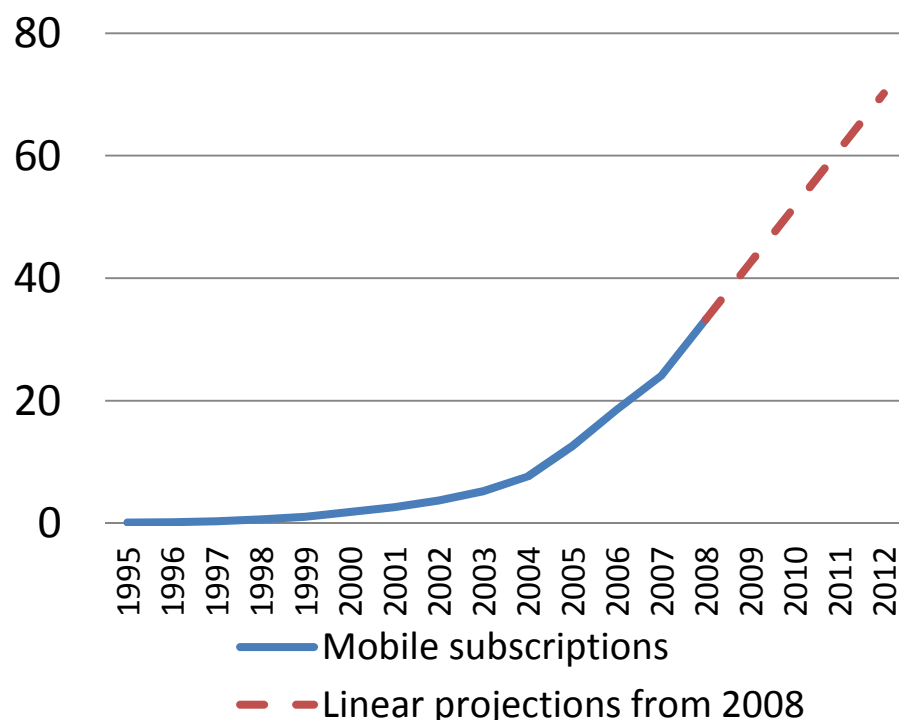
• 'Africa has a culture of saving but people often do not have the mechanisms to save'

The M-Pesa network is a model for taking banking services to the grassroots, the World Bank has said.

The managing director, Ms Ng'osi Okonjo-Iweala, said M-Pesa is the ideal story of why it pays to invest in the poor.

Mobile money is leapfrogging traditional modes of banking in Sub-Saharan Africa

Mobile phone subscribers in SSA
(per 100 people): 1995-2008



In comparison, there are only 16.3 bank accounts per 100 adults in Sub-Saharan Africa

Rapid expansion of mobile banking services in Sub-Saharan Africa: 2007-2011

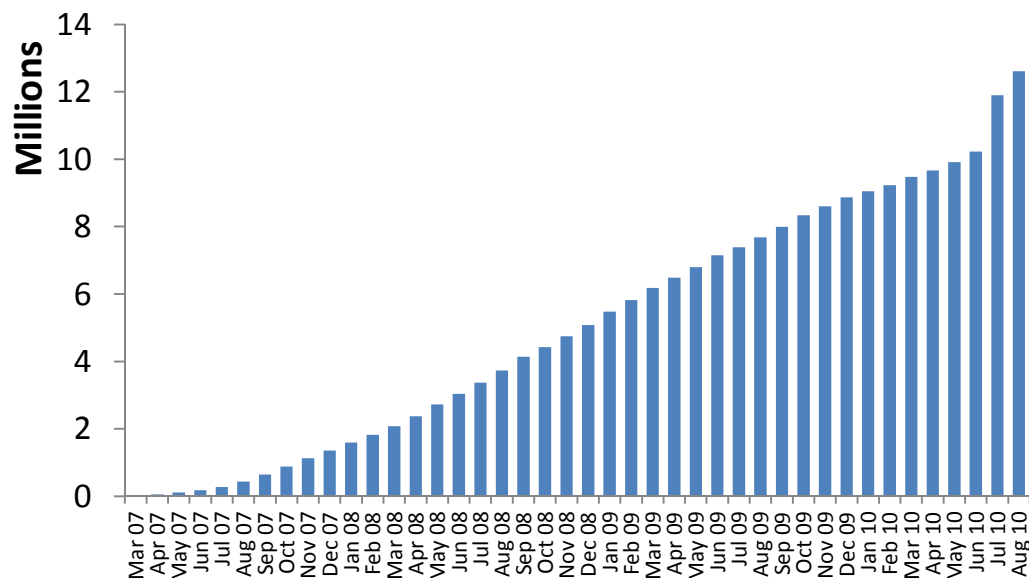


M-PESA is the iconic success story

13 million users in just three and a half years



M-PESA users: Mar 2007-Aug 2010

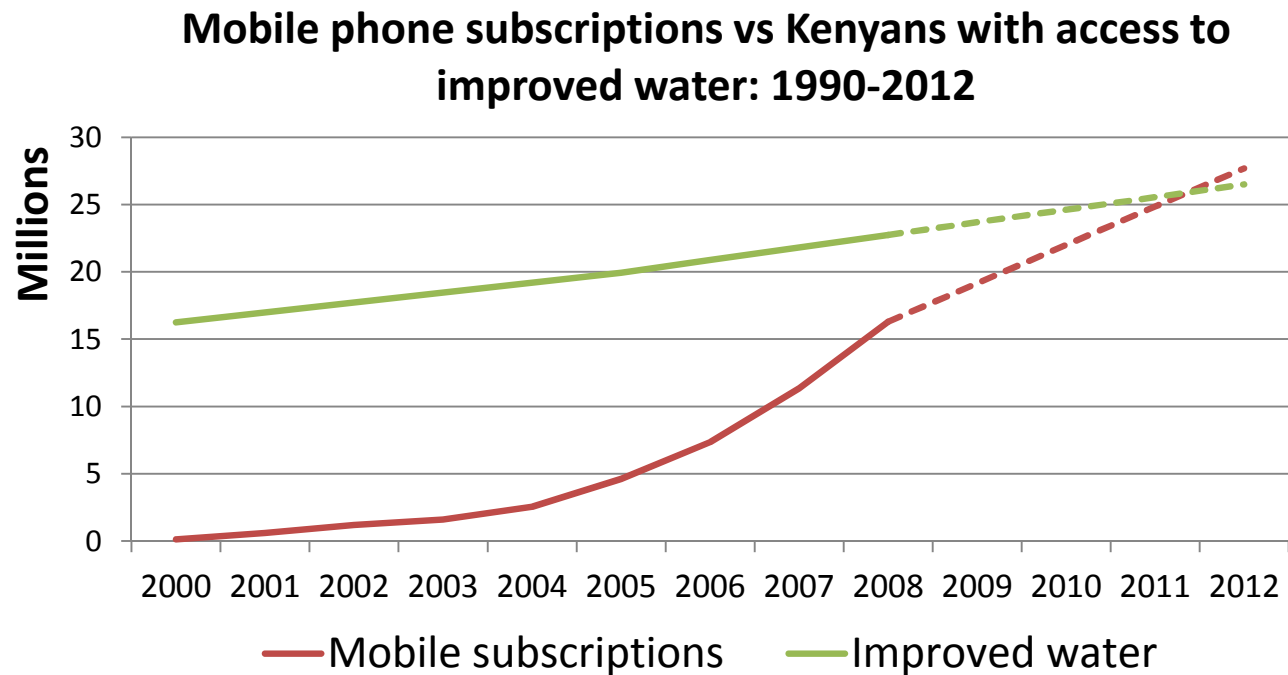


Mobile money products now used by
2 in 3 Kenyan adults



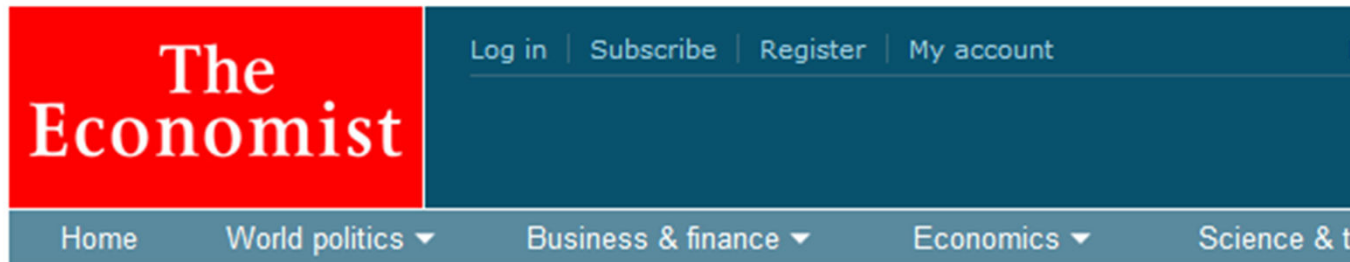
Now over 70% of households in Kenya and over 50% of the poor, unbanked and rural populations use M-PESA

What are the prospects for mobile banking in the water sector?



MPESA can now be used to pay water bills for metered customers in Eldoret, Kisumu, Nairobi and Nakuru

Global growth of smart systems technology



A special report on smart systems

Making every drop count

Utilities are getting wise to smart meters and grids

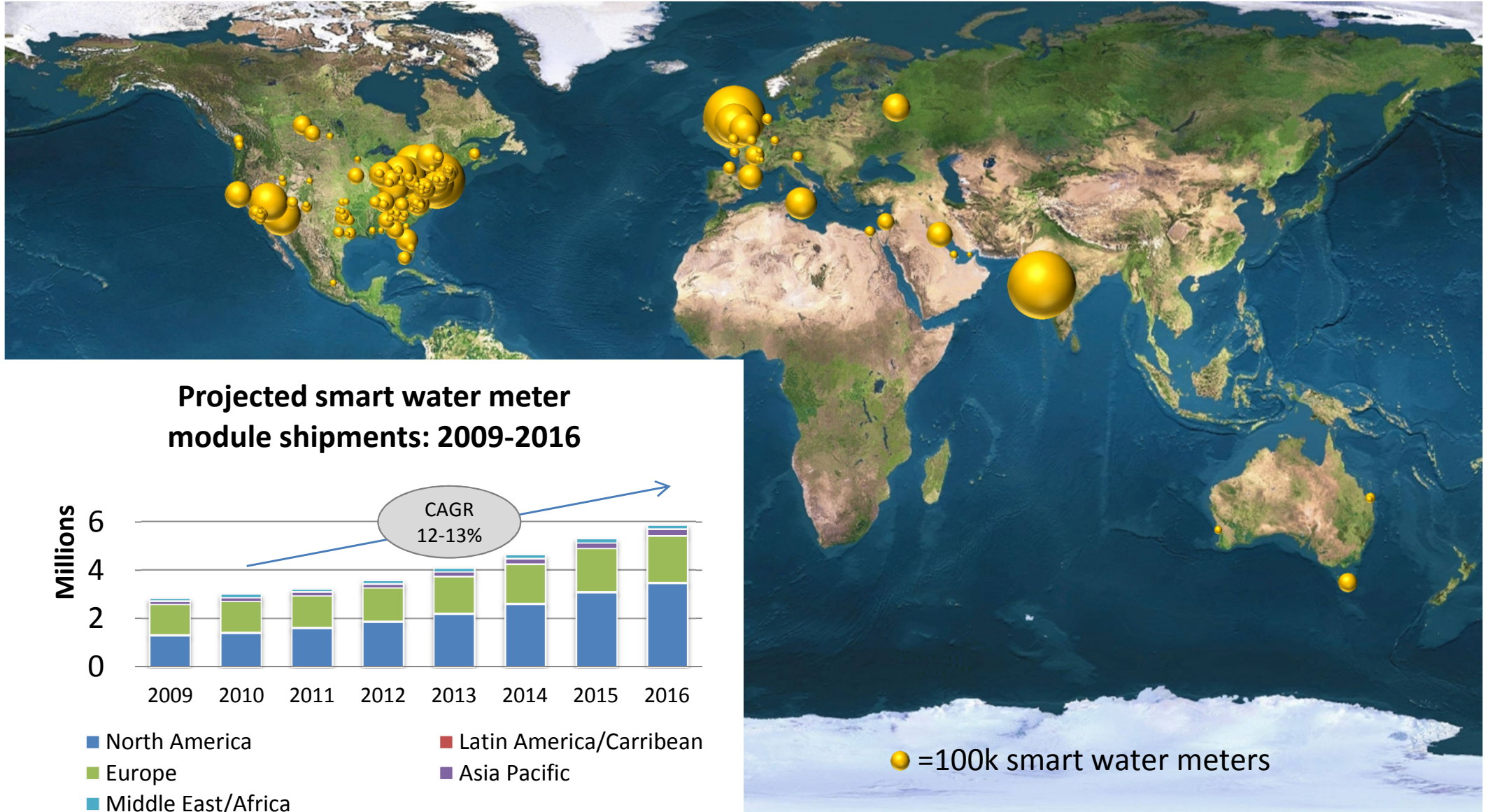
Nov 4th 2010

LONDON'S streets can be a bit of a maze, but below ground things are even more complex. Water pipes crisscross the city in all directions. Some areas used to have competing water companies, each of which built its own system. Not even Thames Water, the utility that operates the British capital's water-supply network today, knows exactly where all the pipes run.

Moreover, the network is ageing. Only a few years ago more than half of the 10,000 miles (16,000km) of water pipes below the streets of London were over a hundred years old and often burst. It did not help that over many years Thames Water, which was privatised in 1989, failed to invest enough. By the mid-2000s London had one of the leakiest water-supply systems in the rich world. Every day nearly 900m litres of treated water were lost and 240 leaks had to be fixed.

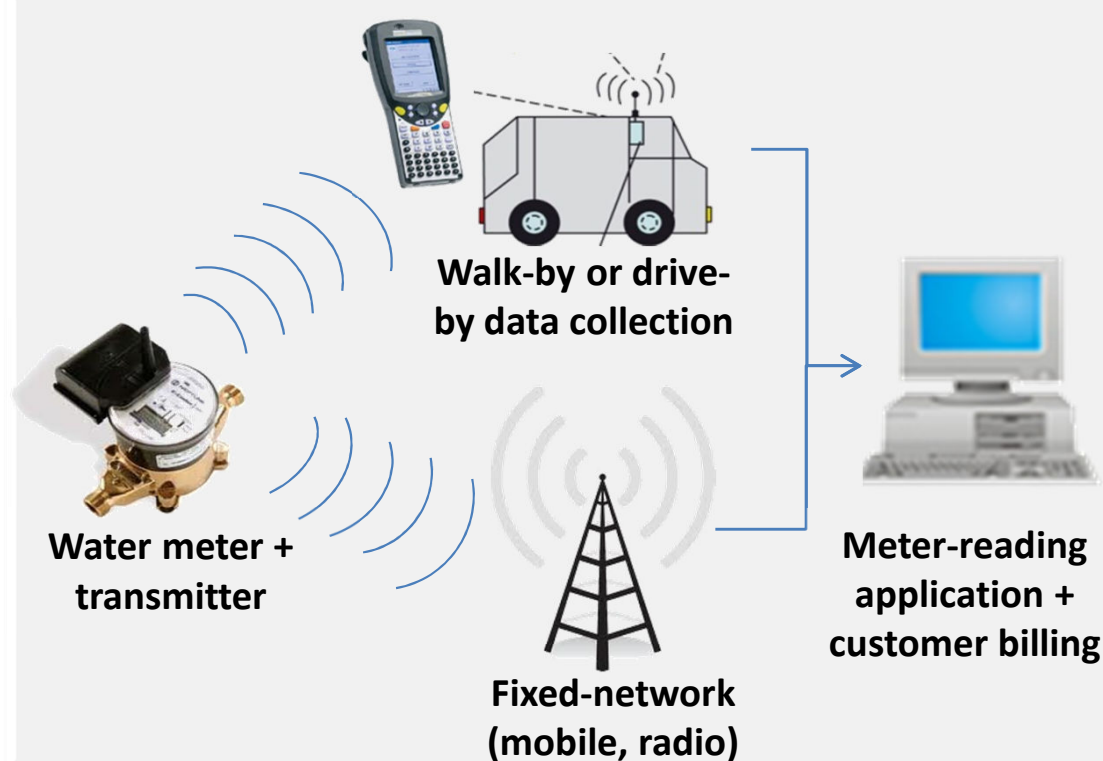
Smart water metering projects are expanding rapidly

Global shipments of smart water meter modules predicted to double by 2016



Smart water metering offers a range of potential benefits for urban areas...

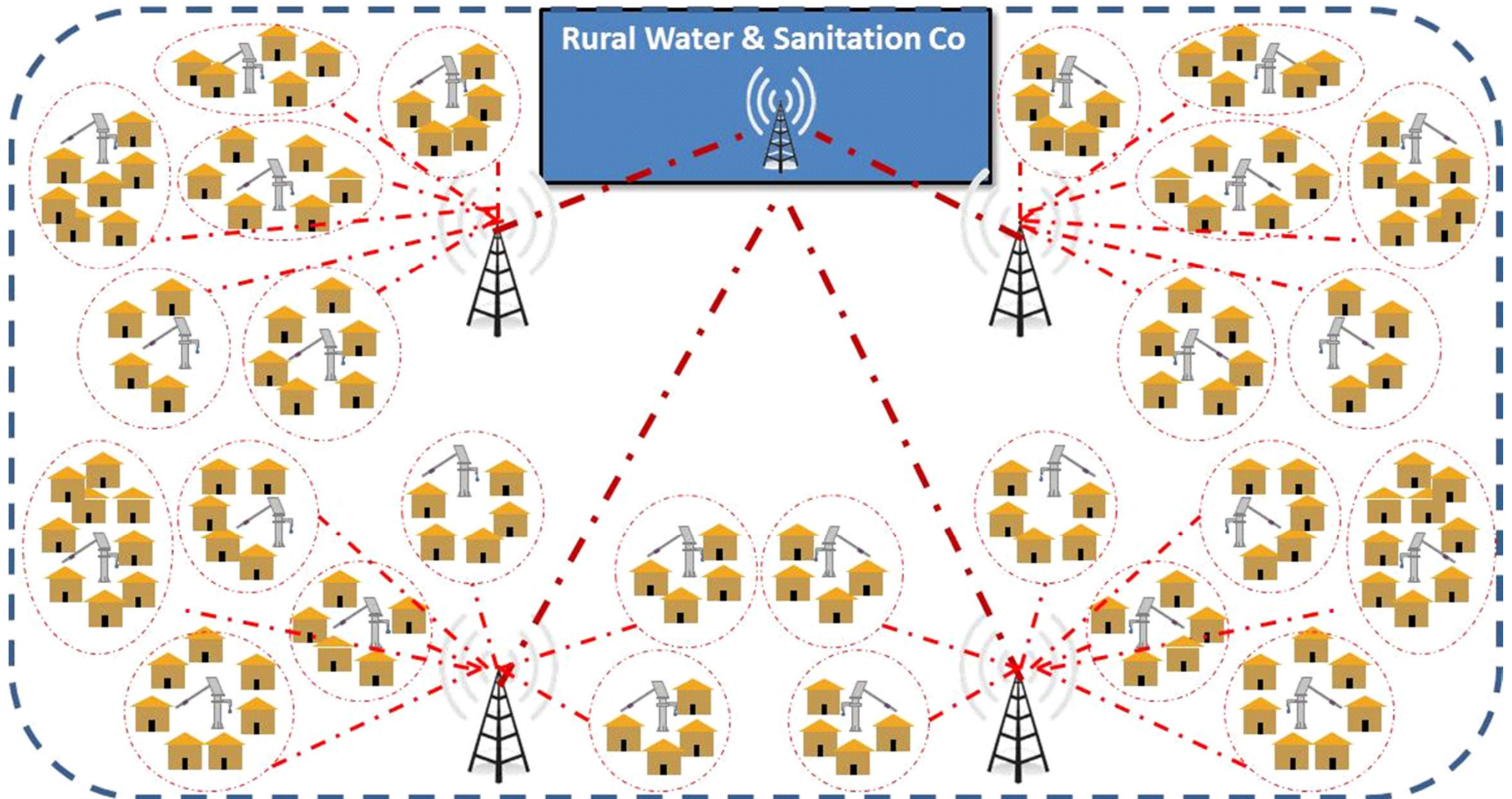
Typical AMR/AMI configuration



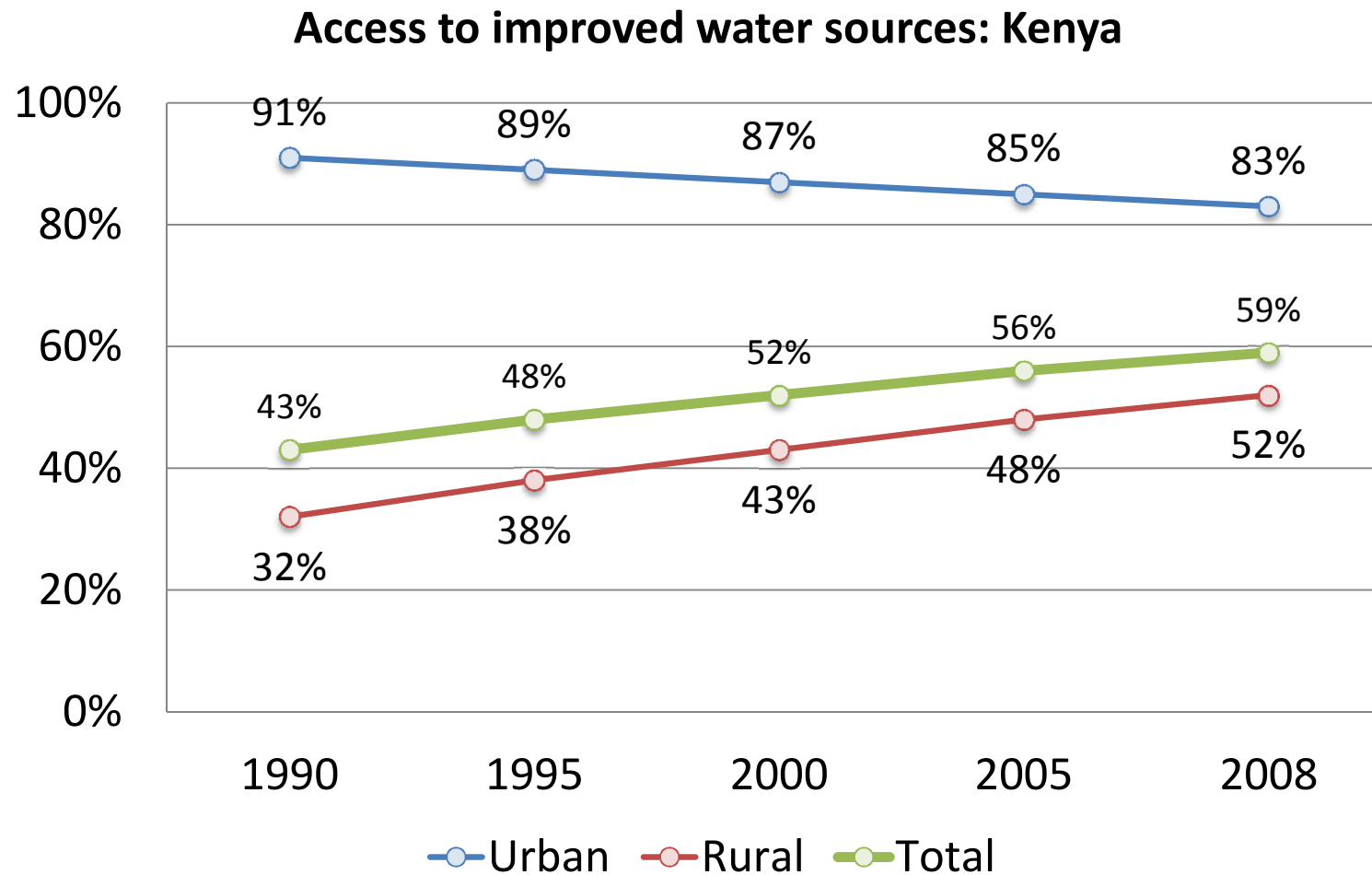
Potential benefits

- Faster/more efficient meter reading
- Theft and leak detection
- Accurate measurement of UfW
- Billing accuracy
- Enabling a flexible tariff structure
- Improved debt collection
- Monitoring resource use

... and opportunities to unlock to new models of operation, maintenance and fee collection in rural areas

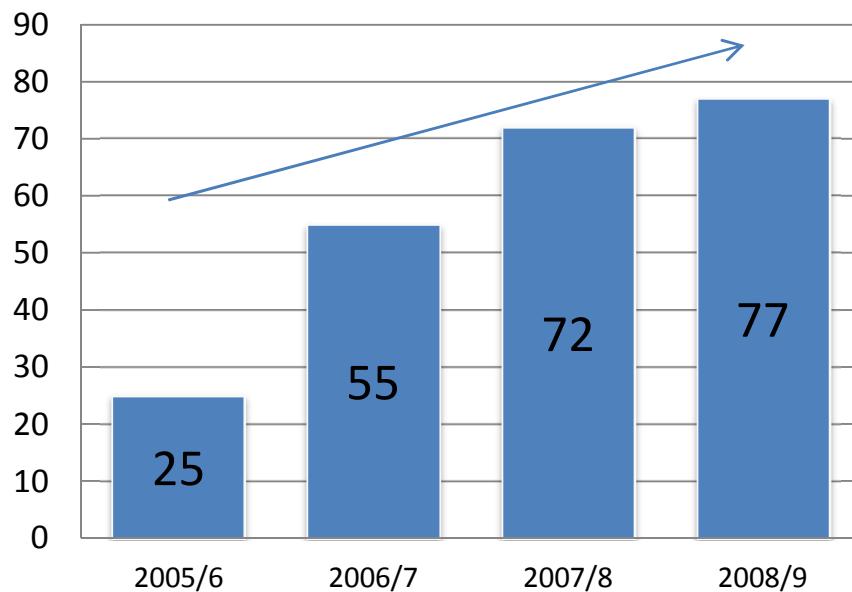


In Kenya, more people have access to improved water services than ever before...

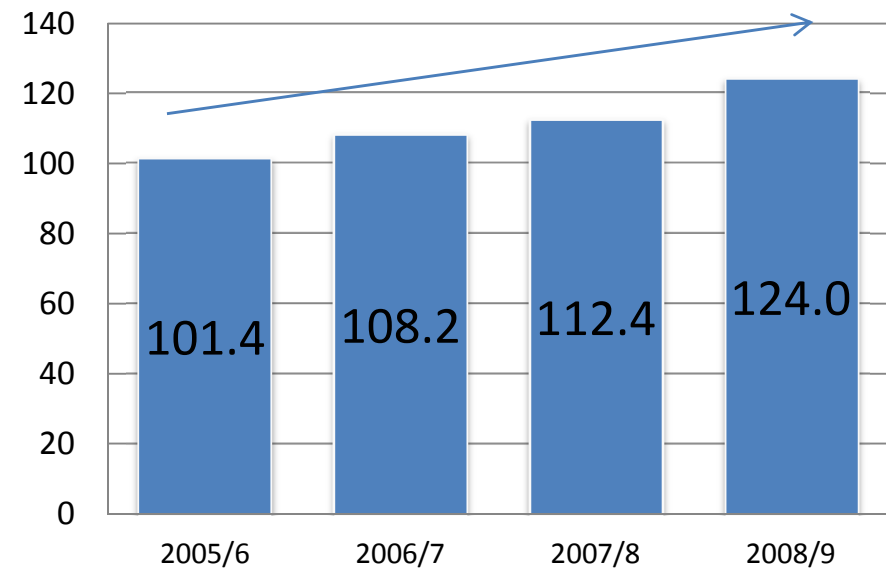


... and water sector reforms are beginning to yield dividends in urban areas

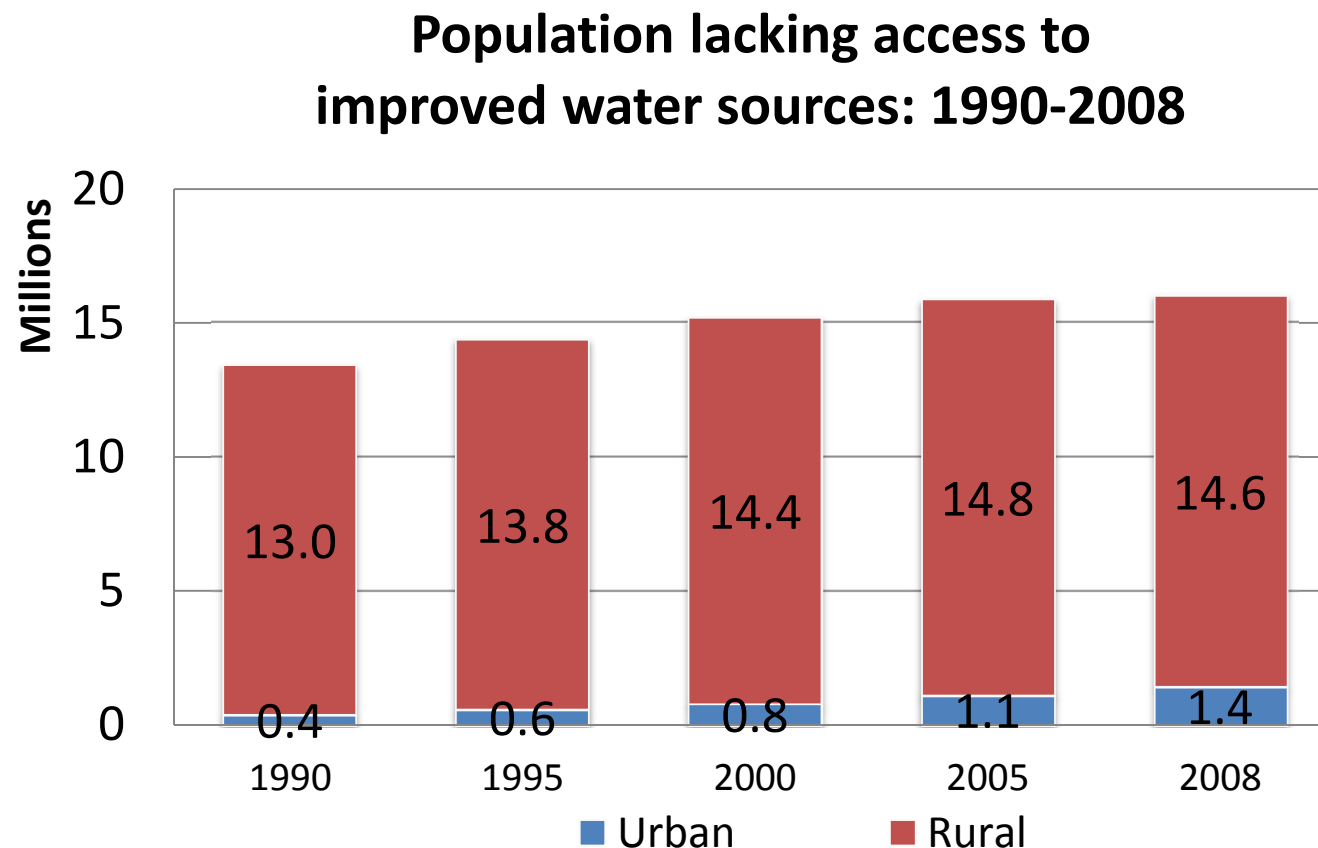
No. WSPs submitting complete data to WASREB



Average performance score for WSPs which have submitted data since 2005/6

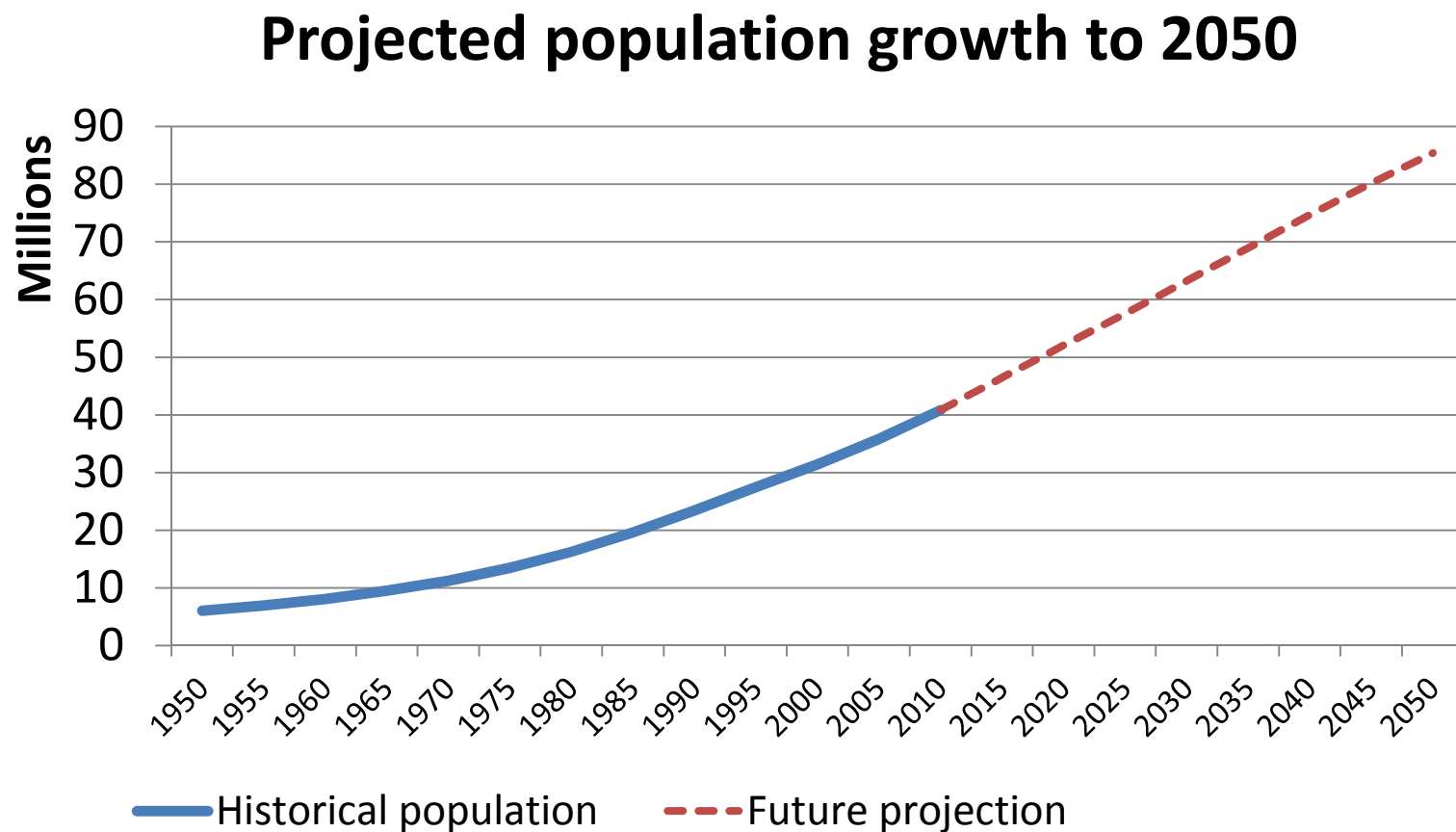


Yet major barriers to accessible and sustainable water services persist...



Almost one-third of handpumps in Kenya are thought to be non-functional

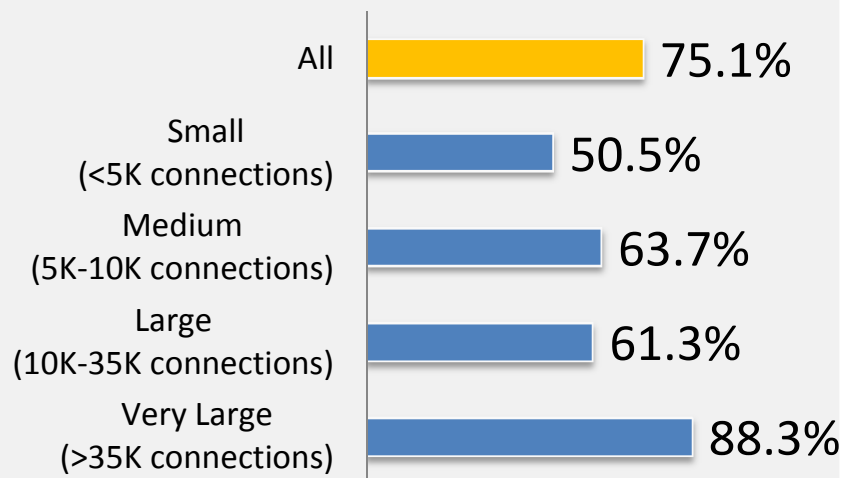
... and emerging trends may introduce new resource pressures



What are the major barriers to the financial sustainability of water service provision in Kenya?

One quarter of urban connections are unmetered

Metering ratio in Kenya by utility size : 2008/9



A 2005 survey in Nairobi found **88.5%** of respondents had functional water meters, yet **28.5%** had never received a water bill

Systemic issues undermine financial sustainability

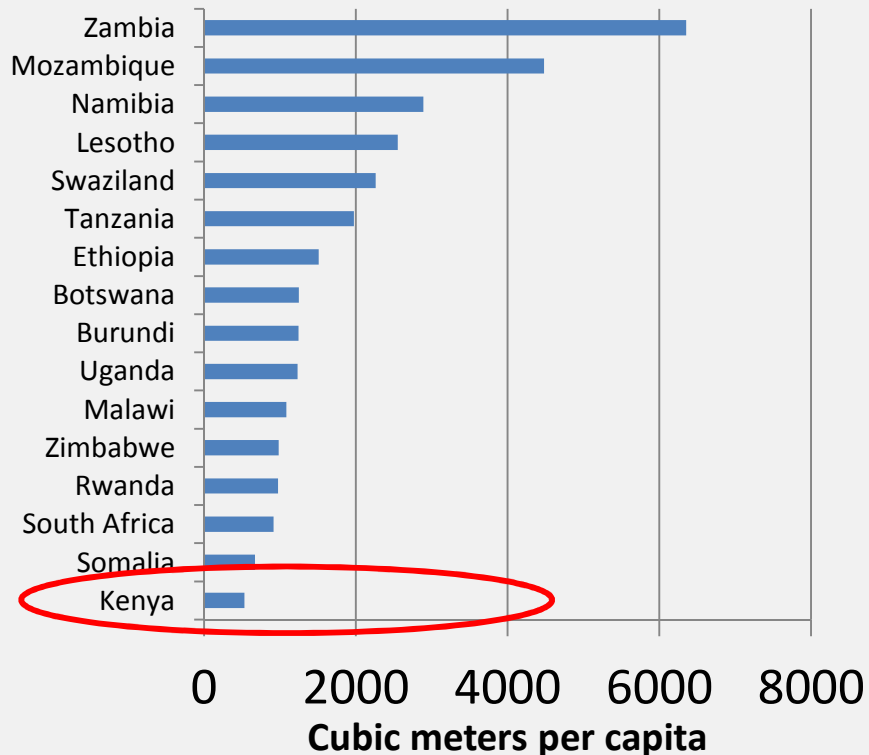
In 2008/9, Kenyan water service providers:

- Had an average collection efficiency of **~84%**
- Lost **~46%** of all water produced through leakages and illegal connections, amounting to a value of **~Kshs. 6.8 billion** - more than **25%** of the sector budget

Understanding the primary resource base is fundamental to sustainable water management

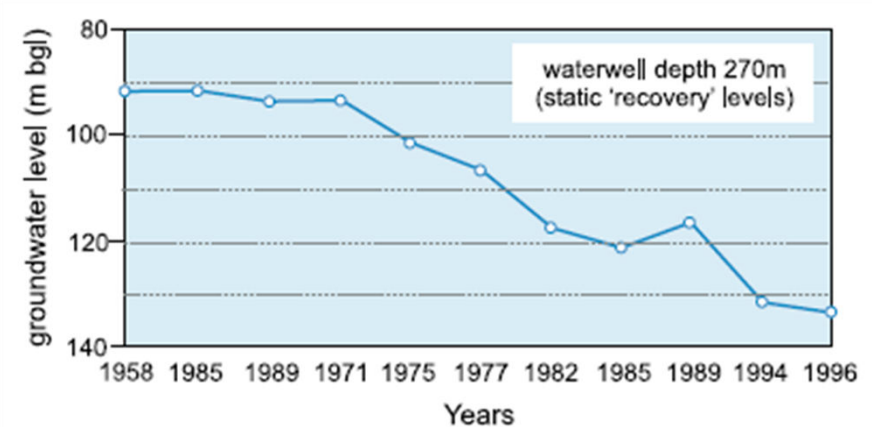
Kenya is one of the most water scarce countries in the region

Renewable internal freshwater resources
in Southern and East Africa: 2008



Gaps in monitoring water abstractions

Groundwater level hydrograph for a water well in Nairobi



In a recent survey of large-scale water users, **46%** did not have a meter for measuring abstraction from water sources

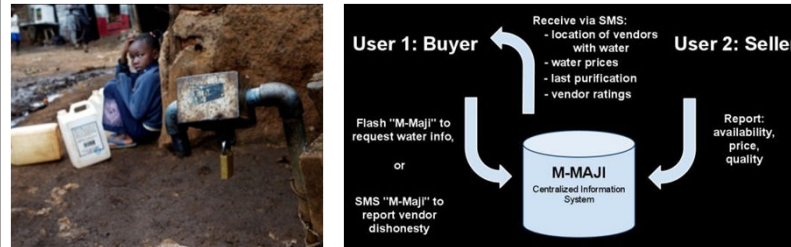
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Positive steps are being taken, but how can new technologies be harnessed for effective, equitable and sustainable water management in Kenya?

Operational performance monitoring in Senegal & Mali



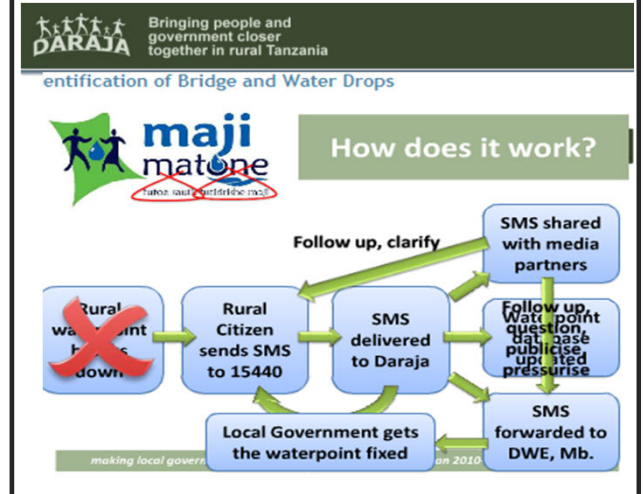
Water quality & pricing information in Nairobi



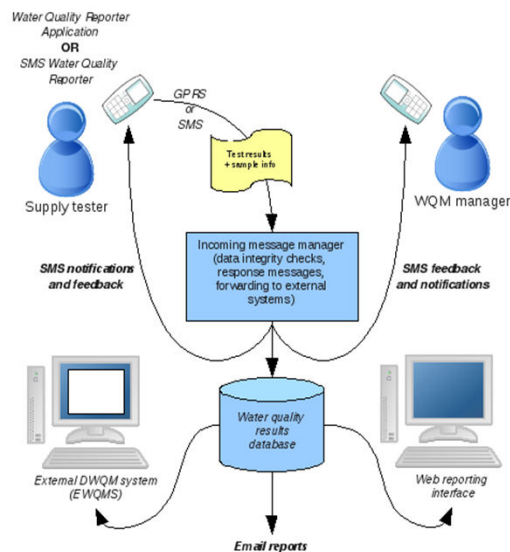
Fault reporting in urban Zanzibar



Fault reporting in rural southern Tanzania



Water quality testing in South Africa



Water point monitoring in Malawi





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Smart Water Systems aim to harness the transformative potential of mobile communication innovations to unlock sustainable water resource and water service challenges for poverty reduction and economic growth. Research examines how rapid advances in mobile communication technologies in developing regions can unlock water security challenges of a) increasing and sustaining water service access for the rural poor, b) creating new business models for urban water services, c) achieving strategic water decision-making at scale, and d) leveraging human developmental impacts and policy action at scale.

<http://owfp.ouce.ox.ac.uk/was/smart-water-systems.php>