



*The **Transformational Use** of **Information and**  
**Communication Technologies** in **Africa***

***Euro-Africa ICT / P8***

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**28 November 2012**  
**Lisbon, Portugal**

**eTransform AFRICA**



# The ICT Opportunity: Mobile Phones



**6 billion**

mobile users  
worldwide

**5 billion** users in  
emerging and  
developing countries  
**65% of adults** in  
sub-Saharan Africa  
have a mobile phone



## Agenda

1. Introduction to WB
2. Transformational power of ICTs
3. Study Objectives & Focus areas
4. Lessons from the sectoral studies
5. Conclusion

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# The World Bank has recently developed new global ICT strategy based around Transformation

## Three Pillars of WBG ICT Strategy

- ***Innovate***

Support ICT innovation for jobs and competitiveness across industries

- Promote ICT skills to develop competitive IT-based service industries in selected countries
- Promote ICT-enabled productivity gains across industries

- ***Connect***

Scale up affordable access to broadband internet

- Support policy and institutional reforms for private investment in broadband
- Selective support of PPPs in frontier markets to promote affordable access for all

- ***Transform***

Use ICT to transform service delivery across sectors

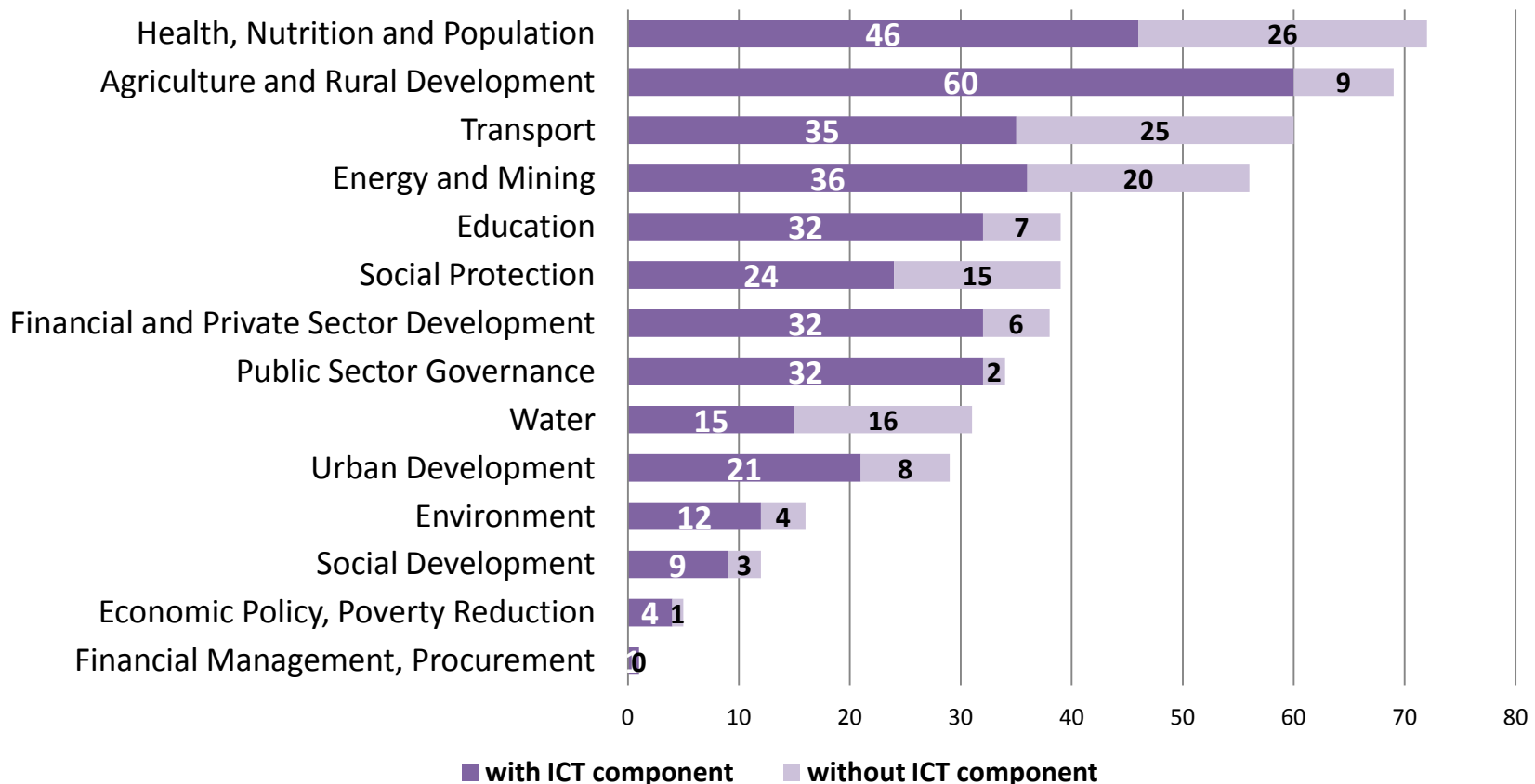
- Promote open and accountable development using open government, open data, and aid accountability
- Transform service delivery using ICT applications in economic and social sectors, and establishing cross-sector foundations



# AfDB and WB finance a lot of ICT already

...but, projects are piecemeal, rarely transformational and are only a fraction what could be achieved.

**Number of World Bank-financed projects with or without ICT component by Sector in Sub-Saharan Africa (2003-2011)**

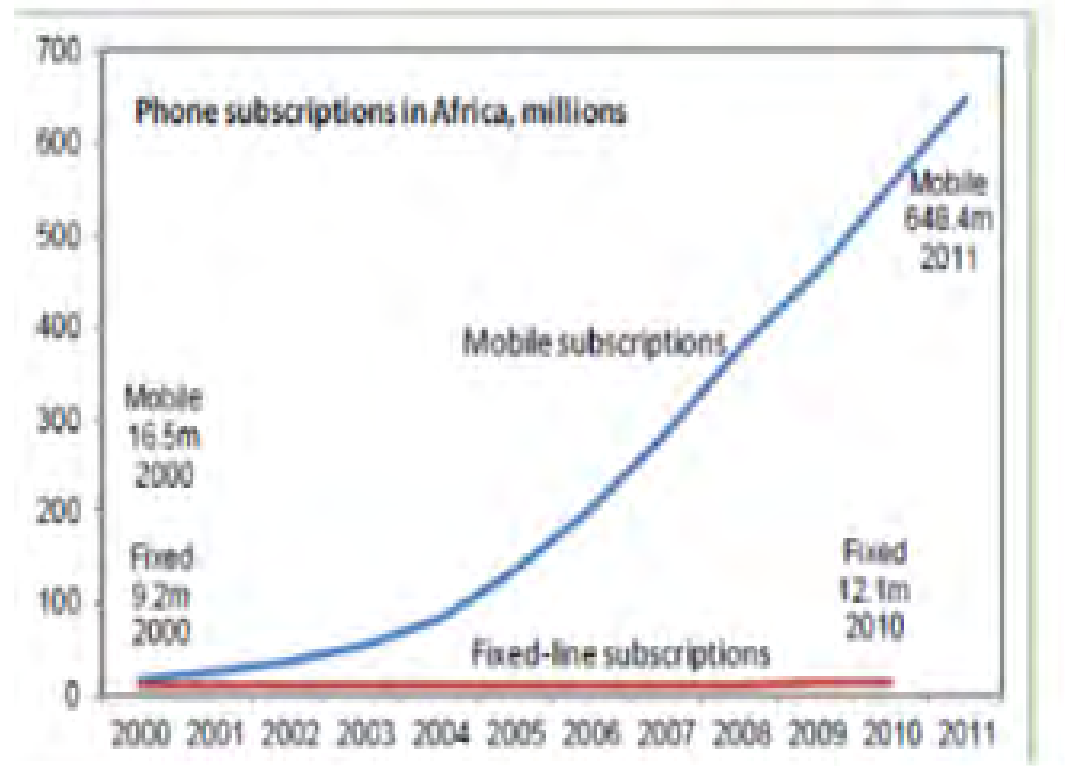


# The transformational power of ICTs

## 1. The mobile phone has revolutionized communications in Africa.

- 648.4 million of mobile subscriptions in 2011
- Growth of internet bandwidth x20 in 2008–2012
- Successful applications (eg M-PESA)

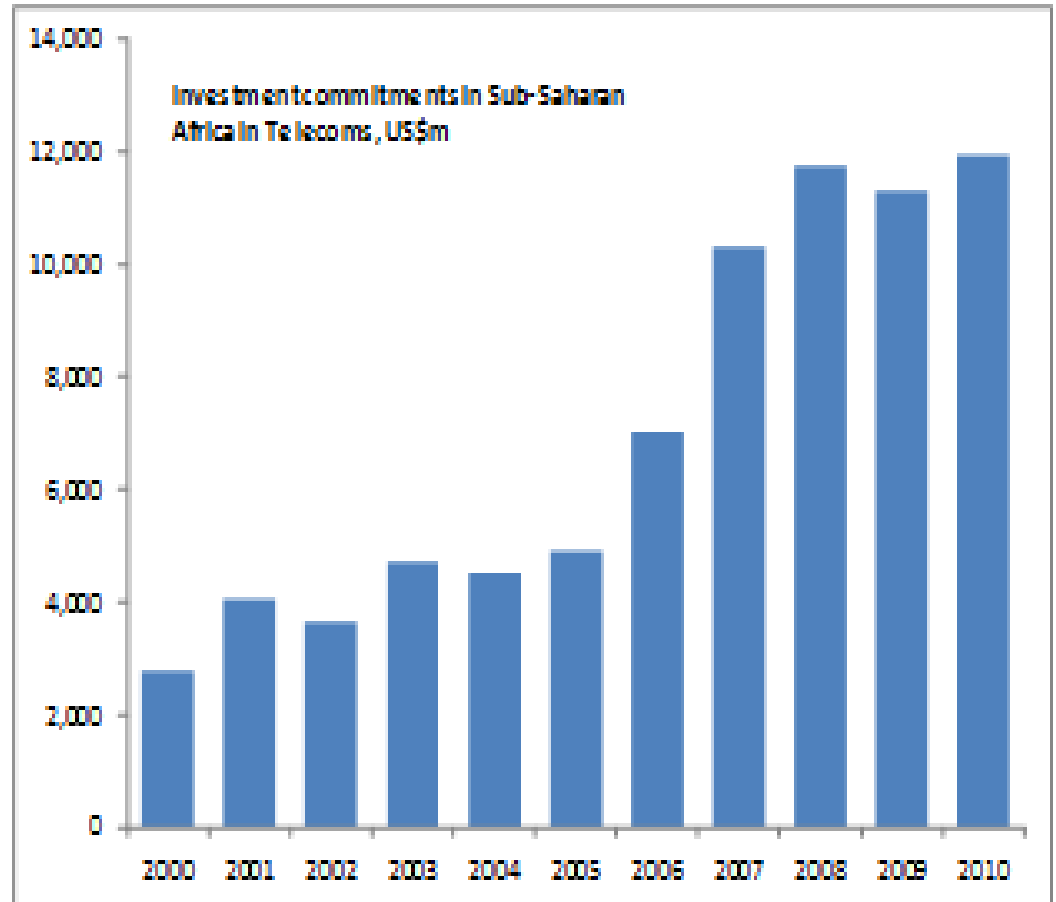
Mobile and Fixed line subscriptions in Africa, 2000 - 2011



# The transformational power of ICTs

## 2. Africa's "mobile decade" has driven its economic growth.

- ICT's contribution to Africa's GDP ~ 6-7%
- US\$56 bn investment from the private sector in telecom
- FDI more than US\$77 billion 2000 -10 to SS Africa



# The transformational power of ICTs

3. ICTs can empower the lives of Africans and are driving entrepreneurship, innovation and income growth
4. It's not about the phone or the computer; it's about the applications and the information they deliver.
5. Governments have an important role to play:
  - in creating an enabling environment and
  - in acting as a lead client for large-scale ICT-based programmes.
6. ICTs can ease cross-border communications, financial transactions and sharing of data and information and have a catalytic impact upon regional integration and trade facilitation
7. The deployment of ICTs and the development of applications must be rooted in the realities of local circumstance and diversity





## eTransformAfrica Study

*Study undertaken by WB, AfDB, with support of the African Union*

**Funding** from AfDB Korean Trust Fund, the WB Pfizer Trust Fund and the WB Africa regional department

*The Transformational Use of Information and Communication Technologies in Africa*



# Objectives of eTransform Africa (i)

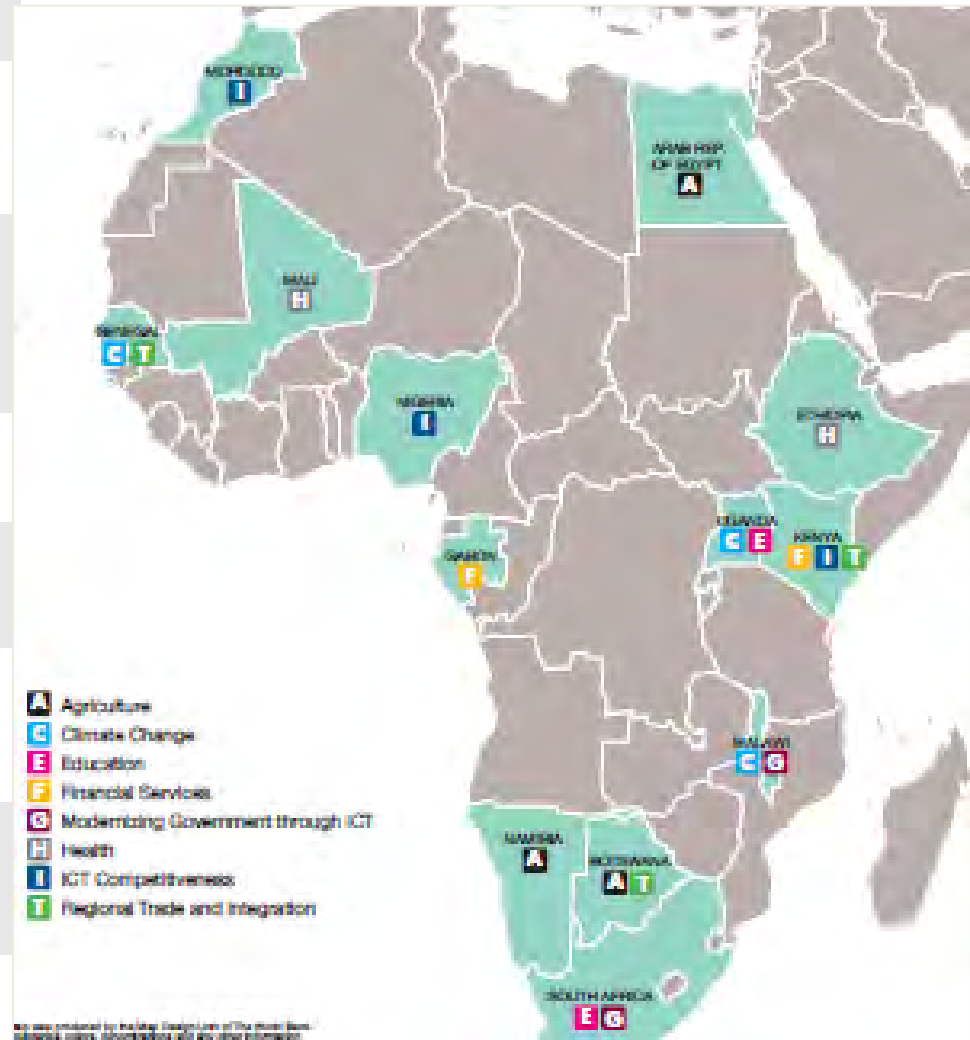
- **Take stock** of emerging uses and applications of ICTs that are having transformative effects of social and economic development
- **Identify key ICT applications** (Africa and worldwide) that have the potential for replications and scaling up
- **Identify constraints** that negatively impact ICT adoption and scaling up, including in policy and regulatory environment
- Commission a representative series of **case studies** to assist in formulating future ICT sectoral strategy
- Develop a **common framework** between the World Bank, Africa Development Bank, African Union and development partner community for future ICT interventions

## Objectives of eTransform Africa (ii)

- Identification of ICT applications with transformative power (high impact) in each of the sectors and with substantial potential for **replication or scaling-up** – within country or regionally – through future government and donor operational programs.
- Identification of the various and differing and complementary roles – **government, private sector, donor community** – in initiating ICT application deployment.
- Identification of **policy gaps** in creating an **enabling environment** for easing deployment (supply) and uptake by end-users/beneficiaries (demand stimulation).

# Sectors and Case Studies

Sector	Focus Areas
Agriculture	Traceability technologies (RFID) in cattle Water management for irrigation
Climate Change Adaptation	Climate change adaptation, exploration of applications, tools and systems for adaptive action
Education	Open schools through mobile technologies, education networking, monitoring student and teacher attendance
Financial Services	Mobile banking, cloud computing,
Health	Mobile health, tracking patients, monitoring health clinics
Local ICT Sector	Business Process Outsourcing, mobile and online payment platforms, e-commerce
Modernizing Government	Citizen/community interface, eFiling for tax collection, link online payment system to IFMIS
Trade and Regional Integration	Linking regional trade entities (eg COMESA, ECOWAS, SADC), logistics, transparent flow of goods, customs standardization



# Lessons from the sectoral studies

## 1. Agriculture (Deloitte)

Case studies :

- Analysis of the use of RFID tags for tracking livestock in (**Botswana**)
- ICT sensor networks used in water management for irrigation (**Egypt**)
- Esoko (**Ghana**) is a good example of ICT in improving agricultural market information services

The cases show how ICT can help address some of the challenges facing agriculture and food security in Africa

**Recommendations :**

- **Consider adoption of traceability systems at a national level**
- **Utilization of ICT for increased irrigation efficiency**
- **Develop Country agriculture strategy maps using a variety of ICT tools including imaging tools such as GIS and satellite technologies**

# Lessons from the sectoral studies

## 2. Climate Change (IISD)

Case studies: **Malawi, Senegal and Uganda**

ICTs role to the impacts of climate change on the potential consequences of climate change, vulnerability to projected impacts, identifying priorities for adaptation

### **Recommendations:**

Enhance *ICT-centric investments* concerned with ICT tools and monitoring infrastructure to support the following

- **Early warning systems, weather management, meteorological systems, satellite and remote sensing systems**
- **Smart systems and sensor networks, mobile phone applications and GPRS**
- **Geographic information systems/modelling/planning and decision-making tools**

# Lessons from the sectoral studies

## 3. Education (*ict* Development Associates)

Case studies **South Africa** and **Uganda**

A critical element concerns :

- access learning materials and collaboration platforms
- Connectivity for accessing learning resources

**Recommendations :**

- **Widening access to ICT infrastructure and connectivity:** support the development of NRENs as a means to enable resource-sharing and collaboration
- **Harnessing ICT to improve management and administration:** Promote data-driven decision-making at all levels
- **Harnessing digital learning resources**

# Lessons from the sectoral studies

## 4. Financial Services (Vital Wave Consulting)

### Recommendations

Case studies:

#### Senegal, Kenya

- Mobile banking has reached a tipping point and now is the time for policy-makers to act boldly.
- Financial inclusion has improved in Kenya - where active bank accounts have grown fourfold since 2007 aided by some 19 million mobile money accounts.

State of Maturity \ Focus	Consumer	Public Sector	Private Sector
Formative State	<ul style="list-style-type: none"> <li>▪ Product diversification</li> <li>▪ Wider consumer identification options</li> </ul>	Engage in policy experimentation in: <ul style="list-style-type: none"> <li>▪ data standardization and alternatives</li> <li>▪ transparent property ownership</li> </ul>	<ul style="list-style-type: none"> <li>▪ Diversify products and capital raising channels</li> </ul>
Scaling State	<ul style="list-style-type: none"> <li>▪ Raise overall awareness</li> <li>▪ Incent and require obtaining ID</li> </ul>	<ul style="list-style-type: none"> <li>▪ Remove artificial levies on technologies</li> <li>▪ Mandate IPv6 transition and compliance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Minimize monopoly and ramp up interoperability</li> </ul>
Desired State	<ul style="list-style-type: none"> <li>▪ Ensure competitive environments and consumer protection</li> </ul>	<ul style="list-style-type: none"> <li>▪ Policy conducive to integrated financial services in place</li> </ul>	<ul style="list-style-type: none"> <li>▪ Full-fledged Interoperability</li> <li>▪ Platforms for basic payments as semi-public products</li> </ul>



# Lessons from the sectoral studies

## 5. Modernizing Government through ICT (Deloitte)

Case studies:

- Integrated financial management systems (**Malawi**)
- Electronic tax filing (**South Africa**)

ICTs are fundamentally changing the way in which citizens and businesses interact with government representatives and other agents of the state.

**Recommendations:**

- **Accuracy, completeness and relevance of what is communicated is important**
- **Pilot cloud computing in independent election monitoring**
- **Establishment of accurate, effective and efficient national identification systems, Is key building blocks for an effective government service delivery**

# Lessons from the sectoral studies

## 6. Health (Vital Wave Consulting)

Case studies of holistic value-chain approach to health care (**Ethiopia**) and **IKON** teleradiology program (**Mali**)

**Recommendations :**

**Use ICTs to improve the following**

- **Supply chain including procurement and delivery of equipment and medical supplies through a mobile supply chain management and equipment tracking system in which mobile devices (phones, PDAs, tablets, laptops)**
- **Outreach to rural areas, and by providing communication between rural healthcare extension workers and trained nurses and doctors in peri-urban facilities**

# Lessons from the sectoral studies

## 7. Regional trade and Integration (ict Development Associates)

- The cross-cutting study included case studies of **Botswana, Kenya and Senegal**
- The studies focused on ICT use in governance, logistics and cross-border information exchange mechanisms

### Recommendations:

- **Deploying ICT-enabled applications at critical points along the supply chain e.g. customs, ports and border crossings**
- **Developing national single window systems for data management**



ICTs and trade – the supporting environment

# Lessons from the sectoral studies

## 8. ICT Competitiveness (Excelsior / TNO )

Case studies of **Kenya, Morocco and Nigeria**

Provided the African ICT market continues its impressive double-digit growth, the market could be worth more than US\$150 billion by 2016

### Recommendations:

- **Reduce the cost of access for mobile and broadband**
- **Support government private-sector collaboration**
- **Improve the e-commerce environment**
- **Improve ICT worker skill levels**
- **Encourage innovative business models that drive employment (e.g. microwork, BPO)**
- **Create ICT parks in countries that meet infrastructure requirements**
- **Support ICT entrepreneurs**

# Conclusion

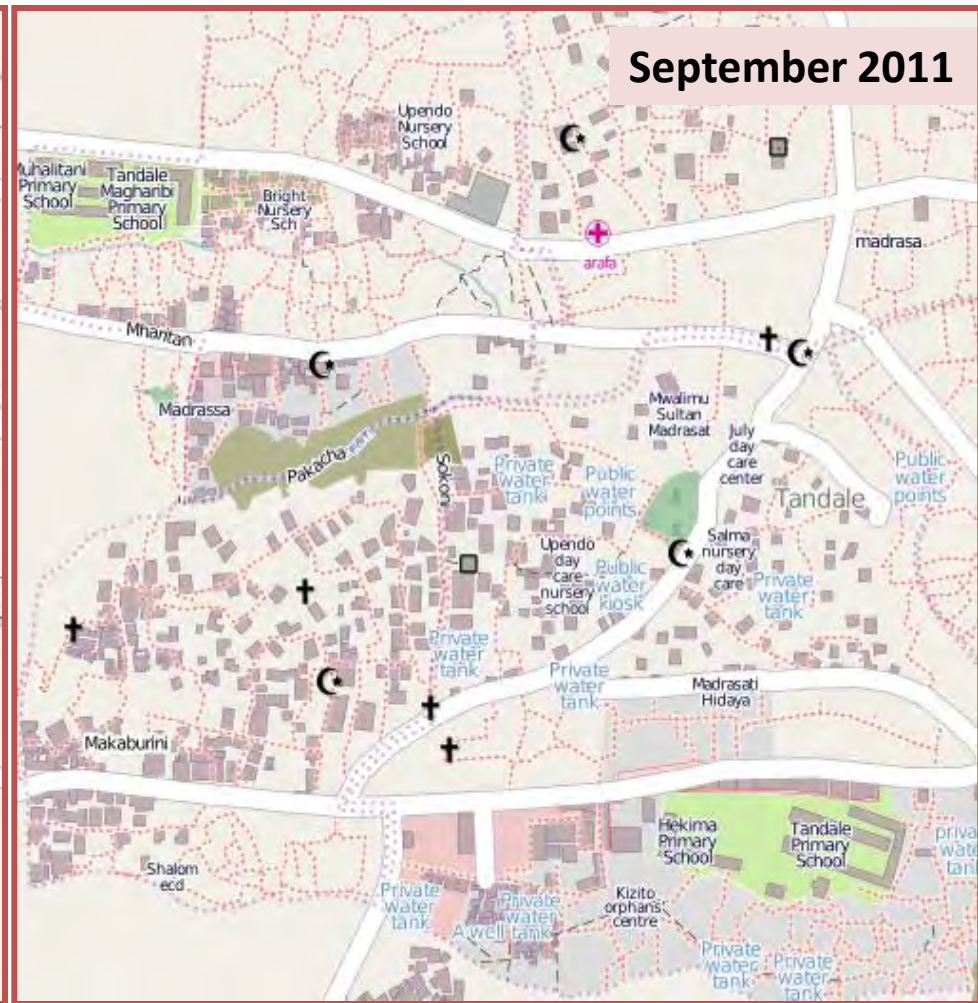
- Africa's challenge for the next decade is to build on the mobile success story and complete the transformation.
- Now is the time for rigorous evaluation, replication and scaling up of best practice and pilot programs.

## **Ability to do this it will require:**

- **Reducing the cost of access for mobile broadband**
- **Supporting government private-sector collaboration**
- **Improving eGovernment and eCommerce environment**
- **Enhancing ICT labor market skills**
- **Encouraging innovative business models that drive employment, such as microwork and BPO**
- **Creating spaces that support ICT entrepreneurship, such as ICT incubators, and local ICT development clusters.**

# ICT enabled transformation

## Tandale unplanned community in Dar es Salam



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eTransform **AFRICA**



**The World Bank Group  
and the African  
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ready to assist our  
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