



m.Paani 



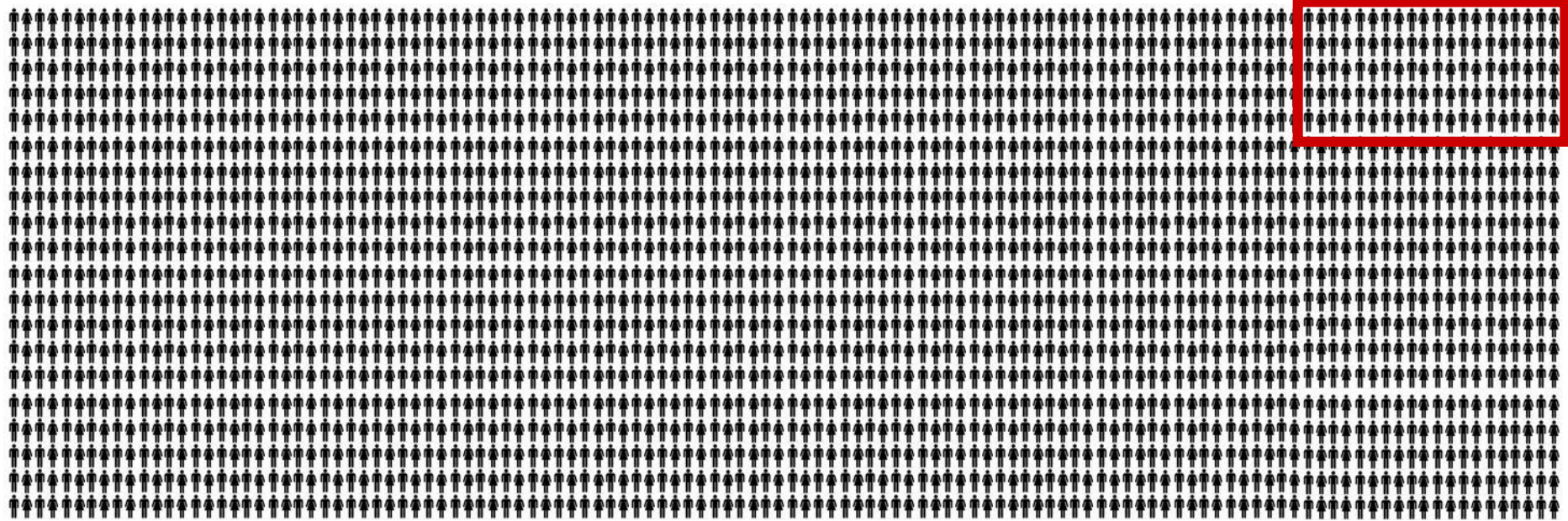
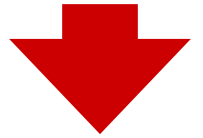
UNIVERSITY OF
CAMBRIDGE
Judge Business School
ah643@cam.ac.uk



Fabio Scappaticci
Akanksha Hazari
Alejandro Mora
Oremeyi Akah
Yutaro Kojima

1 Million

=





2.5 billion people
don't have access
to sanitation

1 billion people
don't have access
to safe water

BUT

5.1 billion people
have a mobile phone

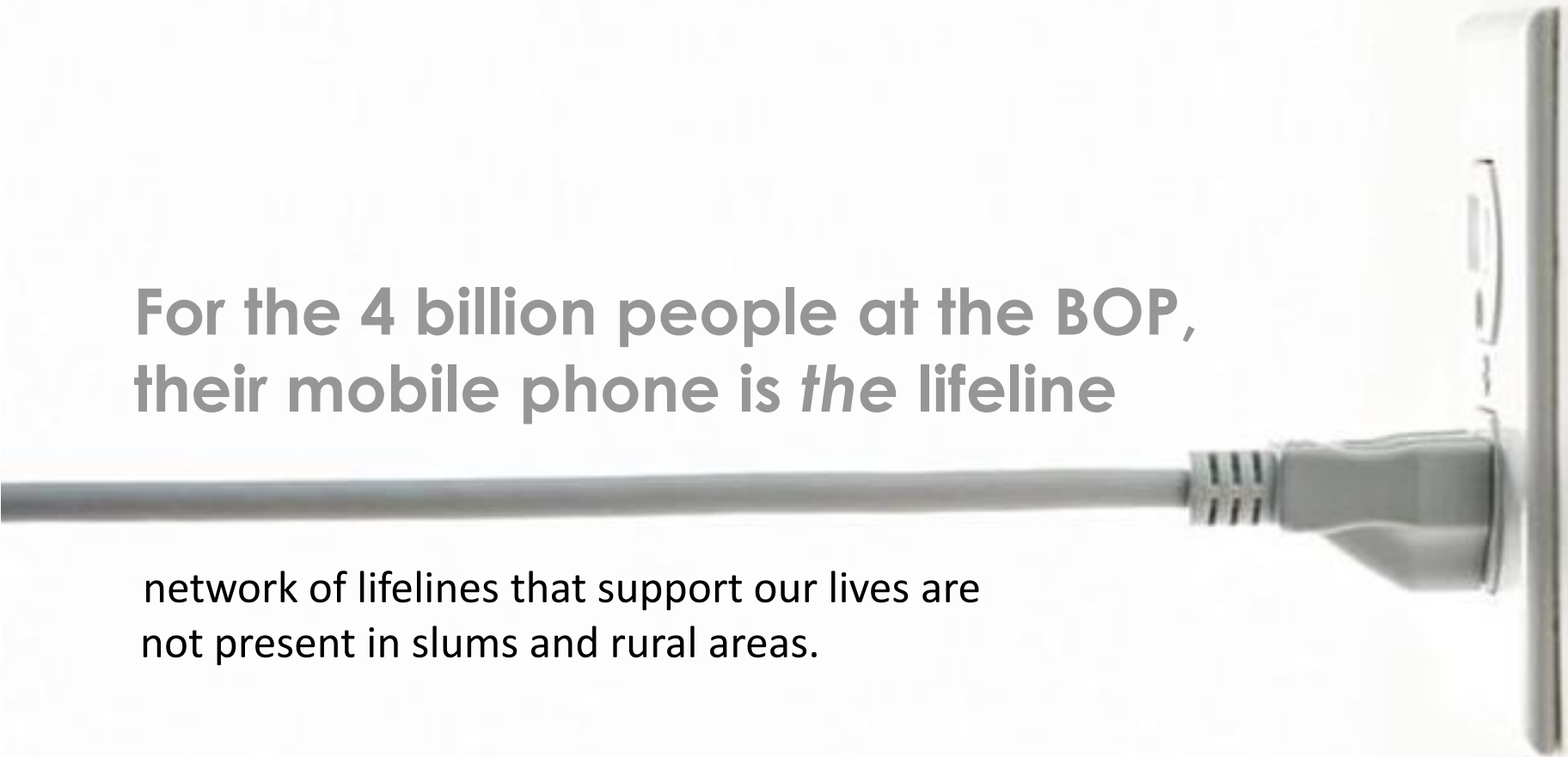
That is...

68%

Of people
in developing
countries!

For the 4 billion people at the BOP,
their mobile phone is *the* lifeline

network of lifelines that support our lives are
not present in slums and rural areas.



Mobile phones power the lives of the poor

Healthcare advice and guidance

Communication for livelihoods

Basic Communications

Education tools

Access to jobs

Mobile banking

Who spend **\$51.4 billion** every year on mobile phones

INDIA



Telecoms compete for customers even at the BOP



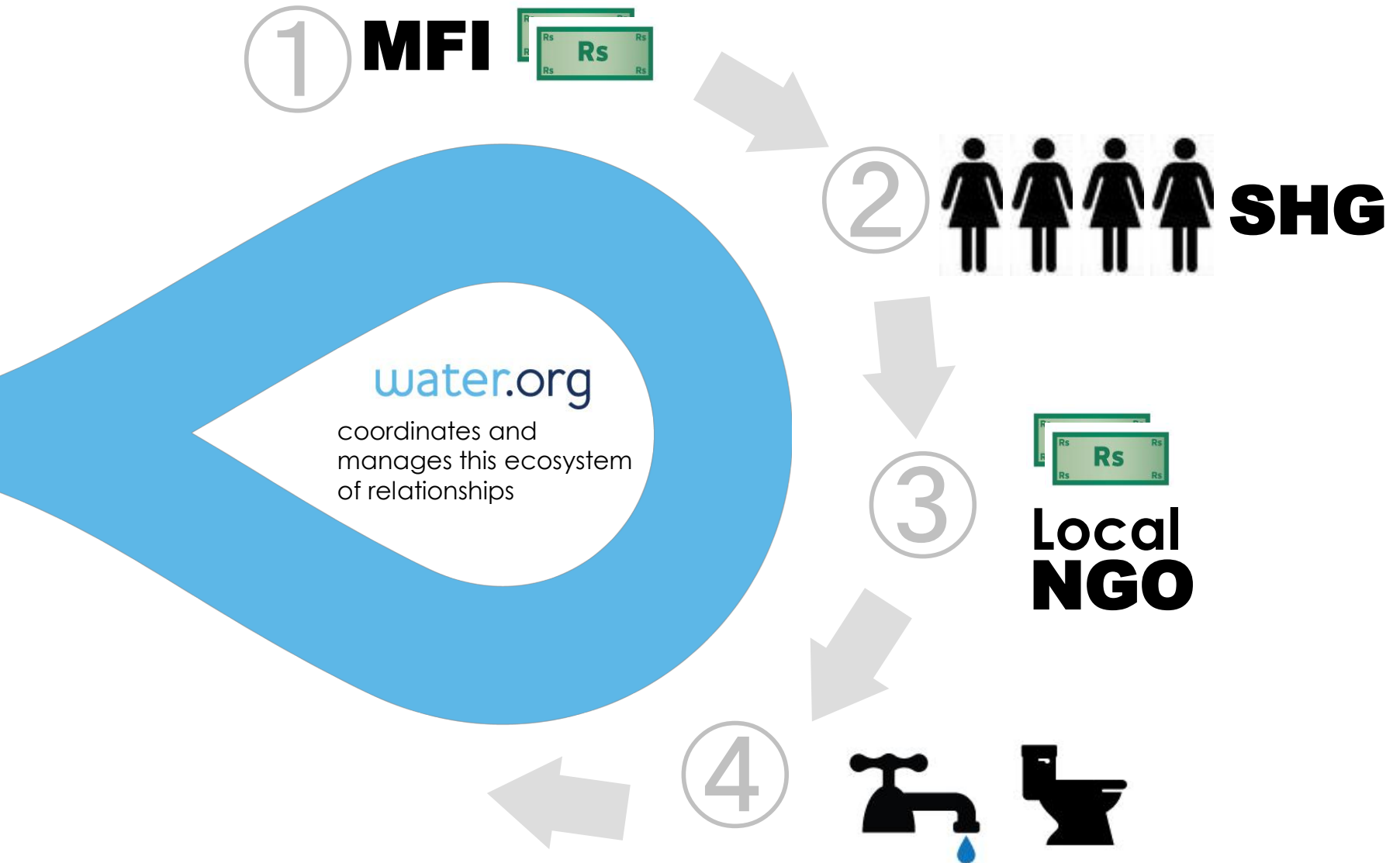
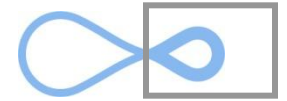


m.Paani 

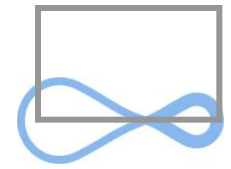
Building a healthier tomorrow

water.org™

Leveraging WaterCredit 2.0



Creating value through incentives



6

\$+ 



vodafone

\$

RELIANCE

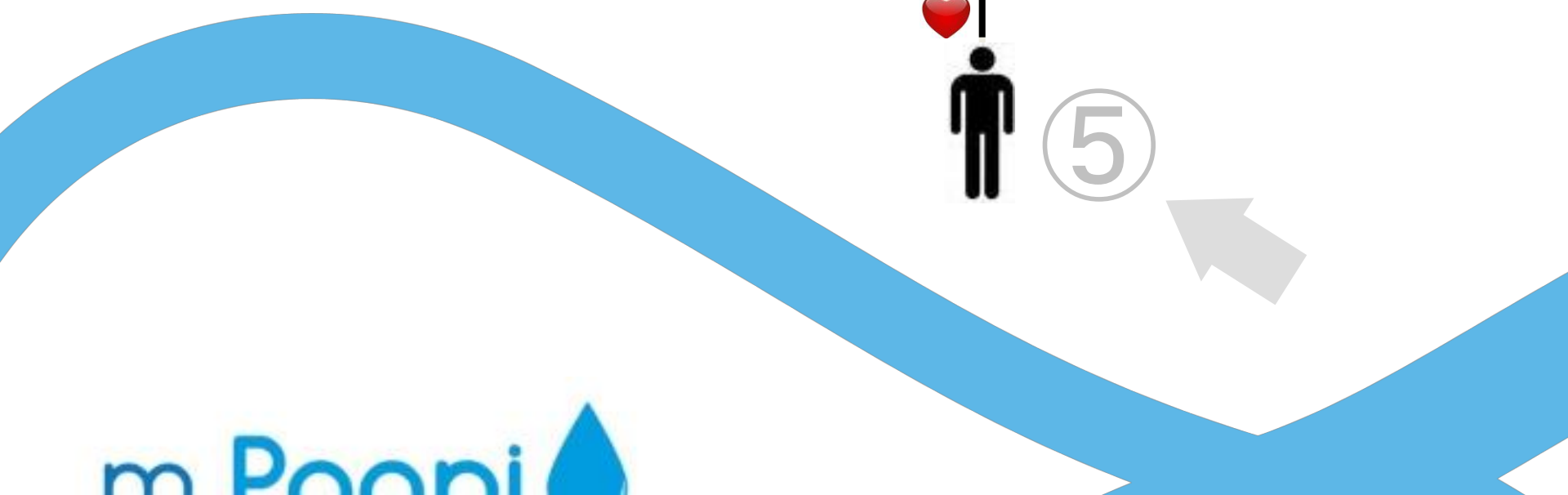
\$

Airtel

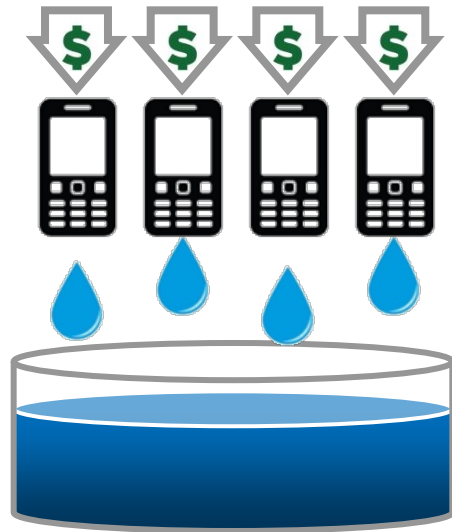
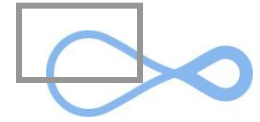


5

m Pooni 



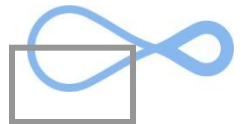
Growing a local Drop Fund



Drop Fund



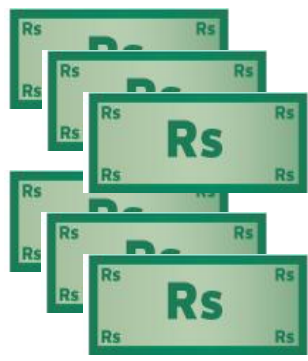
m.Poani 



Repayment & Investment



8



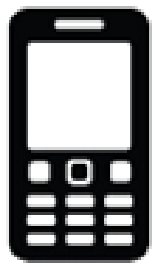
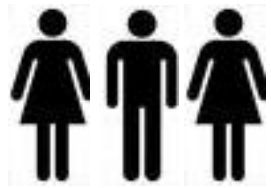
**Philanthropic Cost/
Subsidising WATSAN**



**Maintenance/
Education**



9





**ICT Spend per
household per year**

\$160.5

That is

\$751,622

per year in Kianda

Kianda
{ Kibera }

● Water
115

● Sanitation
285

Economics of m.Paani in Kianda

Subsidizing community WATSAN

Cost of WATSAN connections	\$100
m.Paani community subsidy	<u>30%</u>
Cost of WATSAN subsidized per HH	\$30



TOTAL COST PER HH \$62.5



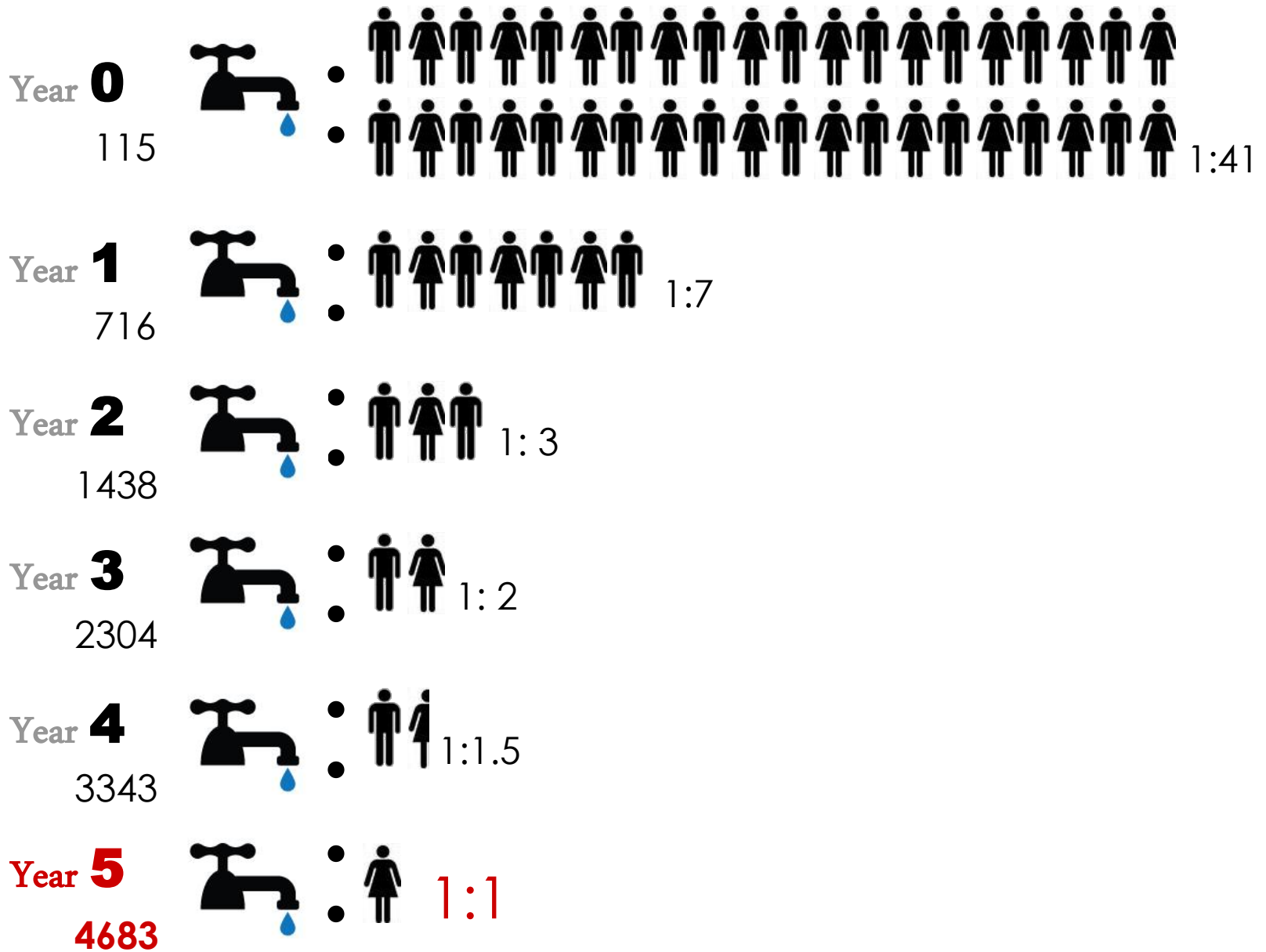
Eliminating philanthropic cost

Philanthropic cost per person	\$10
Average no. people per HH	<u>3.25</u>
Philanthropic cost per HH	\$32.5

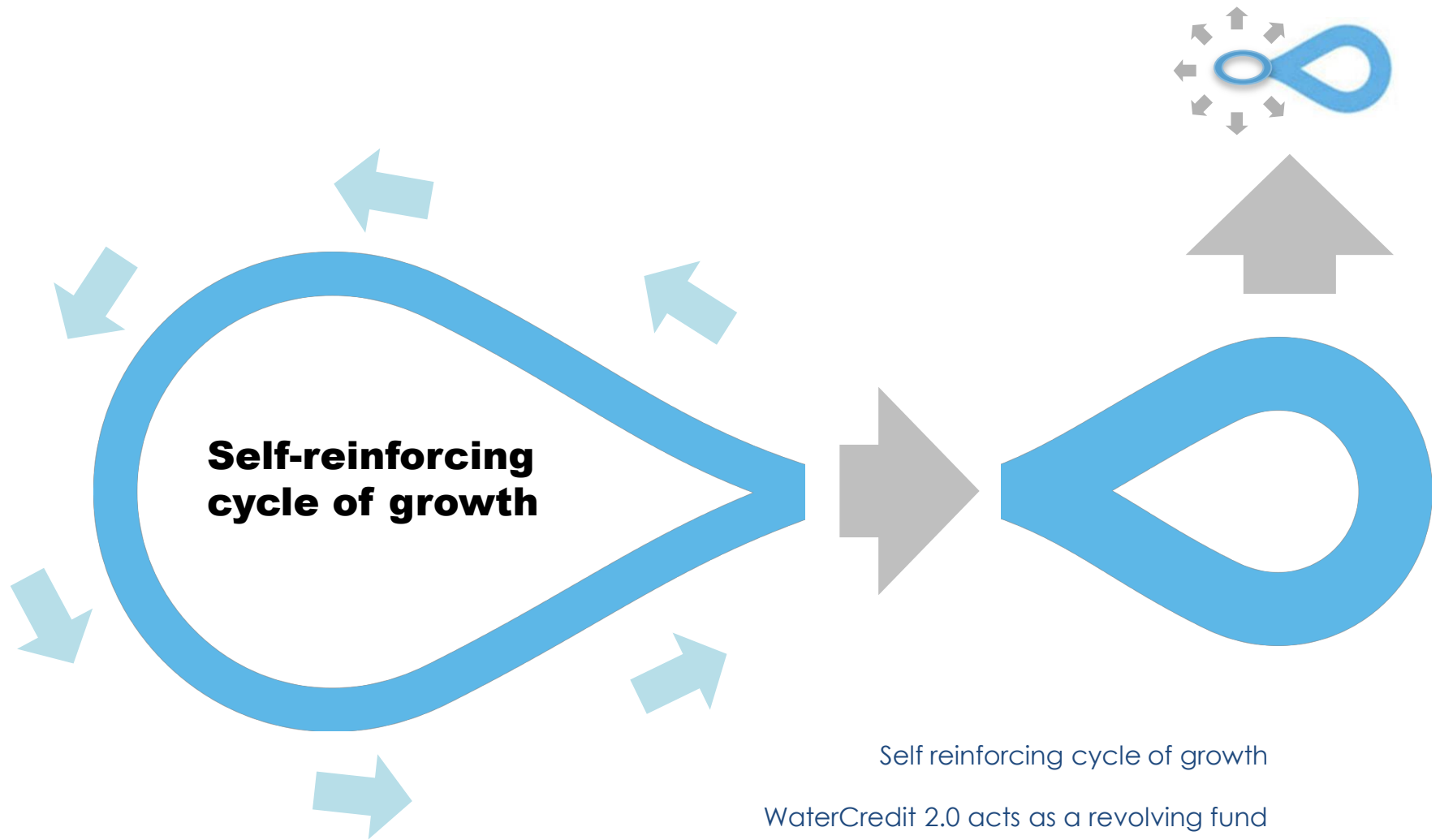
Number of HHs	4683
ICT spend per HH/yr	\$160.5
Total ICT spent/yr	\$751,622
m.Paani telecom loyalty program incentive	5%
Drop fund per year!	\$37,581

Total cost per HH \$62.5

601 new water and sanitation connections in the first year alone!

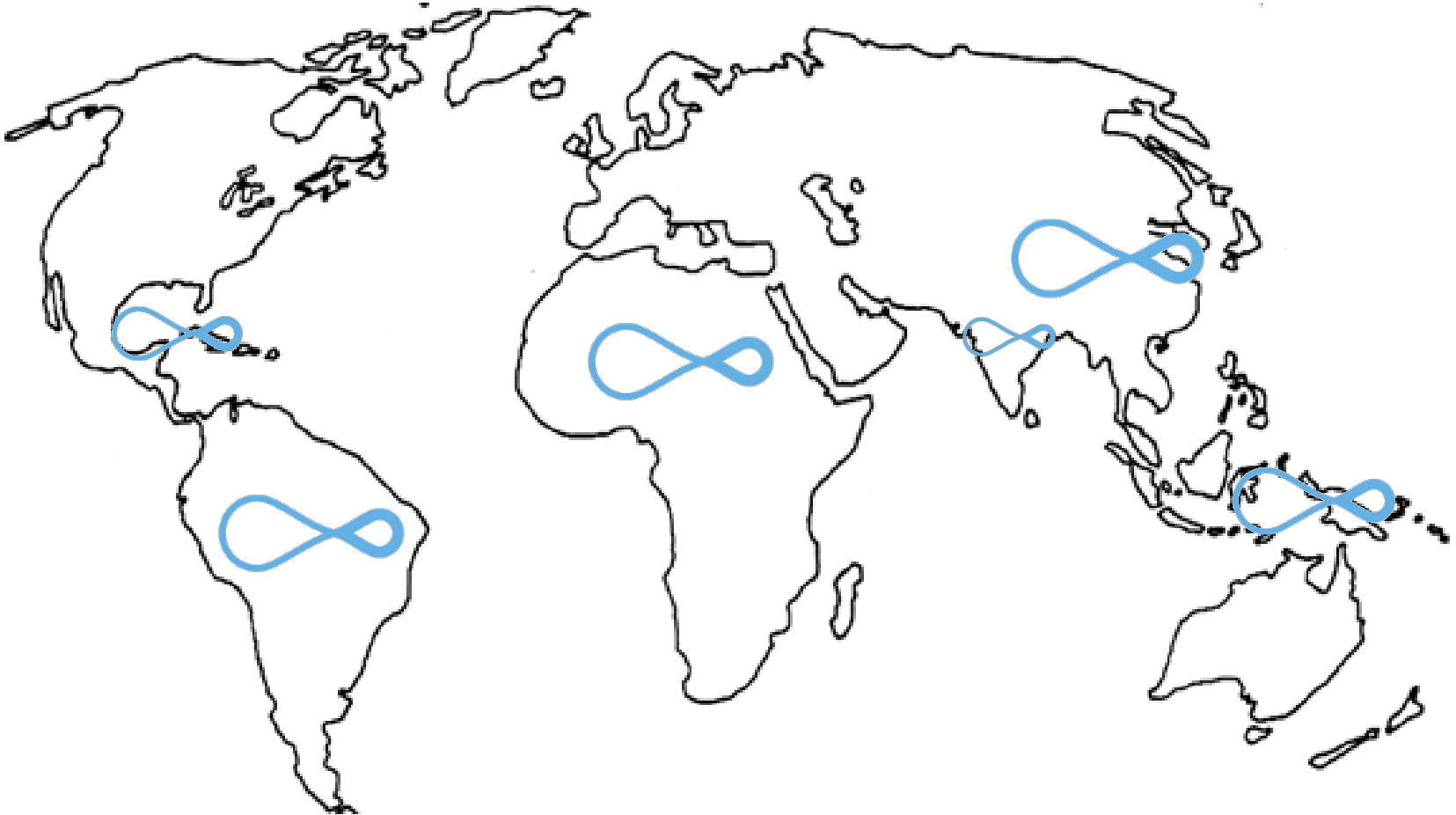


m.Paani Sustainable, Scalable



Water.org and the partner MFI can replicate m.Paani in new communities, extending the reach of the water and sanitation solutions

m.Paani  Open architecture, local solutions

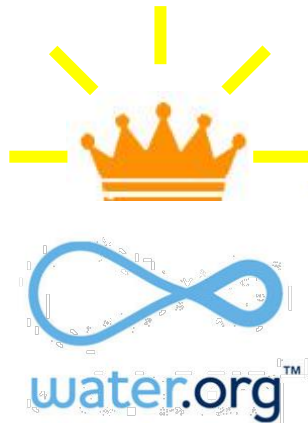


m.Paani A win-win-win business model



Community:

- Healthier & more productive
- Security & dignity
- Build credit history
- Empower communities



Water.org:

- Enhance services
- Build key relationships
- Eliminate philanthropic cost per beneficiary
- Scale and sustain impact



Telecom:

- Increase margin & market share
- Reduce churn, build loyalty
- Maximize value derived from existing infrastructure
- Do well, do good



“m.Paani places decision-making power in the hands of those who will benefit most from investments in water and sanitation.”

Richard Carter | Head of Technical Support



“m.Paani identifies and connects fundamental needs with market trends to build an innovative and attractive business model for telecommunication companies in developing countries. It will expand service offerings and drive economies of scale.”

Hakeem Belo-Osagie | Chairman, etisalat Nigeria



“The loyalty program helped us increase market share and profit margin in the highly competitive U.S. airline industry. The m.Paani model has the potential to do the same for telecom providers in developing countries.”

Rob Britton | Former advisor to the Chairman of American Airlines



“This is social entrepreneurship at its best. m.Paani combines deep insight into local market dynamics, an innovative and credible business approach with a healthy dose of desire to change the world. It is a winning model which is good for underserved communities AND good for business.”

Hans Peter Brøndmo | Head of Social Software



“m.Paani creates multi service innovation. It is highly adaptable to different environments at each level. m.Paani is a scalable solution.”




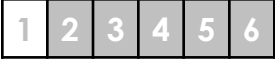
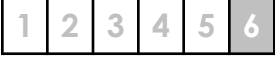

Michael Barrett | Innovation Specialist

Appendix

Appendix | Plan

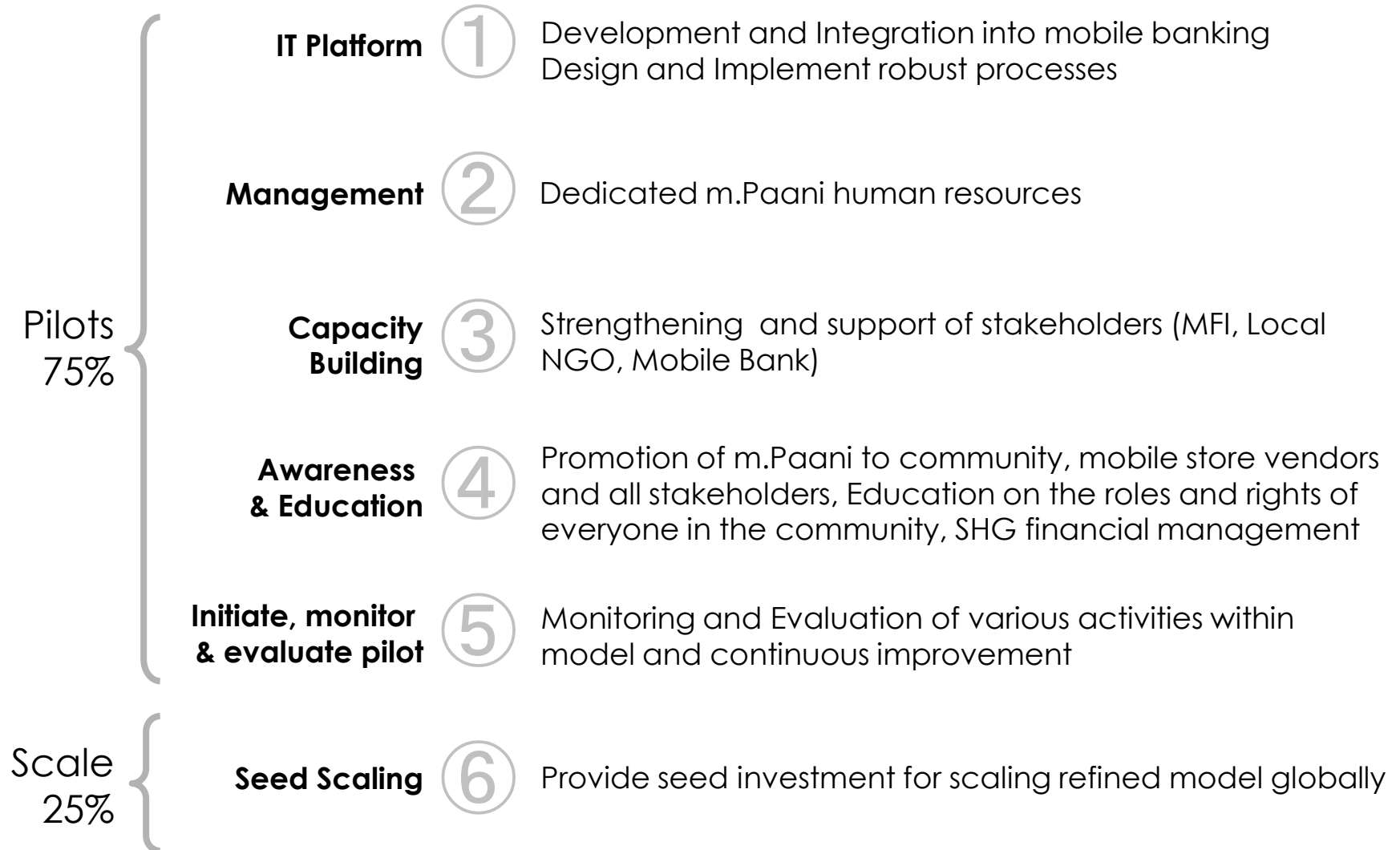
Budget: \$1million Time line: 6 months

3 Pilot Projects in 3 Locations: Nigeria, Kenya, India

- | | | | |
|---|----------|--|--|
|  | 1 | Select pilot location | Screen for key resources and behaviours for m.Paani e.g. Water.org presence, high mobile penetration |
|  | 2 | Create m.Paani ecosystem | Select and build relationship with key stakeholders, e.g. Community, Local NGO, MFI, Telecom provider, Water Utility |
|  | 3 | Design loyalty program and develop platform | Design loyalty program and incentive scheme, Develop platform and interface, Train and coordinate partners |
|  | 4 | Engage and educate urban slum community | WATSAN training, Education in m.Paani model & Drop Fund finance mng, Engagement with key community partners |
|  | 5 | Initiate, monitor and evaluate pilot | Launch program, Monitor various activities within model and adjust accordingly |
|  | 6 | Scale-up | Refine model based on learning – Scaling involves coordinating, supporting, supplementing |

Appendix | \$1 000 000 Investment Plan

3 Pilot Projects in 3 Locations: Nigeria, Kenya, India



Appendix | m.Paani Risks

Risks	Mitigation
Non Payment WaterCredit	➔ SHG will be responsible of payment of WaterCredit not paid by any of its members
Similar Loyalty Schemes	➔ m.Paani will work under exclusivity agreements with Utilities, Telecom Providers, MFIs and NGOs in each new area for first 5 years
Internal Community Conflicts	➔ Training will be provided to SHG by local NGOs to manage drops fund. A SHG leader will be appointed.
Multi SIM Cards	➔ SHG will track every member's contribution. m.Paani will build up loyalty towards one Telecom Company.
Switching Telecom Provider	➔ First 5 years: They won't get watsan infrastructure ownership. After first 5 years: They won't get maintenance costs paid by m.Paani.
Missing Trust	➔ Local NGO will be the connection between the MFI/Water.org/Telecom Provider and the Community

Appendix | Strategy for scaling

PHASE I Coordinate

Select locations where all stakeholders are active and strong

Primary role is connecting and building partnerships, to implement m.Paani

PHASE II Support

Select locations where all stakeholders are active, but weak

Need to strengthen stakeholders through capacity building and training, before moving to 'coordination' and implementation

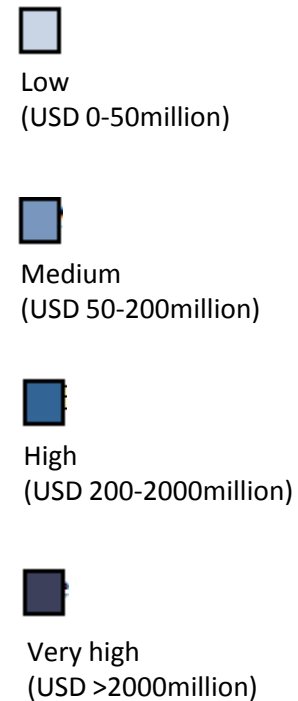
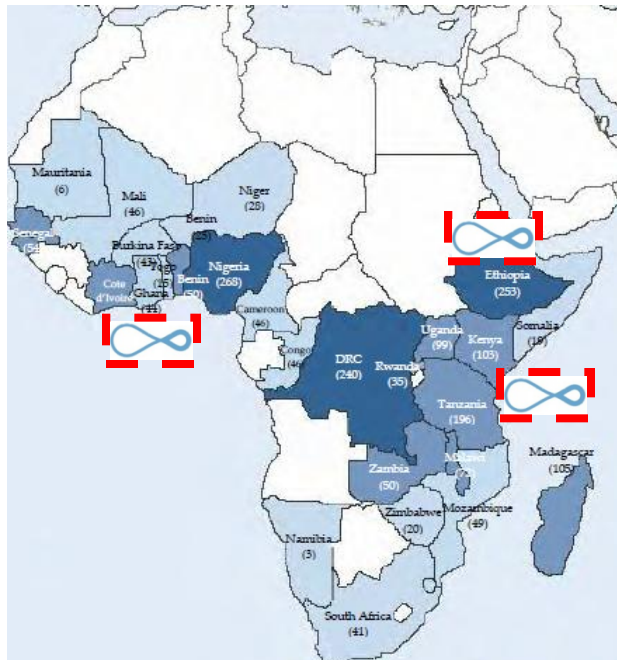
PHASE III Supplement

Select locations where most, but not all, stakeholders are present

Supplement ecosystem by building missing stakeholders

Thereafter moving into support, coordination, and implementation

Countries with total potential loans for water and sanitation, 2005-15



Appendix | A win-win-win business model



Water.org:

- Philanthropic cost/beneficiary is reduced
- Able to recuperate 'smart subsidy' and any other infrastructure investment
- Able to leverage mobile network to provide additional services, such as, 'watsan lesson of the day'
- Ability to scale providing access to clean water & sanitation to millions globally
- Build partnership with key telecom players to benefit local communities

Real opportunity to eliminate philanthropic cost in the long term

Community:

- Access to clean water & sanitation infrastructure
- Increased economic productivity of women
- Increased time for children's education
- Secure & dignified facilities for females
- Education in hygiene practices
- 'Empowered' to earn funds to improve community
- Built credit history
- Healthier more productive community

Empowering communities to invest in their own futures

Telecommunication providers:

- Acquire new customers in key growing market segment, over competitors
- Build long term relationships with customers
- Maximize value derived from existing telecom infrastructure
- Ability to position themselves as socially responsible

BOP market for ICT is...

\$28.3 billion in Asia

\$13.4 billion in LATAM

\$4.4 billion in Africa, and rapidly growing!

Appendix | m.Paani ecosystem

Community (SHG)

- Invests in and owns WATSAN infrastructure
- Manages Drop Fund
- Manages collective commitment to telecom partner

Water.org

- Coordinates and manages ecosystem and relationships
- Enables MFI and Local NGO
- Protects community interests
- Supports and oversees Drop Fund

Telecom

- Designs competitive mobile loyalty program
- Develops interface and platform
- Markets and promotes loyalty program
- Supports education on loyalty program within local communities

Utility (or local equivalent)

- Facilitates construction of WATSAN in slums
- Supports payments via mobile banking, providing discount

NGO

- Coordinates between Stakeholders on the ground
- Builds and maintains WATSAN infrastructure
- Leads community WATSAN education; m.Paani preparation and training
- Supports and monitors Drop Fund

MFI

- Provides credit for WATSAN infrastructure, and related financial products and services
- Supports financial literacy education in communities

Mobile Bank

- Tailors and integrates platform and interface to m.Paani
- Facilitates movement and management of capital
- Provides transparency to protect against corruption

Appendix | Kianda Case study

- Number of House Holds: **4683**
- Average person / HH = **3.25**
- Average yearly expenditure on ICT in Kenya per HH: **160.5\$**
- **5%** of yearly expenditure on ICT is contributed to the *Drop Fund*
- **20%** increase on ICT spend per year

- For every HH m.Paani covers:
 - - **30% of infrastructure costs (ie 30\$)**
 - - **100% of philanthropic costs (ie 32.5\$/HH)**

	Year 1	Year 2	Year 3	Year 4	Year 5
Total ICT spend per year	751622	901946	1082335	1298802	1558562
Amount contributed to Drop fund per year	37581	45097	54117	64940	77928
Cumulative Number of water & Sanitation infrastructure financed	601	1323	2189	3228	4475
Total Number of water & Sanitation infrastructure available	716	1438	2304	3343	4683

Appendix | Behram Baug (Mumbai) Case Study

- Number of House Holds: **10 000**
- Average person / HH = **5**
- Average yearly expenditure on ICT in India per HH: **102 \$** (BOP3000 to BOP1500)
- **5%** of yearly expenditure on ICT is contributed to the *Drop Fund*
- **45%** increase on ICT spend per year

- For every HH m.Paani covers:
 - - **20% of infrastructure costs (ie 20\$)**
 - - **100% of philanthropic costs (ie 50\$/HH)**

	Year 1	Year 2	Year 3	Year 4	Year 5
Total ICT spend per year (\$)	1020000	1479000	2144550	3109598	4508916
Amount contributed to Drop fund per year (\$)	51000	73950	107228	155480	225446
Cumulative Number of water & Sanitation infrastructure financed	729	1785	3317	5538	8759

Appendix | Mobile technology behaviour in slums

Distribution:

- Mobile products and top-ups are primarily distributed through local mobile stores, of which there are two main types:
 - Dedicated → only sell mobile accessories and top ups, influential in community, electronic transfer, sell more volume
 - Non-dedicated → sell mobile top ups amongst many other products, only scratch cards
- BOP customers usually top up phones through re-sellers rather than directly with the MNO- because of convenience
- Preference for electronic transfer of top-ups
- **Local mobile stores have power due to importance of customer base to Telecoms - mobile service providers' sales and distribution agents visit these stores everyday. A store keeper never has to call his suppliers – he can but never has to**
- **Drivers for network selection**
- Mobile store vendors have a strong influence on network selection in slum communities
- Community effects are very strong: Consumers move from one mobile operator to the other in large groups
- Consumers are attracted to schemes

Consumer Behaviour:

- Mobile phones are considered a necessity, enhancing livelihood, connecting to services, and providing entertainment
- Households have 2-3 mobile phone on average, in India; usually each adult has one and payments for each are managed individually
- Preference for prepaid rather than post-paid connections, because believe:
 - The billing criteria are not transparent
 - Postpaid connections often require paperwork
 - Greater control over expenses with prepaid
- Consumers are very sensitive to new deals and schemes
- Visibility and promotional material are important
- Multi-SIMing is a common practice, but consumers rarely switch completely from one network to another as Multi 'SIMing
- Expenditure is growing exponentially as incomes increase, and prepaid mobile internet becomes available; availability of prepaid 3G services in India is expected to result in significant jump in spend
- Nokia phones are by far the most popular

Appendix | The urban slum

Overview

- 250HHs – 2000HHs, average size of urban slum in India
- Typically heterogeneous
- Densely populated, with very small home structures in immediate proximity
- Categorized as 'authorized' and 'unauthorized' slums, wherein the former is recognized by the local government and the latter is not

Social Structures

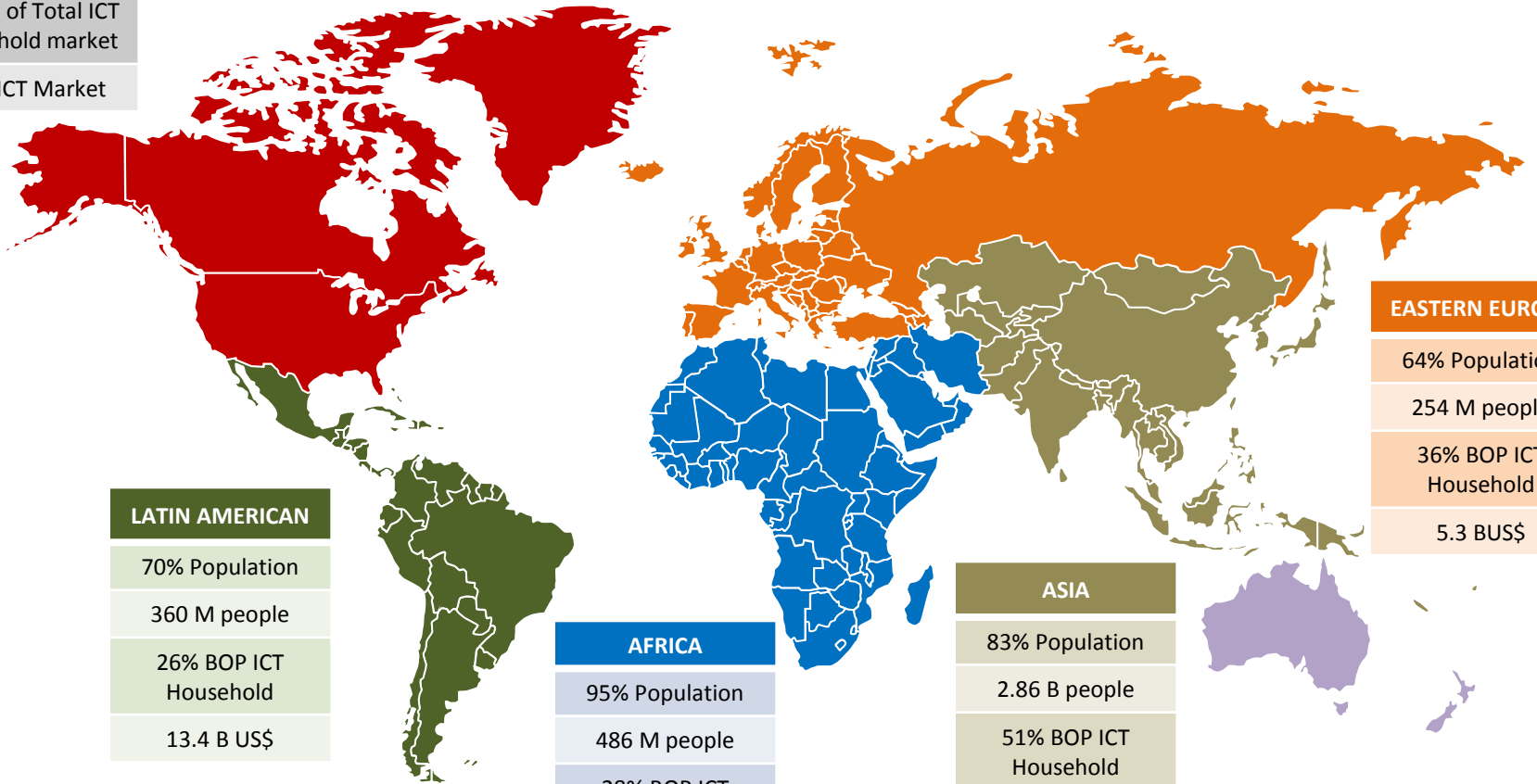
- Residents are typically organized by occupation, and to a lesser extent by ethnic origin/religion/caste
- Lack the strong formal governance structures usually found in rural villages
- Usually structured governance in an urban slum is a result of external mobilisation, e.g. presence of microfinance institutions, or NGO projects
- Women are more likely to take position on developing the slum
- Engaging the right partners is critical – those who have strong position, respect and trust of the community

Water and Sanitation

- Access to services in very poor, even in 'authorized' slums
- Cost of water and sanitation connection per HH
 - In areas where government subsidies exist e.g. Ahmedabad: Rs300-500 (\$6-\$10)
 - In areas with no government support e.g. Delhi: Rs3000-5000 (\$60-\$100)
- Cost of sanitation facilities (actual toilet construction etc) per HH Rs8000 - Rs15000 (\$140-\$300)
- Ideally should be watsan facilities per HH - community level facilities are less desirable and less successful because there is an ownership problem which results in poor maintenance
- If in initial stages they are shared facilities, should be clear ownership and incentives around maintenance e.g. salaries job for maintaining infrastructure
- Nothing should be free as no value will be attached to the service/facilities
- Usually it is a case of linking to utility/municipality - if not then alternatives are e.g. submersible water pumps

Appendix | BOP ICT Market

REGION
% Population BOP
BOP Population
% BOP of Total ICT household market
BOP ICT Market



LATIN AMERICAN
70% Population
360 M people
26% BOP ICT Household
13.4 B US\$

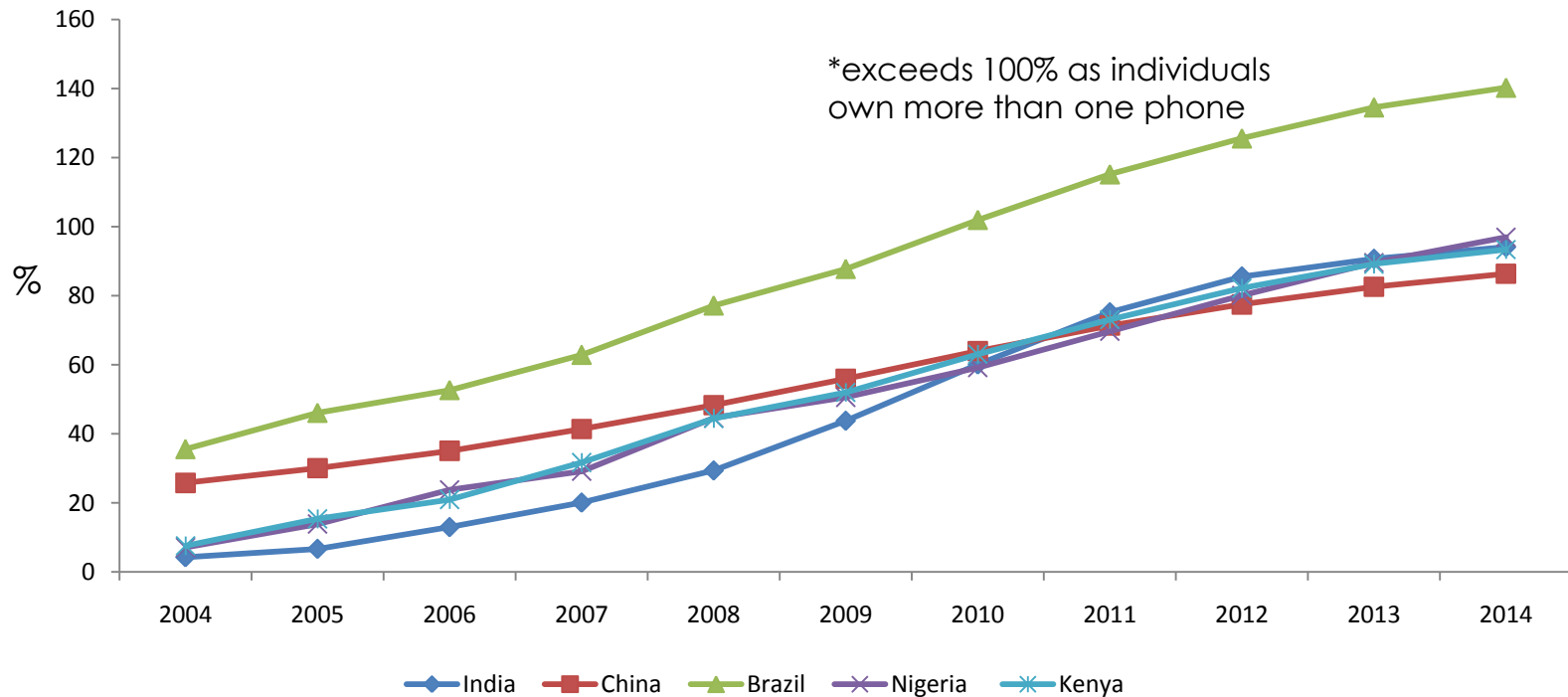
AFRICA
95% Population
486 M people
28% BOP ICT Household
4.4 B US\$

ASIA
83% Population
2.86 B people
51% BOP ICT Household
28.3 B US\$

EASTERN EUROPE
64% Population
254 M people
36% BOP ICT Household
5.3 B US\$

Appendix | Penetration Rate is achieving 100% and beyond

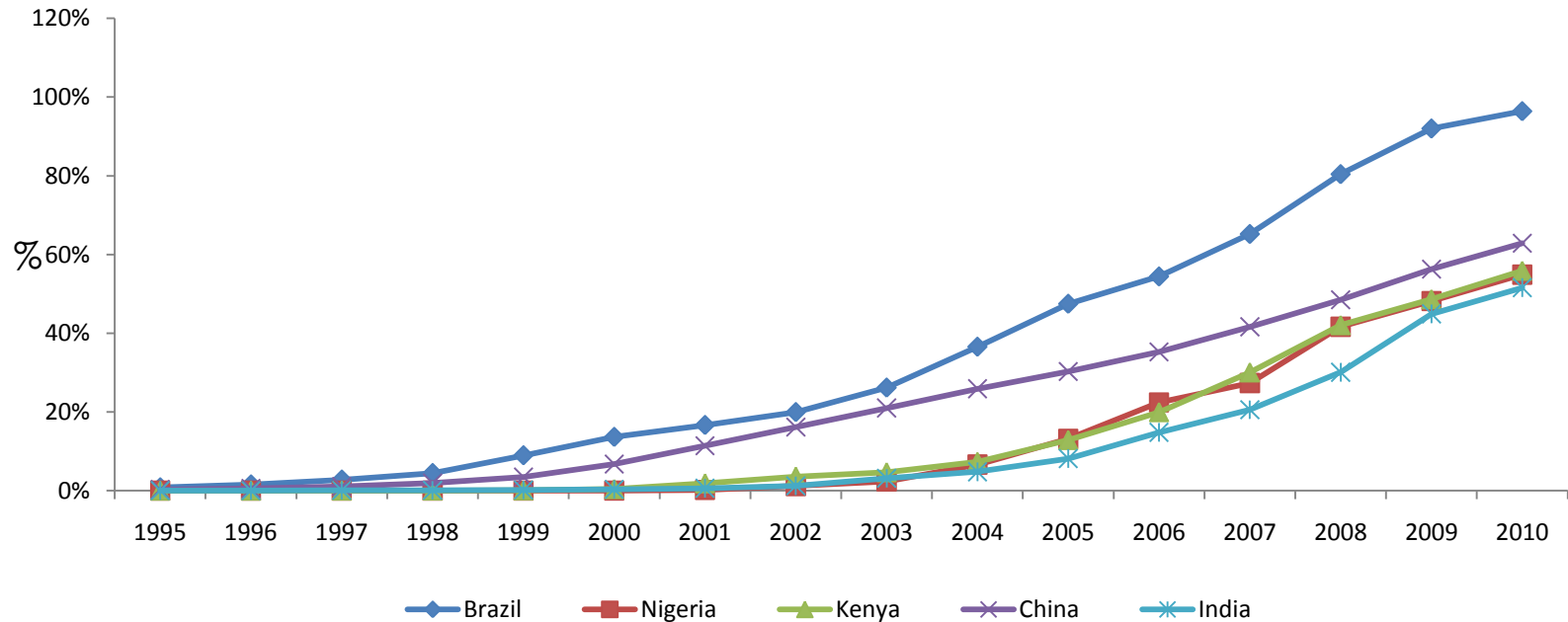
Total Mobile Subscribers per 100 people, %



China, Kenya, India & Nigeria markets will be nearly saturated by 2014, while Brazil will achieve a 140% penetration rate.

Appendix | Growth rate is constantly increasing

Subscription growth rate year on year, %



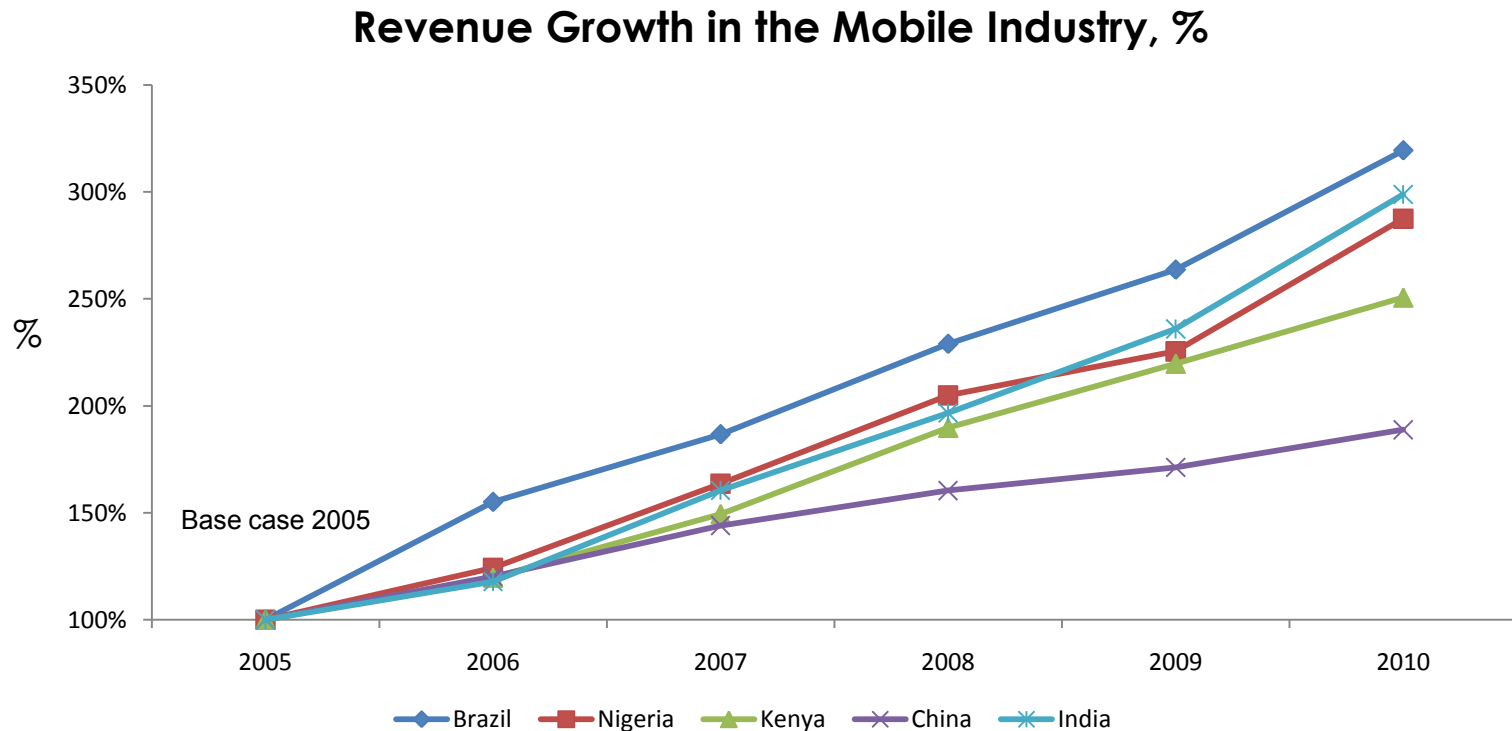
Average growth rate has been increasing year on year:

2000.....4%

2005.....22%

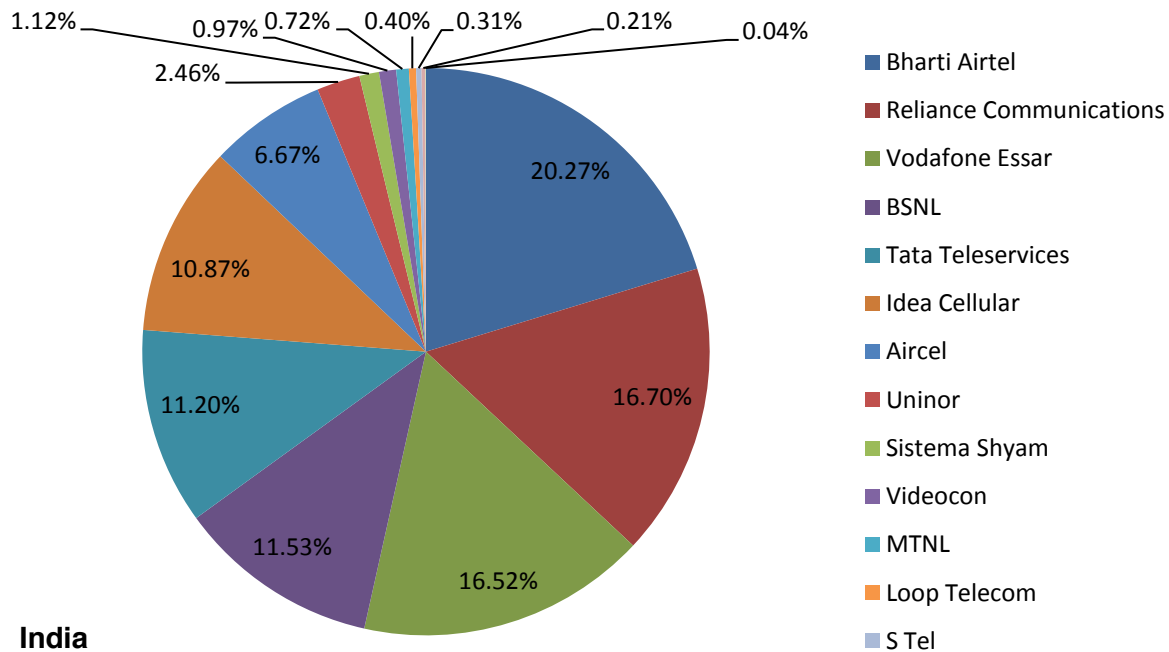
2010.....64%

Appendix | Revenues are going up



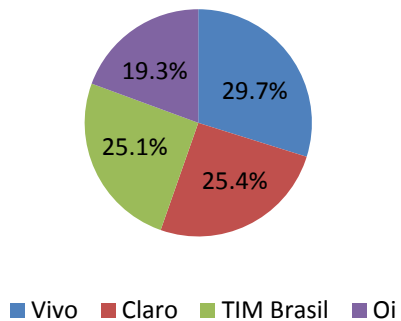
Between 2005 and 2010, mobile revenues have grown continuously, increasing 2005 levels around three times in Brazil, India & Nigeria; two and half times in Kenya and twice in China during 2010.

Appendix | There is competition

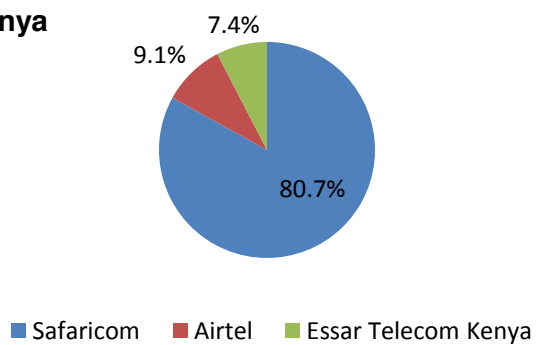


India

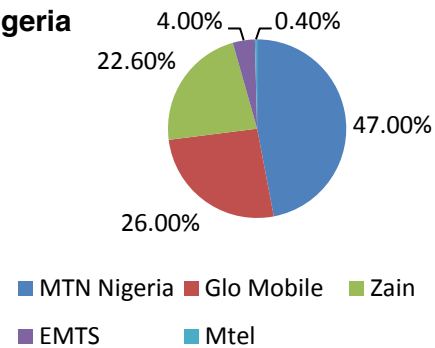
Brazil



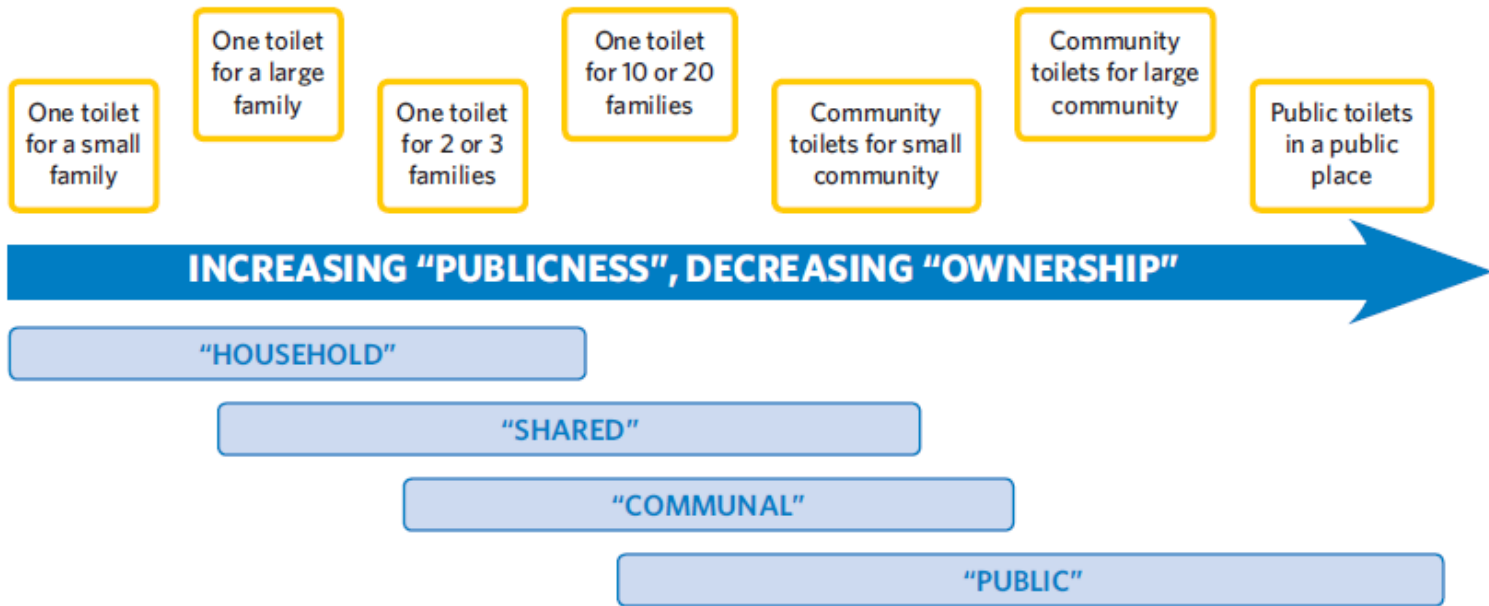
Kenya



Nigeria



Appendix | Watsan development (historic)



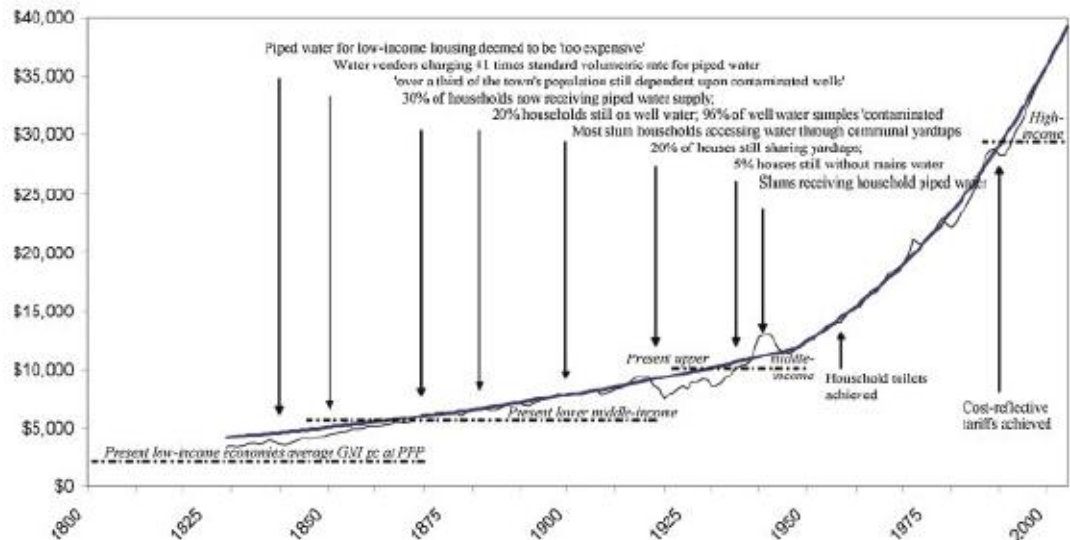
Birmingham 1800-2000 (UK)

1850: Water Vendors charging 41 times standard prices

1875: 30% Water Supply/HH

40's: ~100% Water Supply/HH

60's : ~100% Sanitation/HH



Appendix | Drop fund from community's perspective

1

Preparation

Share information about m.Paani model and gain acceptance
Structure Drop Fund

Select leaders from SHGs to act as Drop Fund managers

2

Training

8-10 month training program in relevant skills
Pilot phase to initiate local managers in running Drop Fund and representing community needs

3

Maturity

Community and Drop Fund managers are running drop fund with minimal support
SHG leaders can help train new communities in Drop Fund management

Appendix | Interviews

Hakeem Belo-Osagie, Chairman, Emerging Market Telecommunication Services (**ETISALAT** Nigeria)

Naushad Contractor, Head of Marketing eCommerce, **VODAFONE** India/ Regulatory Committee Member, Mobile Payment Forum India

SP Narayanan, Vice President Marketing, **IDEA**

Hans-Peter Bromdo, Head of Social Experience, **NOKIA**

Robert Britton, Advisor to Chairman, Formally Managing Director of Brand Management and Marketing, **AMERICAN AIRLINES**

Richard Carter, Head of Technical Support, **WATERAID**

Tommy Ka Kit Ngai, PhD Sustainable Water Solutions, **UNIVERSITY of CAMBRIDGE**

Urvashi Prasad, Grant Officer, **DELL FOUNDATION**

Priti Parekh, Urban Slum Expert, India/ **UNIVERSITY of CAMBRIDGE**

N. Sunil Kumar, Chief Executive, **RBS FOUNDATION** India

Sebastian Dreyfus, Managing Partner, **SAATCHI & SAATCHI** Sustainability

Nimmi Rangaswamy, Urban Slums and Mobile technology expert, **MICROSOFT** Research India

Michael Barnett, Award-winning business innovation specialist, **m-PESA**

Stefano Marras, Former Head of Project and GIS Specialist, **MapKiberaProject.org**; Fulbright Scholar, Dept of Sociology, NYU

Rama Shagaya, CFO, Emerging Market Telecommunication Services (**ETISALAT** Nigeria)

Sama Bajra, Director of **LUMANTI**, NGO specialized on projects dedicated to the slums of Kathmandu (Nepal)

Bindeshwar Pathak, CEO, **SULABH INTERNATIONAL**, NGO specialized in water & sanitation solutions (India)

Philippe Lamarre, Serial Entrepreneur & Consultant (Canada)

Appendix | References

Websites:

- * Water Supply & Sanitation Collaborative Center (<http://www.wsscc.org/>)
- * The UNU Institute for Water, Environment & Health (<http://www.inweh.unu.edu/>)
- * Sustainable Sanitation Alliance (<http://www.susana.org/>)
- * Women's World Banking (<http://www.swwb.org/>)
- * World Bank Group (www.worldbank.org/)
- * Telecom Regulatory Authority of India (<http://www.trai.gov.in/Default.asp>)
- * Map Kibera Projects (www.mapkiberaproject.org/; www.mapkibera.org/)

Books:

- * The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits, C. K. Prahalad
- * Business solutions for the global poor : creating social and economic value, V. Kasturi Rangan [et al.] ; foreword by C.K. Prahalad.

Articles:

- * Stanpipes and Beyond'-A universal Water Service Dynamic, Esther Gerlach and Richard Franceys, Centre for Water Science, Cranfield University, Bedfordshire, UK
- * Public-Private Community Partnerships in Infrastructure for the Poor; Richard Franceys and Almud Weitz, Cranfield University, Institute of Water and Environment, Bedford, UK & Asian Development Bank, Philippines
- * Sulabh International: A Movement to Liberate Scavengers by Implementing a Low-Cost, Safe Sanitation System, Prabakar Kothandaraman & Vidya Vishwanathan, UNDP
- * Association of Private Water Operators in Uganda: Affordable and Safe Water for the Urban Poor, Winifred N. Karugu & Diane Nduta Kanyagia, UNDP
- * Linking Traditional Banking with Modern Finance: Barclays Microbanking - Susu Collectors Initiative, Robert Darko Osei, UNDP
- * Mobile Money: The Economics of M-PESA, William Jack and Tavneet Suri
- * Access of the Poor to Water Supply and Sanitation in India: Salient Concepts, Issues and Cases, by Nitish Jha, International Policy Centre for Inclusive Growth, United Nations Development Programme
- * Access to Water in the Slums of the Developing World by Hulya Dagdeviren and Simon A.Robertson, International Policy Centre for Inclusive Growth, United Nations Development Programme

Databases:

- * Passport GMID (formerly Euromonitor)
- * IHS Global Insight
- * The World Bank database
- * United Nations Statistics Division

Appendix | References

Reports:

- * The next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid, International Finance Corporation (World Bank Group)
- * Microfinance in Africa: State-of-the-sector Report, Bringing Financial Services to Africa's Poor; CARE.org
- * GLASS 2010 UN-Water Global Annual Assessment of Sanitation and Drinking Water-Targeting resources for better results; WHO & UN-Water
- * Progress in Sanitation & Drinking-Water, 2010 Update, WHO & UNICEF India Consumer Electronic Report, Business Monitor International Limited
- * India Consumer Electronic Report, Business Monitor International Limited
- * Cambridge and International Development Report
- * Emerging Market Emerging Model, Monitor Group
- * India Inclusive! Magazine Issue
- * Kenya at the Tipping Point? with a special focus on the ICT Revolution and Mobile Money, Reduction and Economic Management Unit Africa Region, World Bank
- * Assessing Microfinance for Water and Sanitation, Exploring Opportunities for Sustainable Scaling Up, a study by Meera Mehta for Gates Foundation
- * When are communal or public toilets an appropriate option?, Water & Sanitation for the Urban Poor
- * Mobile banking for the Unbanked, Annual Report 2010, GSMA
- * Small-Scale Private Service Providers of Water Supply and Electricity; A Review of Incidence, Structure, Pricing and Operating Characteristics , World Bank - Energy and Water Department
- * Water, Sanitation and Hygiene in Bangladeshi slums: an evaluation of the WaterAid-Bangladesh Urban Programme, International Institution for Environment and Development
- * Bringing Water to the Poor, selected ADB Case Studies, Asian Development Bank 2004
- * The peri-urban water poor: citizens or consumers?, International Institute for Environment and Development 2006
- * The State of African Cities 2010 Governance, Inequality and Urban Land Markets, UN Habitat
- * The Challenge of Slums, Global Reports on Human Settlements 2003, UN Human Settlements Programme, UN Habitat
- * State of the World's Cities 2010/2011, Bridging the Urban Divide, UN Habitat
- * Kenya Urban Sector Profile, United Nations Human Settlements Programme, UN Habitat
- * Nairobi Urban Sector Profile, United Nations Human Settlements Programme, UN Habitat