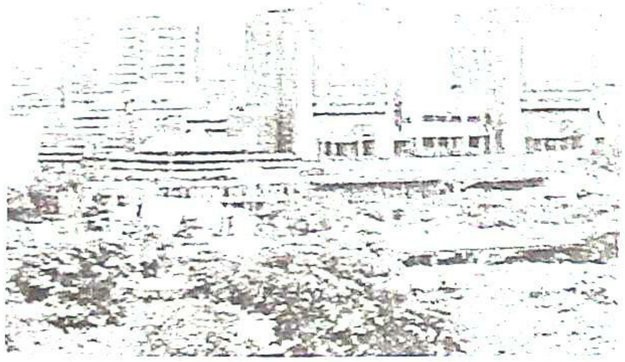
5 June, 2013

National Integrated Infrastructure Master Plan

TWG Workshop

States | Regional Development

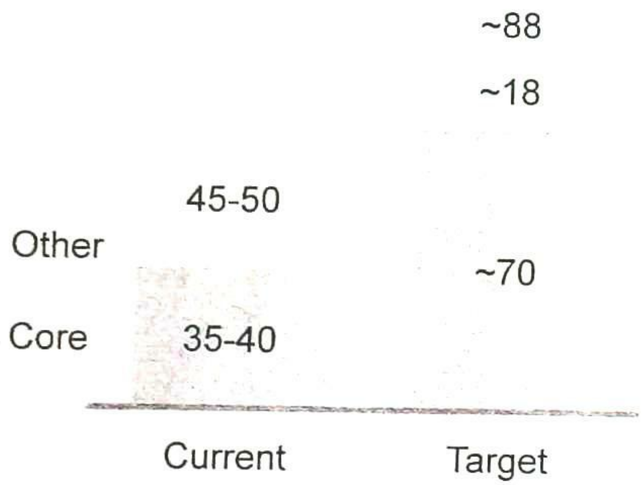


Nigeria needs to spend almost USD 3 trillion over the next 30 years

To close its current infrastructure gap…

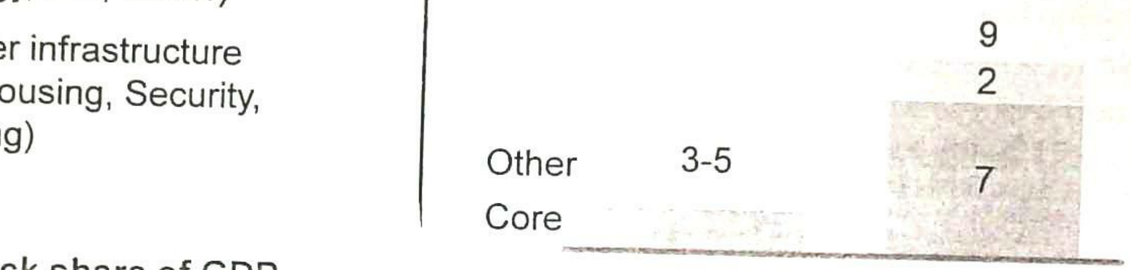
- Raise "core infrastructure" stock to 70% from current 35 – 40% (Transport, Energy, ICT, Water)
- Close gap in other infrastructure assets (Social, Housing, Security, Agriculture, Mining)

Infrastructure stock share of GDP
Percent



… Nigeria must aggressively increase the weight of infrastructure spend in GDP

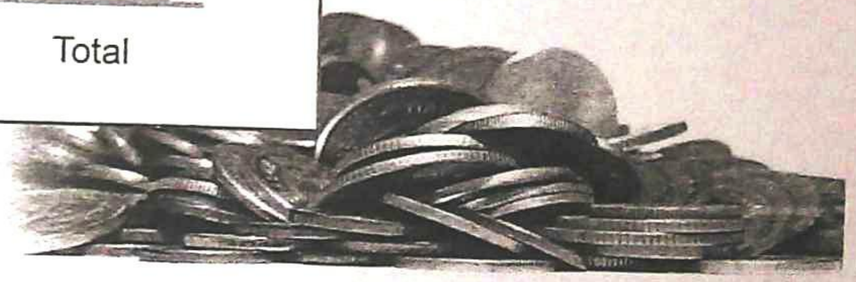
Average annual spend required
% of GDP



Total spend 2014-2043
USD trillion

Such a ramp-up is particularly challenging given

- High GDP growth projected for the period
- Growing maintenance costs as infrastructure stock increases (~2% of GDP according to benchmarks, or 700b from 2014 to 2043)

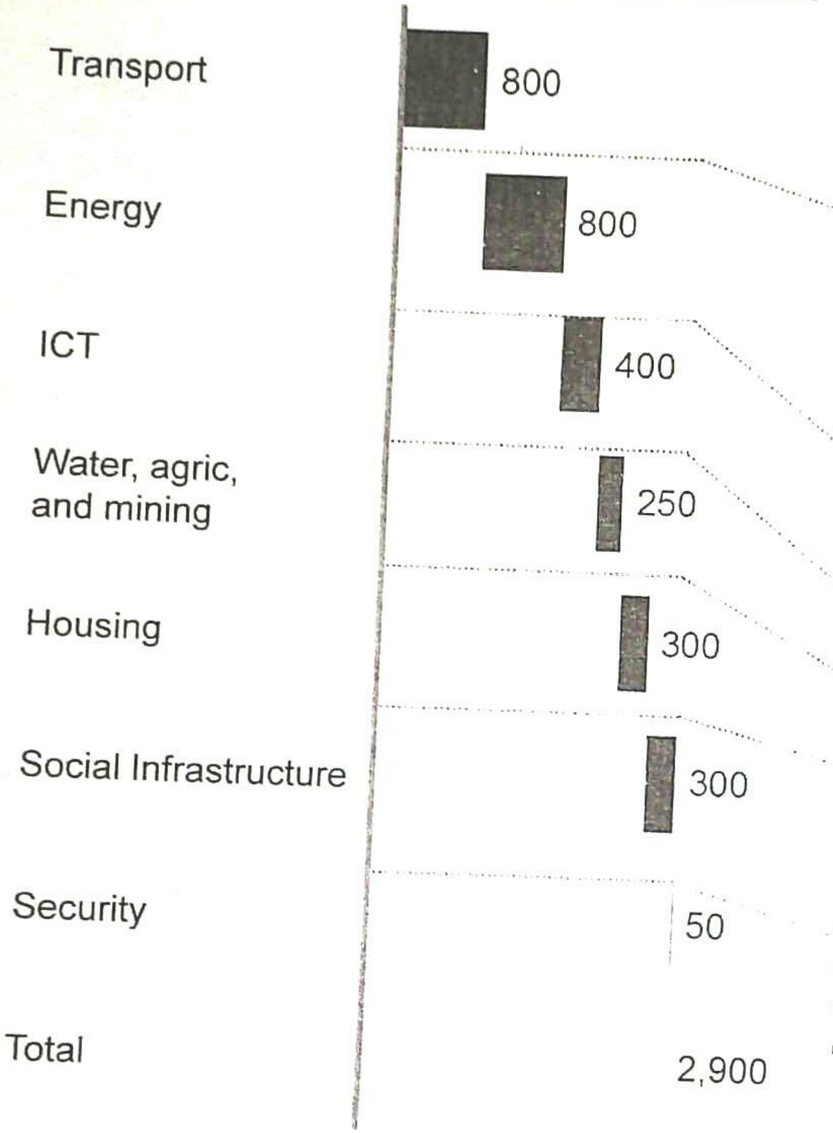


SOURCE: ITF; GWI; IHS Global Insight; McKinsey Global Institute analysis; Team analysis

ne total amount splits into seven sectors, with Transport and Energy accounting for the largest share

Infrastructure spend per sector, 2014-43
USD billion

PRELIMINARY: TO BE REFINED



Main bottom up drivers

- Build 100 000km new roads at USD 1.5 m/km
- Build functional urban transportation in all major cities
- Increase aviation passenger capacity from ~5 million to 110 million passengers per annum at USD 200 m/ million passengers

- Increase generation capacity by 340GW at USD 1.4 bn/GW
- Increase refining capacity to 4,000 kbpd at USD 20 m/kbpd
- Build 11,000 km 330KV and 15,000 km 132KV transmission lines at USD 0.9 m/ km and USD 0.2/km respectively

- Build 180 000 new base stations at USD 250,000 per base station
- Build sufficient fibre backbone to support broadband roll out at USD 50 000/ km of fibre

- Give access to sanitation to ~200 million additional people by 2043 at a cost of USD 400-700 per person
- Build 1 million houses per annum for the next 30 years at USD 10,000 per house

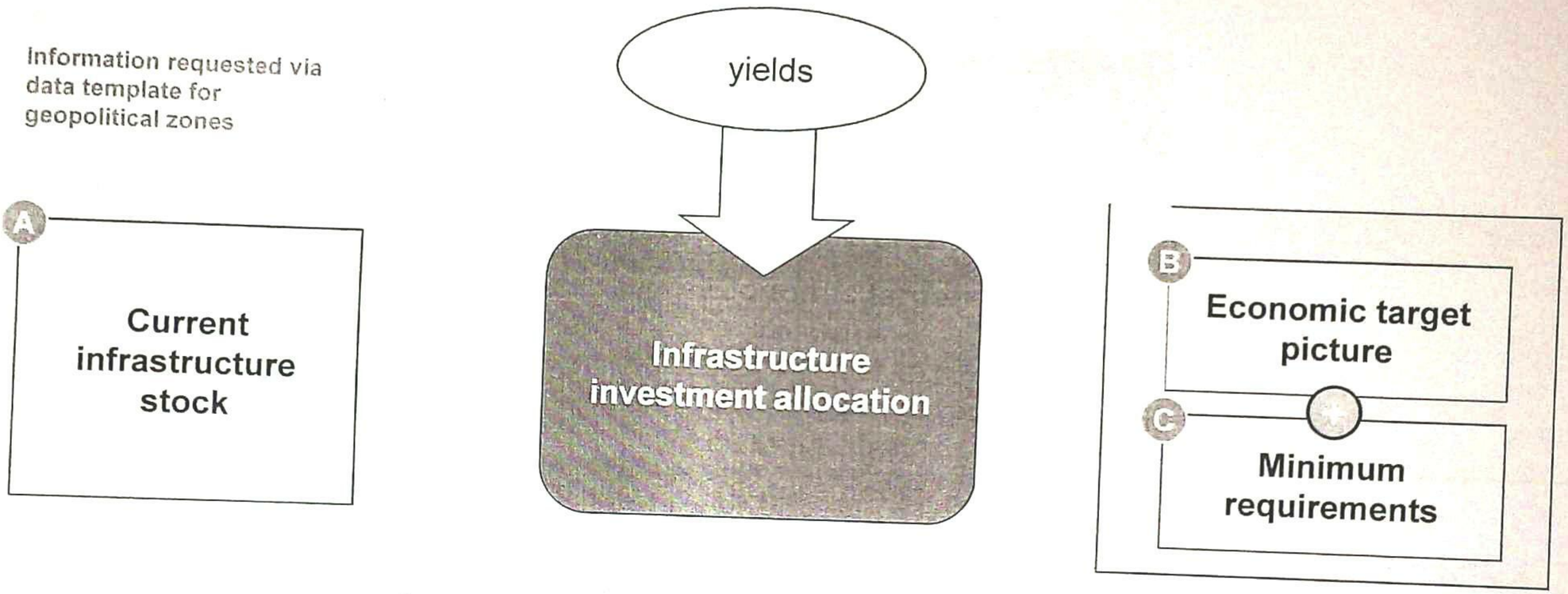
- Build 40 new universities at USD 500 mn/ university
- Build 800 000 new classrooms at USD 60,000 /classroom
- Hospitals: 50 general hospitals at cost of USD 100 m per hospital

- Build 3,000 new police stations at USD 1.5 m/ station
- Build 2,000 new fire stations USD 2 m/ station
- Build 50 new prisons at USD 10 m/prison

SOURCE: MGI, TWG, International benchmarks comparisons

Each sector's spending volume needs to be allocated regionally

Deriving the regional allocation of spending for each sector necessitates three types of information for each geopolitical zone



Per geopolitical zone

- (A) Fill current state data template
- (B) Discuss future focus areas / economic target picture of zones
- (C) Discuss possible minimum levels for certain asset classes

Geopolitical Zone: _____

TEMPLATE SENT OUT LAST WEEK

Basic Facts

Area (km²):

Population (millions):

GDP (NGN bn)

Situation Snapshot

Current indicators

- Road density (km per 100 km²)
- Rail density (km per 100 km²)
- No. of airports
- Air passengers per annum
- No. of sea ports
- Power generation capacity (MW)
- Transmission capacity (MW)
- Consumption per capita (kWH)
- Broadband coverage (%)
- Internet usage (% of population)
- Mobile penetration (%)
- Share of national agricultural production (%)
  - Crops
  - Eggs
  - Milk
- Access to sanitation (%)
- Water supply access (%)
- Houses per 100 people
- Number of hospital beds
- Number of schools
- Literacy rate
- Number of police stations
- Number of fire stations

Current resource endowment

- Arable land (ha)
- Arable land cultivated (ha)
- Surface water storage potential (million m³)
- Mineral reserves (low / medium / high)
  - Metals
  - Coal
  - Other
- Oil reserves (low / medium / high)
- Natural gas reserves (low / medium / high)

Annual infra-structure / programme spend (NGN bn)

- Transport
- Energy
- Water
- Agriculture
- Mining
- ICT
- Housing
- Social Infrastructure
- Security

Potential future economic focus areas per zone (1/3)

	North East	North West
Area (sq. km)	▪ 280,419	▪ 212,350
Population	▪ 35,382,469	▪ 35,786,943
States	▪ Adamawa, Bauchi, Borno, Gombe, Taraba, Yobe	▪ Jigawa, Katsina, Kaduna, Kano, Kebbi, Sokoto, Zamfara
Potentials & resources	▪ Space for agricultural cultivation ▪ Surface water resources	▪ ...
Potential focus areas for future economic footprint	▪ Agriculture and agric related industries ▪ Fish farming and livestock ▪ Solid minerals	▪ Wind and solar energy ▪ ???
Associated asset classes	▪ Agriculture ▪ Mining ▪ Transport (roads, rail, aviation) ▪ Energy	▪ Energy (power) ▪ Transport (roads)
Challenges	▪ Security ▪ No detailed base map ▪ No proper solid waste management across the region ▪ Rural areas not developed	▪ Poor infrastructure ▪ Harsh climate ▪ Erosion/desertification ▪ Bad road infrastructure ▪ Weak industrial base ▪ Low education/human capacity ▪ Rural urban migration

SOURCE: Situation Analysis Reports

Potential future economic focus areas per zone (2/3)

	North Central	South West
Area (sq. km)	▪ 219,059	▪ 76,852
Population	▪ 18,851,717	▪ 27,581,992
States	▪ Benue, Kogi, Kwara, Nasarawa, Niger, Plateau	▪ Ekiti, Lagos, Ogun, Ondo, Osun, Oyo
Potentials & resources	▪ Surface water resources ▪ Solid minerals reserves (gold, coal, iron ore)	▪ Skilled manpower ▪ Solid minerals reserves (bitumen, iron ore) ▪ Oil & gas reserves
Potential focus areas for future economic footprint	▪ Agriculture and agric related industries ▪ Mining	▪ International Trade ▪ Financial industries ▪ ICT industries ▪ Oil & Gas ▪ Mining
Associated asset classes	▪ Agriculture ▪ Mining ▪ Transport ▪ Energy	▪ Transport (road, rail, maritime, aviation, urban) ▪ ICT ▪ Education ▪ Energy (Oil & Gas, Mining)
Challenges	▪ Poor road network to link other states/zones ▪ Only 20% of the population has access to good sanitation ▪ Heavy erosion in the Jos (Plateau) area ▪ Poor industrial presence ▪ No base maps for each area	▪ High pace unplanned urbanisation ▪ Housing shortage in quantitative and qualitative terms ▪ Urban decay and squatter settlements ▪ Inadequate physical infrastructure (transport, power, housing, health, education) ▪ High unemployment level ▪ Environmental degradation

SOURCE: Situation Analysis Reports

Potential future economic focus areas per zone (3/3)

	South South	South East
Area (sq. km)	▪ 84,696	▪ 29,525
Population	▪ 21,015,155	▪ 16,381,724
States	▪ Edo, Delta, Rivers, Bayelsa, Akwa Ibom, Cross River	▪ Abia, Anambra, Ebonyi, Enugu, Imo
Potentials & resources	▪ Oil & gas reserves ▪ …	▪ Fertile land ▪ Favorable climate for agricultural production ▪ High acumen for commercial activities ▪ Inland waterway potential ▪ Resuscitation of rubber industries ▪ Forestry potential ▪ Access to Port Harcourt and Calabar ports ▪ Oil and gas reserves ▪ Major manufacturing base
Potential focus areas for future economic footprint	▪ Oil & Gas ▪ Fisheries/processing; agriculture ▪ ???	▪ Agriculture ▪ Commerce/Trade ▪ Oil & Gas ▪ Manufacturing
Associated asset classes	▪ Transport (inland waterways, sea ports, rail, road) ▪ Oil & Gas ▪ Power ▪ ICT ▪ Agriculture	▪ Agriculture ▪ Water ▪ Transport (inland waterways, sea ports, rail, road) ▪ Oil & Gas ▪ Power ▪ ICT
Challenges	▪ Poor/limited road network ▪ Water ways are not well explored despite potential for water transportation ▪ No railway service (except the Port Harcourt to Kaduna link) ▪ Environmental degradation issues – oil pollution, coastal erosion and gas flaring ▪ Restiveness of the youth	▪ Extensive Environmental challenges, notably soil and gully erosion ▪ Poor infrastructure base to support trade and commercial activities (e.g., transportation, communications infrastructure, inadequate Power and water supply, etc.) ▪ Very rapid urbanisation

SOURCE: Situation Analysis Reports

Please rate the importance of each asset class for attaining the economic target picture per zone

0 = completely useless
1 = moderately useful
2 = quite useful
3 = very useful
4 = of utmost importance

Transport	North East	North West	North Central	South West	South South	South East	North East
Roads							
Rail							
Aviation							
Maritime							
Urban Transport							

Energy	North East	North West	North Central	South West	South South	South East	North East
Power							
Oil & Gas							

ICT	North East	North West	North Central	South West	South South	South East	North East
Telephony							
Internet							

WAM	North East	North West	North Central	South West	South South	South East	North East
Water							
Agriculture							
Mining							

Housing	North East	North West	North Central	South West	South South	South East	North East
Housing							

Social Infrastructure	North East	North West	North Central	South West	South South	South East	North East
Education							
Healthcare							

Security	North East	North West	North Central	South West	South South	South East	North East
Police							
Fire							

SOURCE: Source

Which minimum levels will have to be met by all states and zones?

	Key metric	Nigeria 2012	Minimum level per zone in 2043
Trans-port	▪ Km road per 100 square km	21	?
	▪ Km of rail per 1,000 square kms	4	?
	▪ Air passenger capacity per million people per annum	0.03	?
ICT	▪ Km of fibre per 100 square km	4	?
	▪ Number of base stations per 1 million people	163	?
Water	▪ Minimum annual water treatment capacity per capita (cubic metres)	4	?

SOURCE: McKinsey Infrastructure Practice, Global Insights, World Bank, CIA Fact Book, AFDB

Next Steps

Fill data templates for the six geopolitical zones

- if data is not available for all states, submit those which are available

Close any gaps that might remain in terms of infrastructure requirements for regional economic target pictures and/or minimum levels

<_____>

STATE GROSS DOMESTIC PRODUCT COMPUTATION

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NATIONAL BUREAU OF STATISTICS OF NIGERIA

Gombe |15TH May 2012

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