



# Ministry of Finance and World Bank

## Public Expenditure Review of Infrastructure

(March 2015)

# Background and Drafting

- MoF decided Terms of Reference for report and employed World Bank to assist with drafting
- MoF has led every step of process including drafting, reviewing and presenting
- Process has followed the new deal principle of government ownership
- This has resulted in a higher quality, more practical and useful report than the World Bank normally writes
- The report proves that Government ownership works and results in a better quality product

# Report and Presentation Structure

## 1: Macro-fiscal

- Trends in infrastructure spending
- Impact on economic growth and fiscal sustainability

## 2: Investment Management

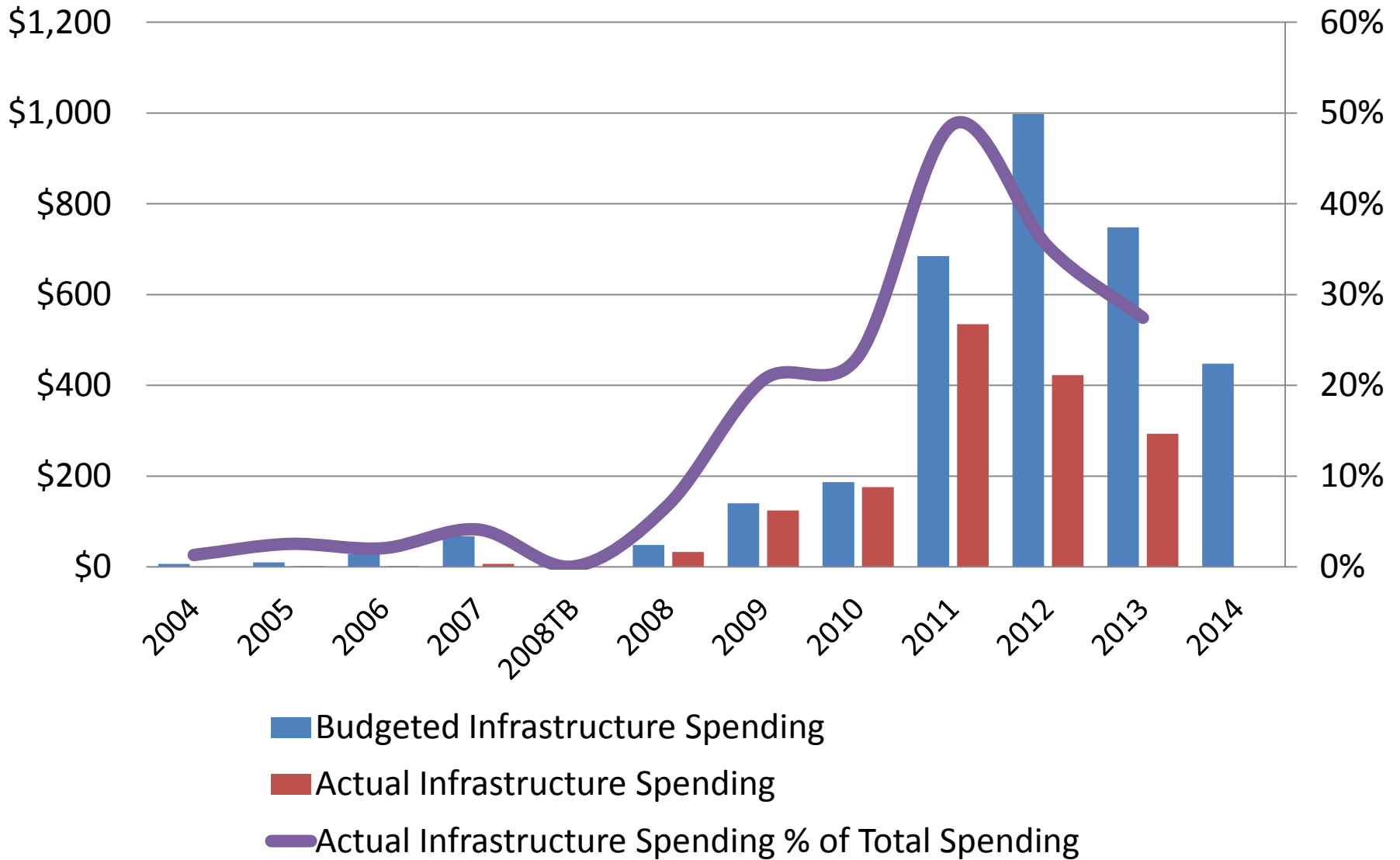
- Explanation and review of investment management cycle
- Planning, budgeting, procurement etc

## 3: Sectors

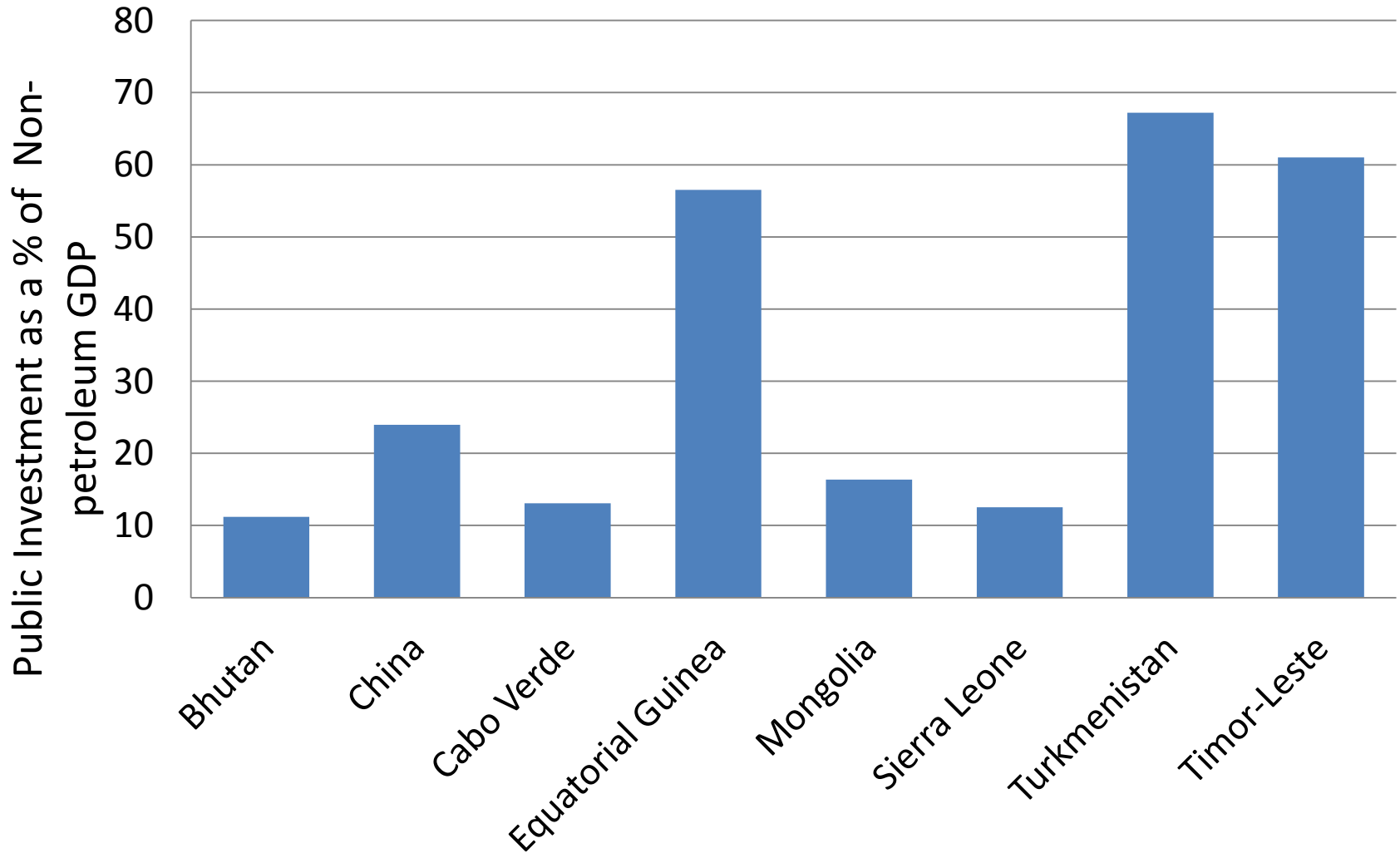
- Detailed review of electricity, irrigation and road sectors

# Part 1: Macro- fiscal Chapter

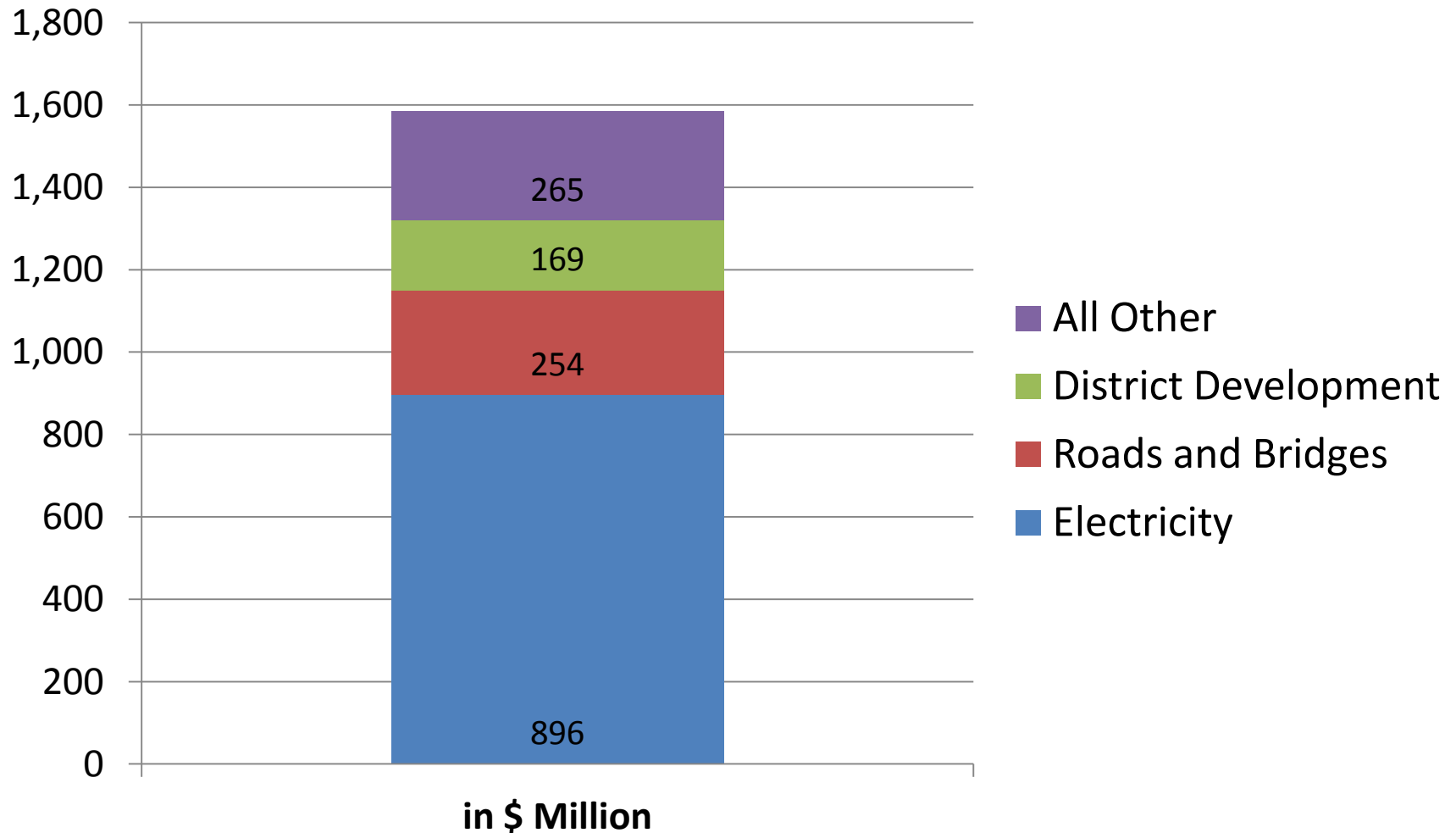
# Infrastructure Spending has Sharply Increased



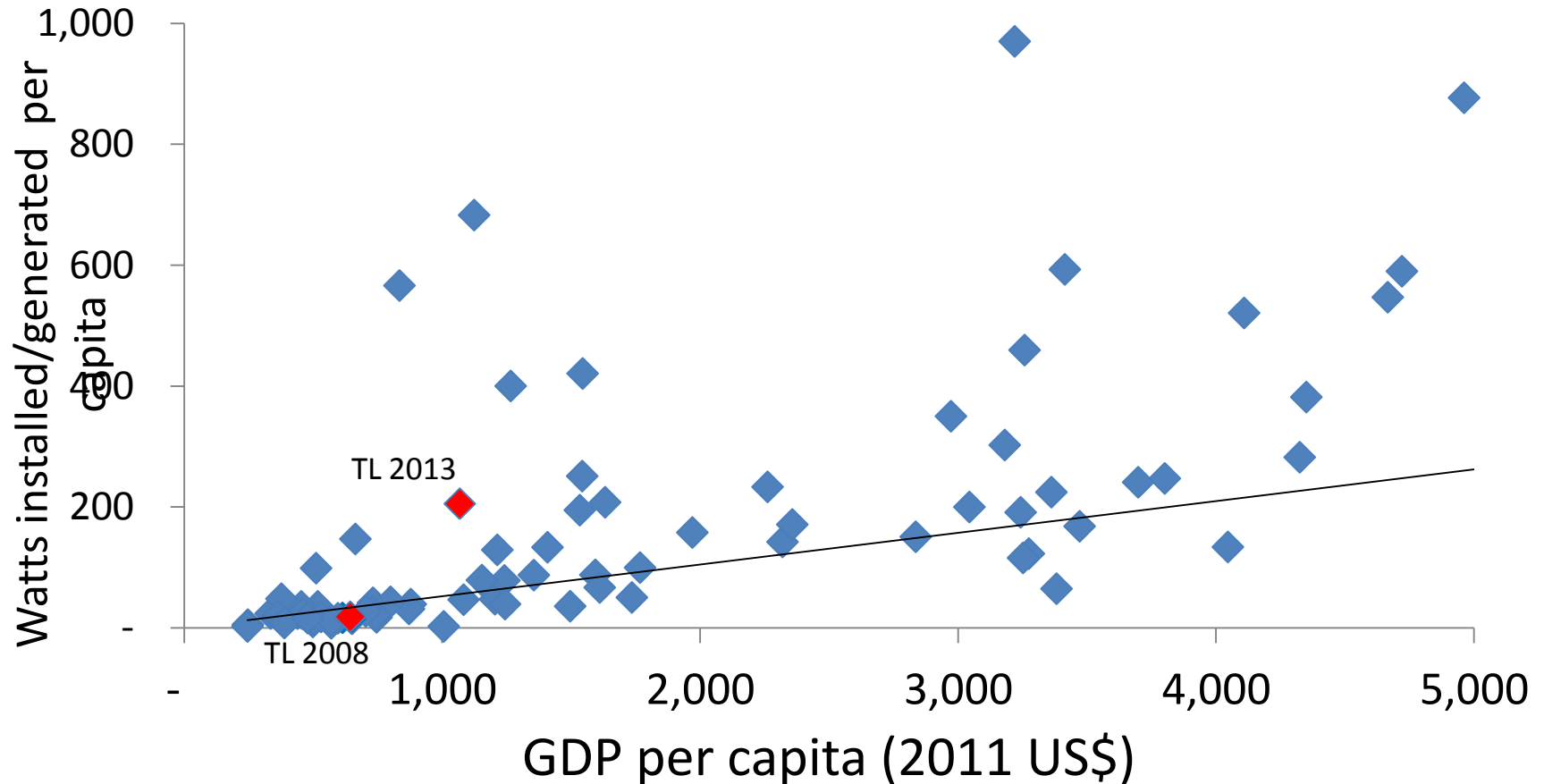
# To One of the Highest Levels in the World



# Past Spending (2008 to 2013) was Heavily Concentrated on Electricity, Roads and Bridges and District Development

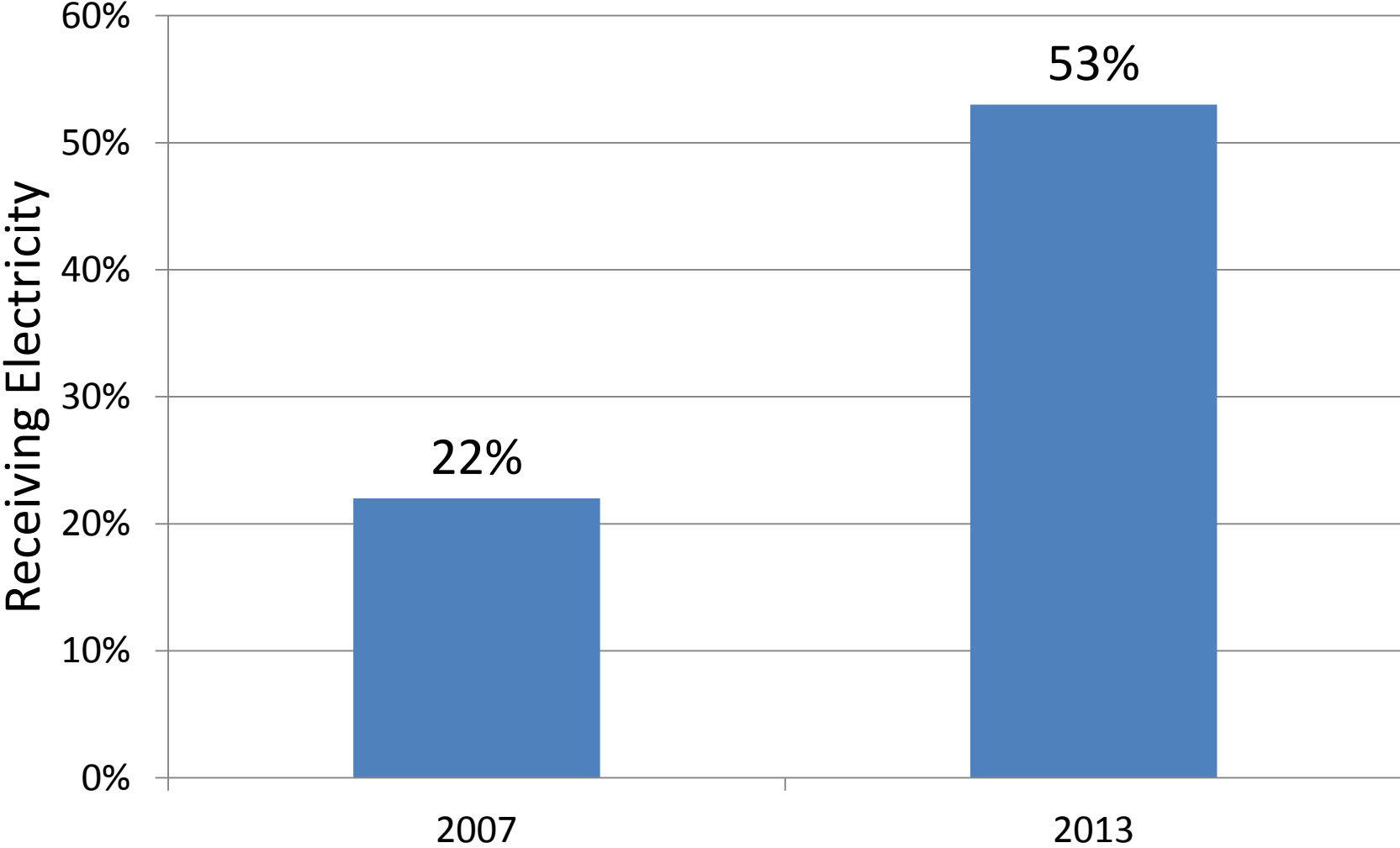


# Electricity Generation has Increased Compared to Our Peers

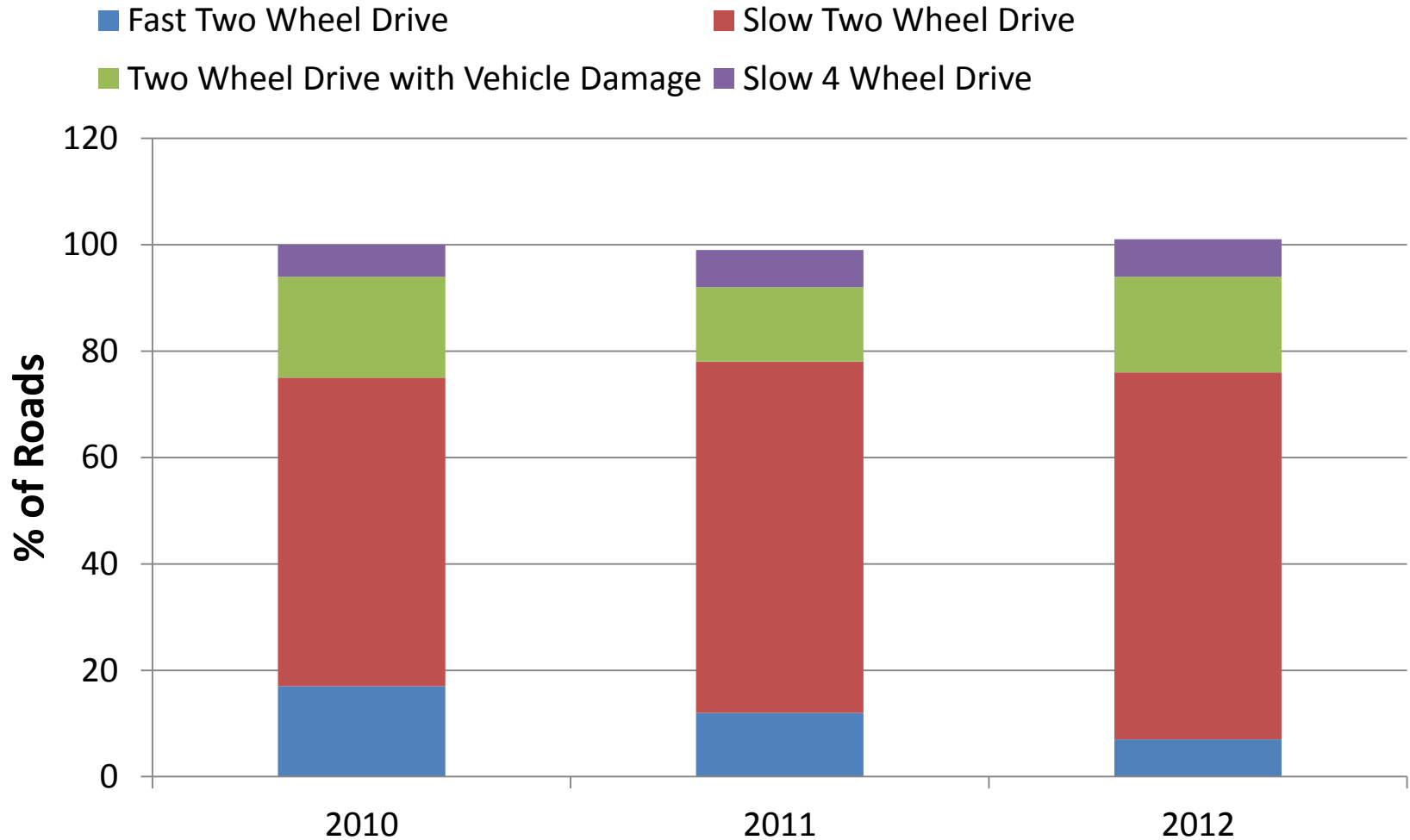




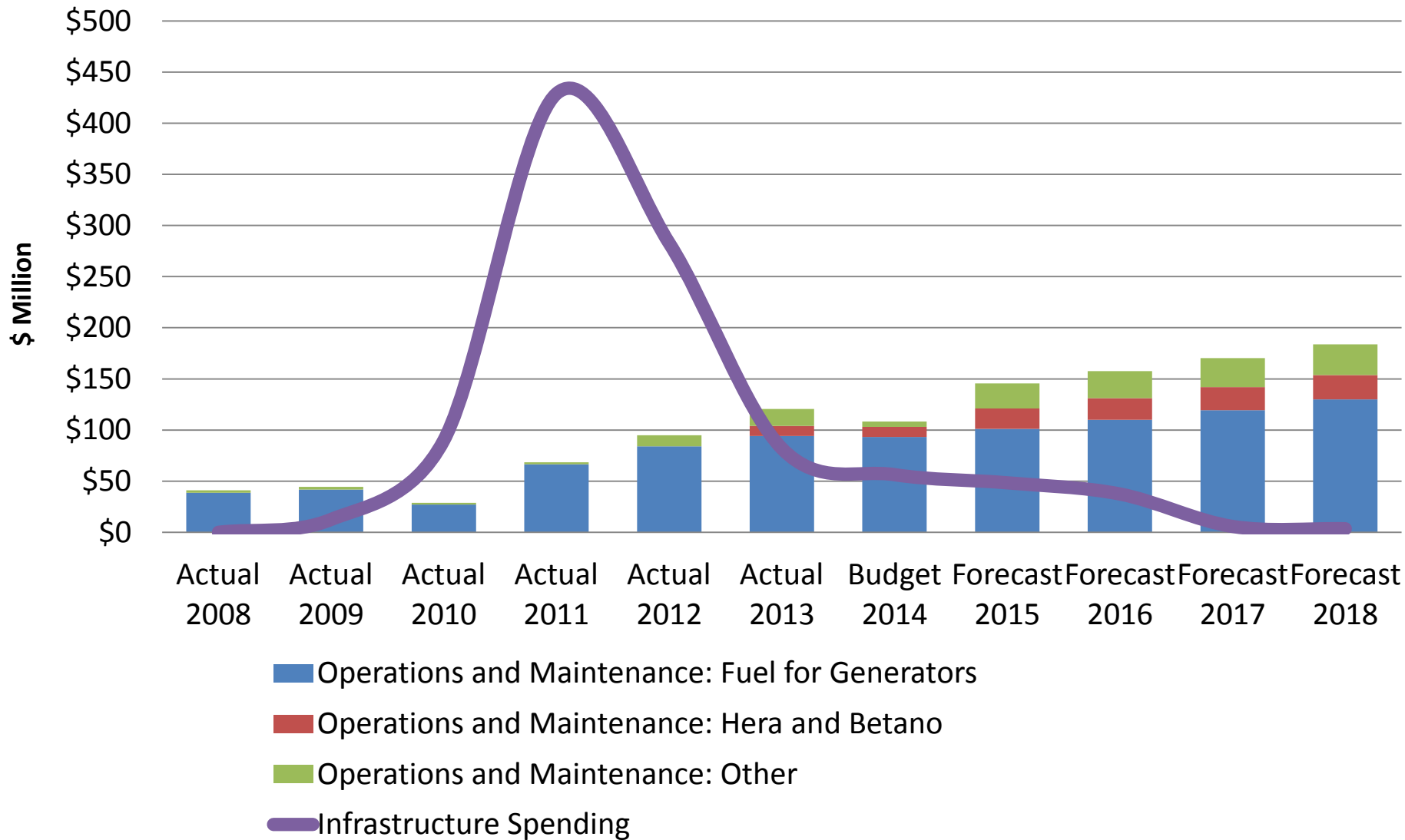
# There Has Also Been An Increase in the Percentage of Households Receiving Electricity



# Roads (at least until 2012) Had Not Improved



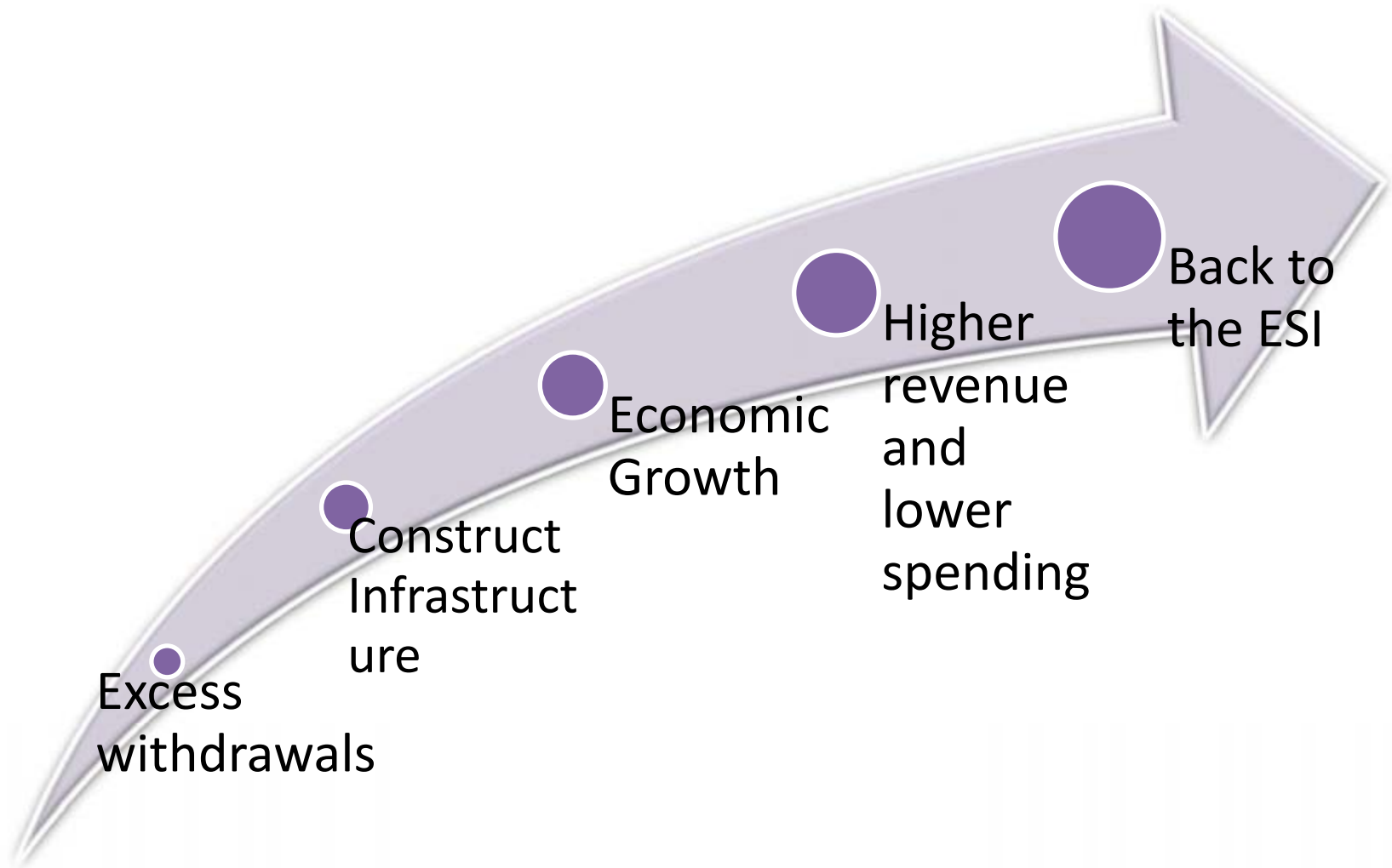
# High Recurrent Costs and Possible Under Budgeting Electricity



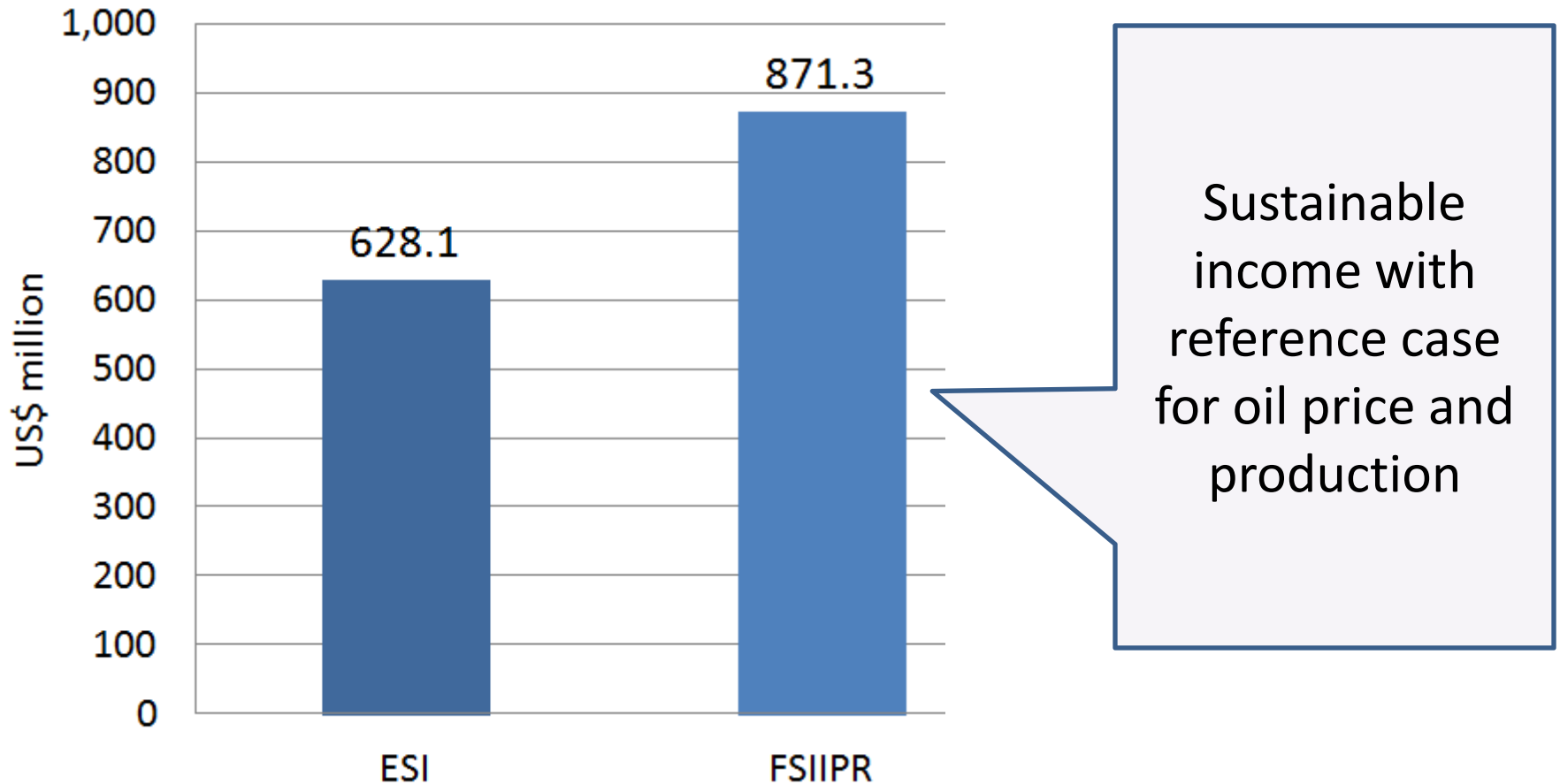
# Economic Growth

- Government expenditure sharply increased from 2008 to 2012
- Led to economic growth concentrated in the Government administration and construction sectors
- Is taking money out of the petroleum fund (by definition not part of non-petroleum GDP) and increasing Government spending (by definition part of non-petroleum GDP) really creating economic value?
- In the long term infrastructure spending increases economic growth when it results in roads, electricity and other outputs which firms use to increase production
- This has not yet occurred in Timor-Leste, with manufacturing and agriculture growing slowly between 2008 and 2012
- Unsurprising as there are normally lags between spending, the completion of construction and the availability of the new infrastructure
- In addition, there are already indications that some energy intensive industries, such as brewing and cement making, are considering moving to Timor-Leste

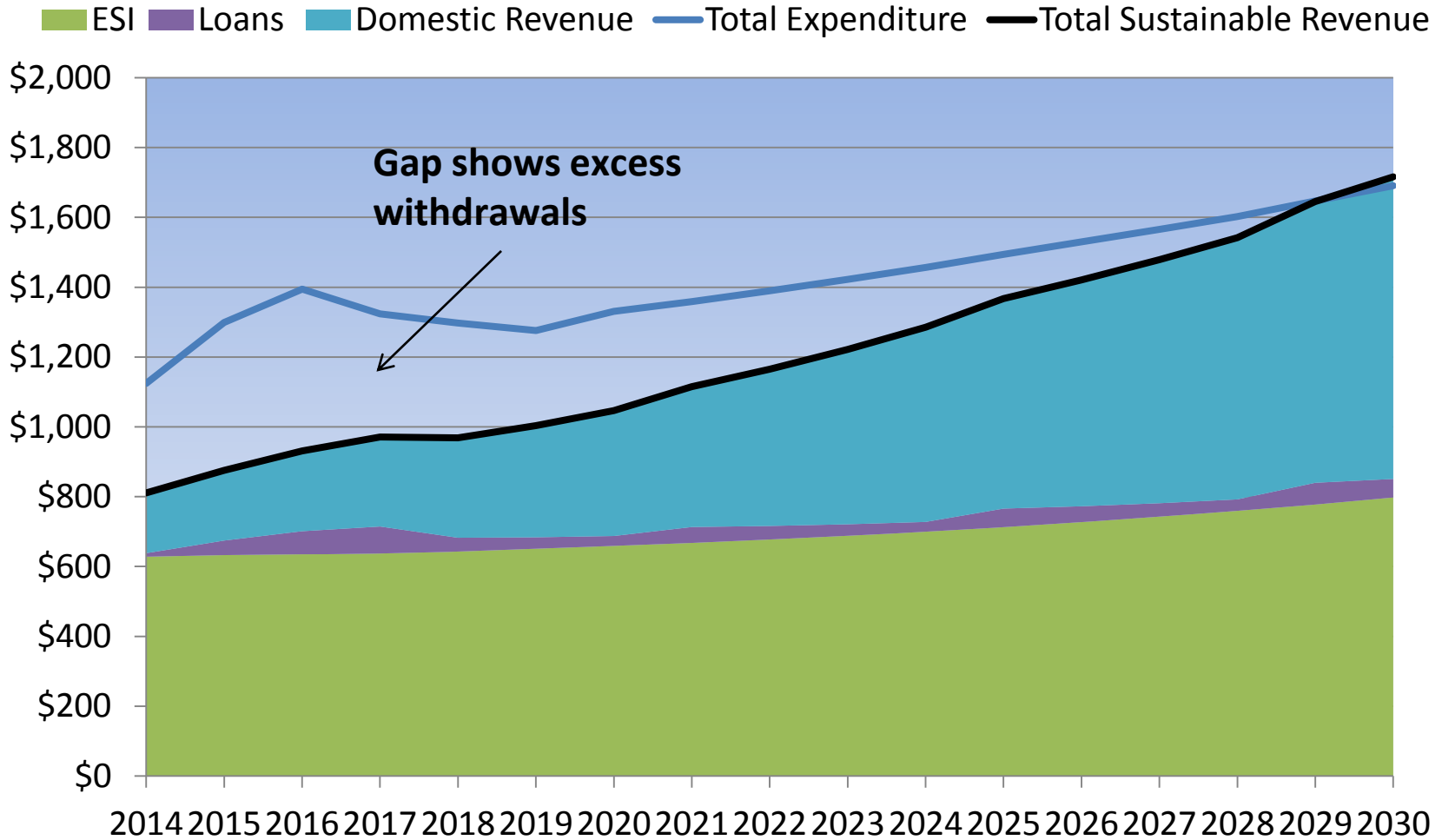
# Frontloading. But at What Amount?



ESI is Conservative. But not Being Conservative does not Change Things that Much Because Most Oil has Already Been Mined.



# Frontloading Can Work



# But Only with Difficult Choices

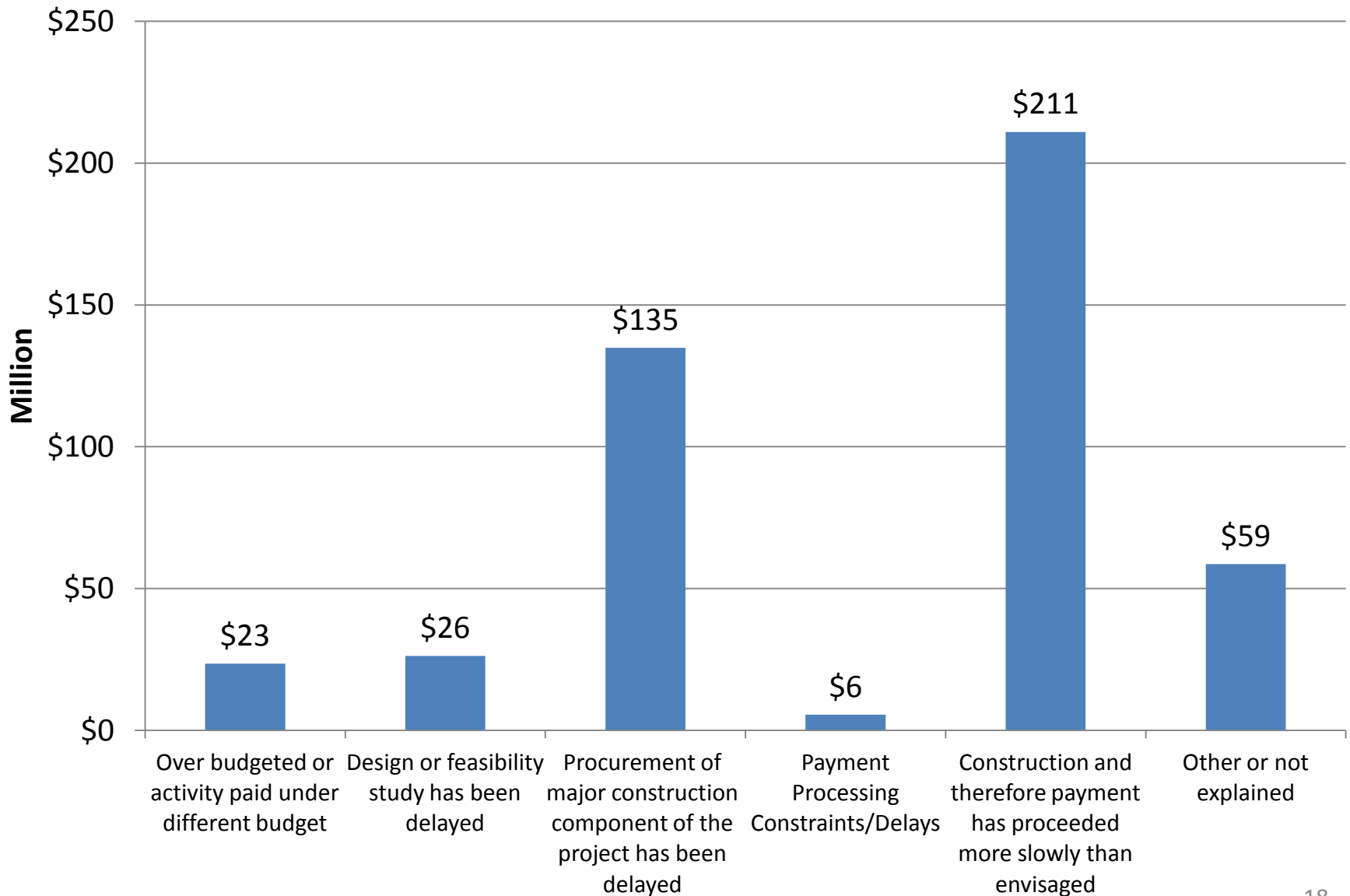
	2015	2016 to 2018	2019 to 2030
	Short Term	Medium Term	Long Term
Fiscal Envelope with ESI	1.3	1.3	1.5
Fiscal Envelope with FSIIPR	1.3	1.4	1.8

- Total expenditure can only grow very slowly over time
- Most of increase in recurrent will be on new operation and maintenance spending
- Other recurrent expenditure will be falling in real terms per capita
- Domestic revenue has to increase to 15% of non-oil GDP in medium term
- Infrastructure fund spending would need to be restricted to less than \$370 million a year (this is lower than outer year spending in the 2014 budget)



# **Part 2: Overview of the Investment Management Cycle**

# Where are the Bottlenecks? (Under Spending by Cause in 2012 for Infrastructure Fund)



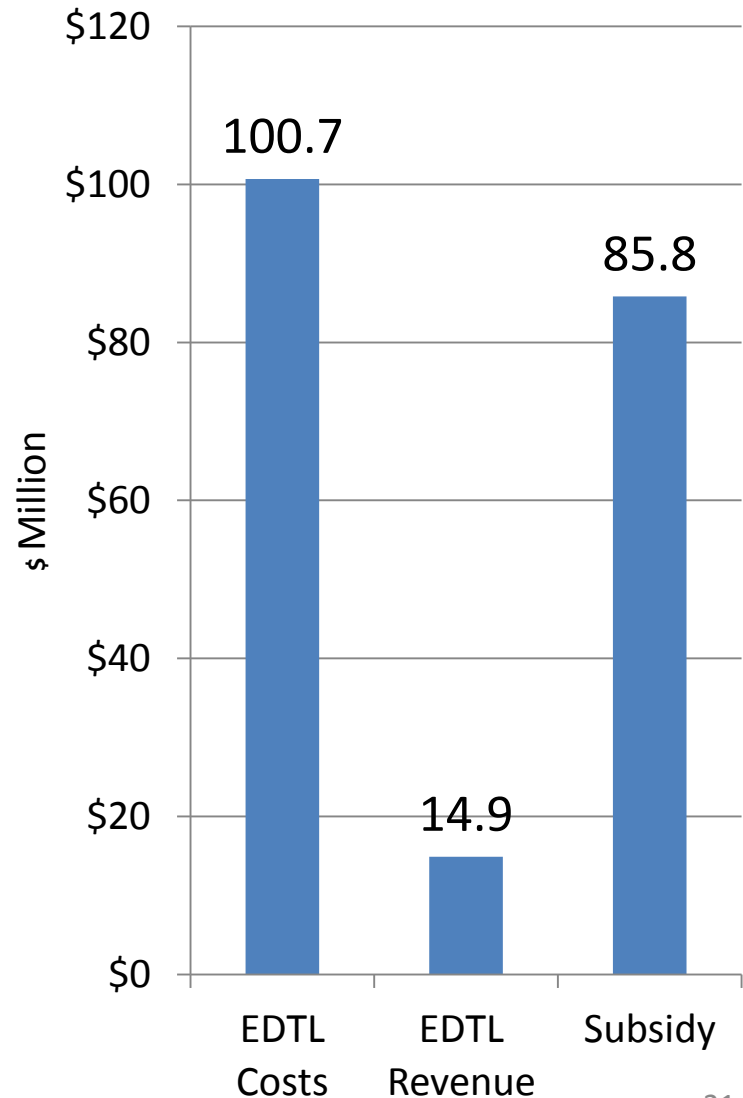
# Investment Management Cycle Strengths and Weaknesses

- Timor-Leste has exceeded expectations and its peers in terms of the development of its public investment management system
- Strong preparation of project briefs (MPS and Line Ministries), project appraisals (MPS) and budget preparation process (MPS and DNO)
- Areas of weakness:
  - Projects being included in budget despite appraisals showing that they have low rates of economic return (e.g. MPS review of irrigation projects)
  - Poor design studies from line ministries being shared with MPS and ADN late in the process and delaying procurement
  - Little or no consideration of maintenance costs or activities when selecting projects
  - Limited ex-post evaluation of infrastructure projects

# **Part 3: Key Issues from the Electricity, Irrigation and Roads Sectors**

# Increased Generation has Led to a Large Yearly Subsidy

- In 2012 EDTL generated 237 million KWH electricity. This cost \$100.7 million
- Its revenue was \$14.9 million so there was a subsidy of \$85.8 million.
- This subsidy could be reduced in at least three main ways reducing theft, implementing a new tariff structure and reducing the costs
- Reducing theft if EDTL completed the installation of 70,000 pre-paid metres, brought all consumers into its database and stopped all theft then there would be a net saving of \$21.7 million
- So while metering can reduce the subsidy, unless we reform the tariff structure there is still going to be a significant subsidy



# Reducing the Subsidy Through Implementing a New Tariff Structure

- The tariff structure for residential users:
  - Up to 20 KWH per month \$0.05
  - Above 20 KWH per month \$0.12
- This is not progressive enough. Somebody using 21 KWH a month is likely quite poor (only using say four fluorescent lights), but is paying the same tariff as somebody using 2,000 KWH per month who is running an air conditioner all day and is likely fairly rich
- 281 biggest customers consumed more than 16% of electricity\* but paid same as all but the smallest consumers
- New tariff structures with high use customers paying more should be considered

# One Potential New Tariff Structure

- The tariff structure below is more progressive
- It would lead to additional revenue of \$2 million
- At low levels of consumption it is more generous

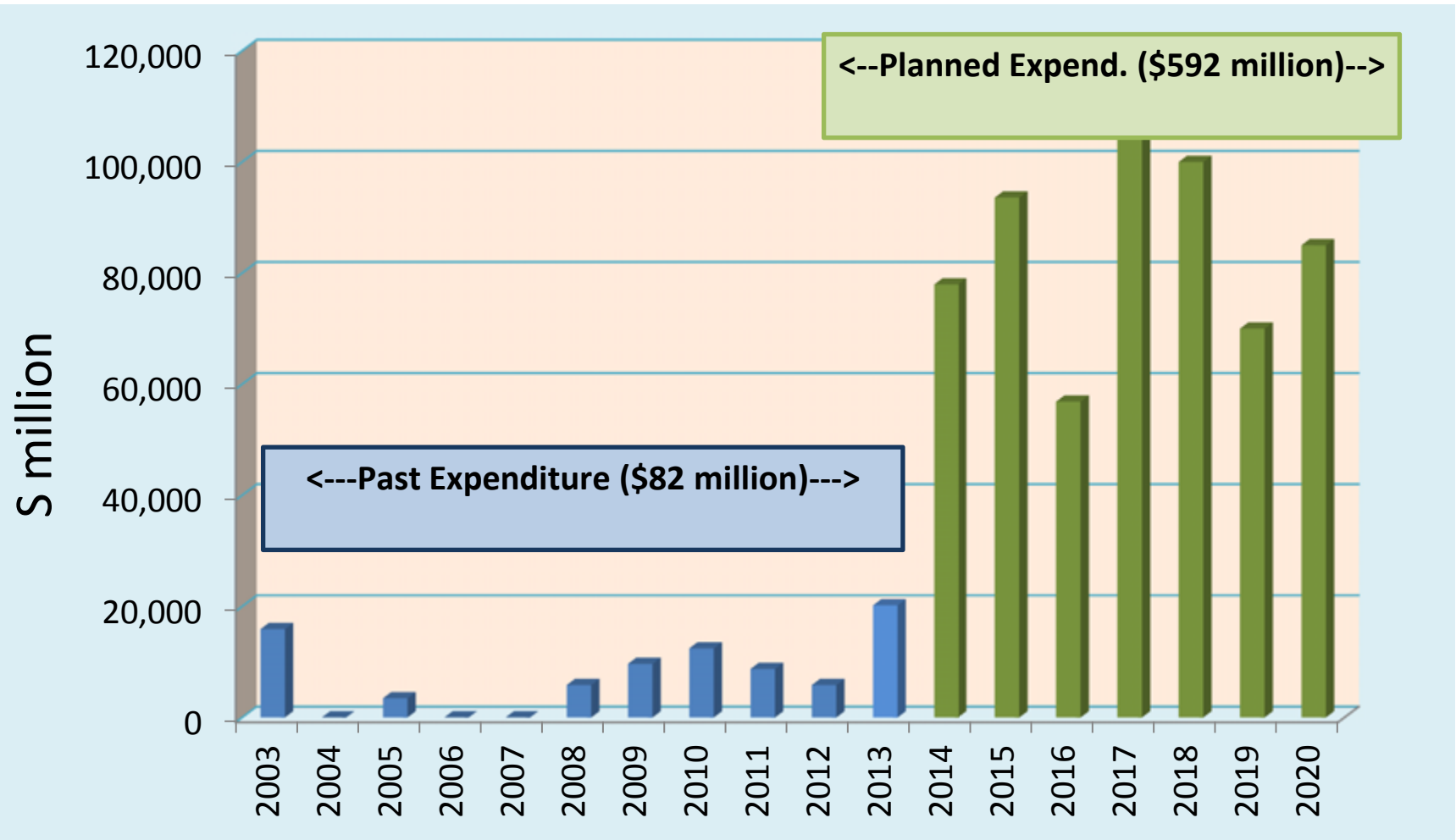
Tariff category	Tariff cents per kilowatt-hour	% of customers
Up to 50 kilowatt hours/month	5	21
51 - 1,000 kilowatt hours/month	12	77
1,001-2,000 kilowatt hours/month	15	1.4
2,001-5,000 kilowatt hours/month	30	0.3
Over 5,000 kilowatt hours/month	42	0.2

# Electricity Subsidy Conclusion

- Government has successfully increased generation and access to electricity
- This has led to a large subsidy. However significantly reducing the subsidy is possible by:
  - Increasing metering and reducing theft
  - Increasing the tariff for households who use a lot of electricity (likely richer households)
  - Considering ways to reduce the cost of producing electricity

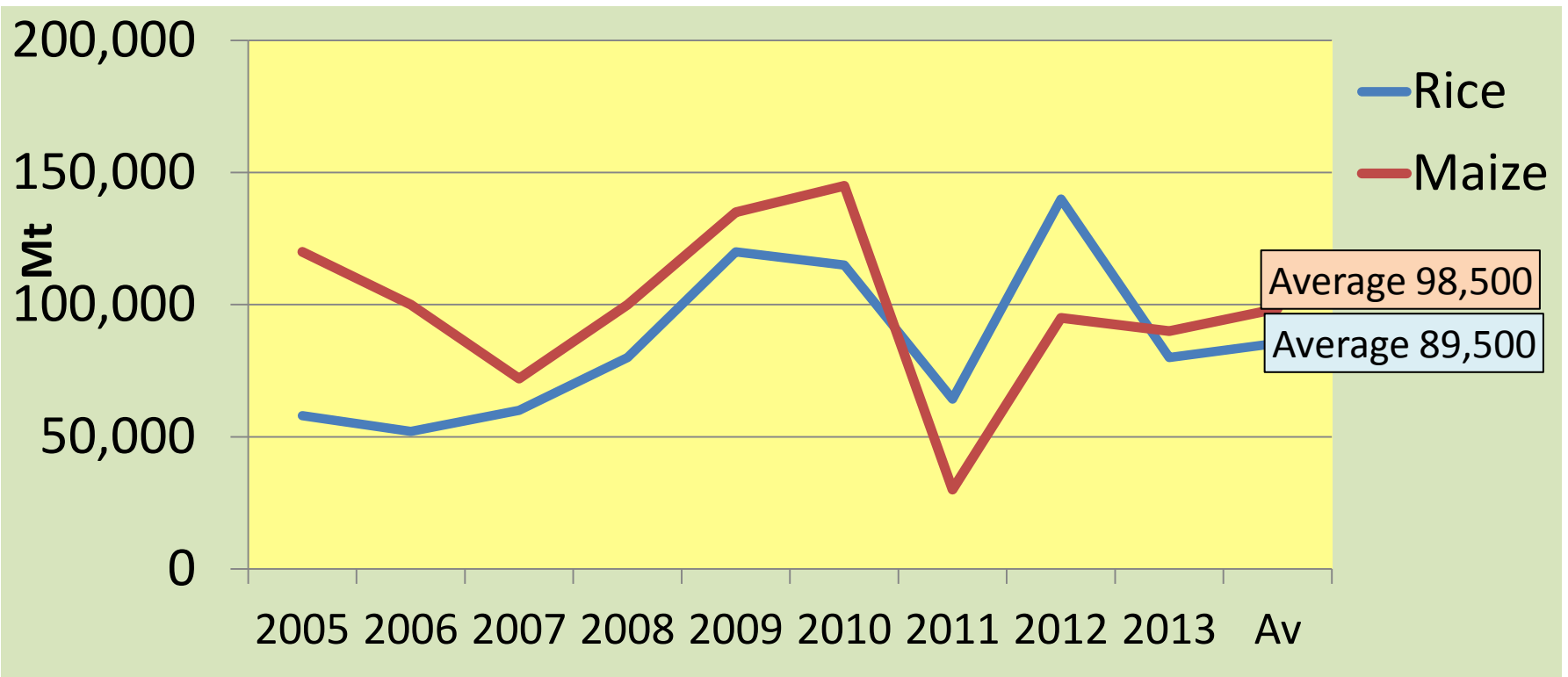


# Ministry of Agriculture has Spent and Plans to Spend Quite a Lot on Large Weir Based Irrigation Schemes (2013 prices)



## But to Date this Spending has Not Led to High Economic Rates of Return Or Increased Overall Production

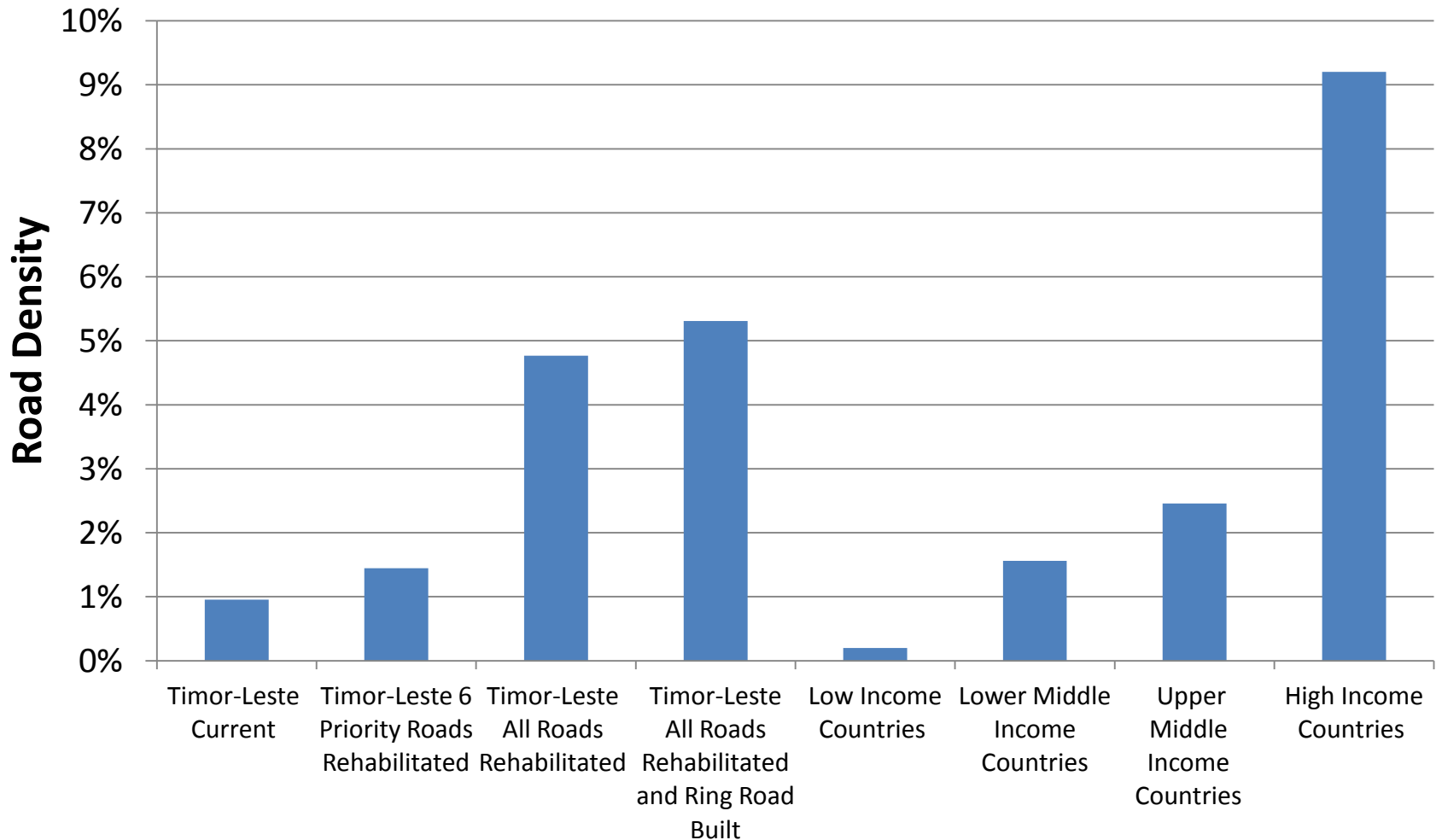
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Economic Internal Rate of Return	Negative	Negative	Negative
Benefit to Cost Ratio	0.18	0.32	0.31



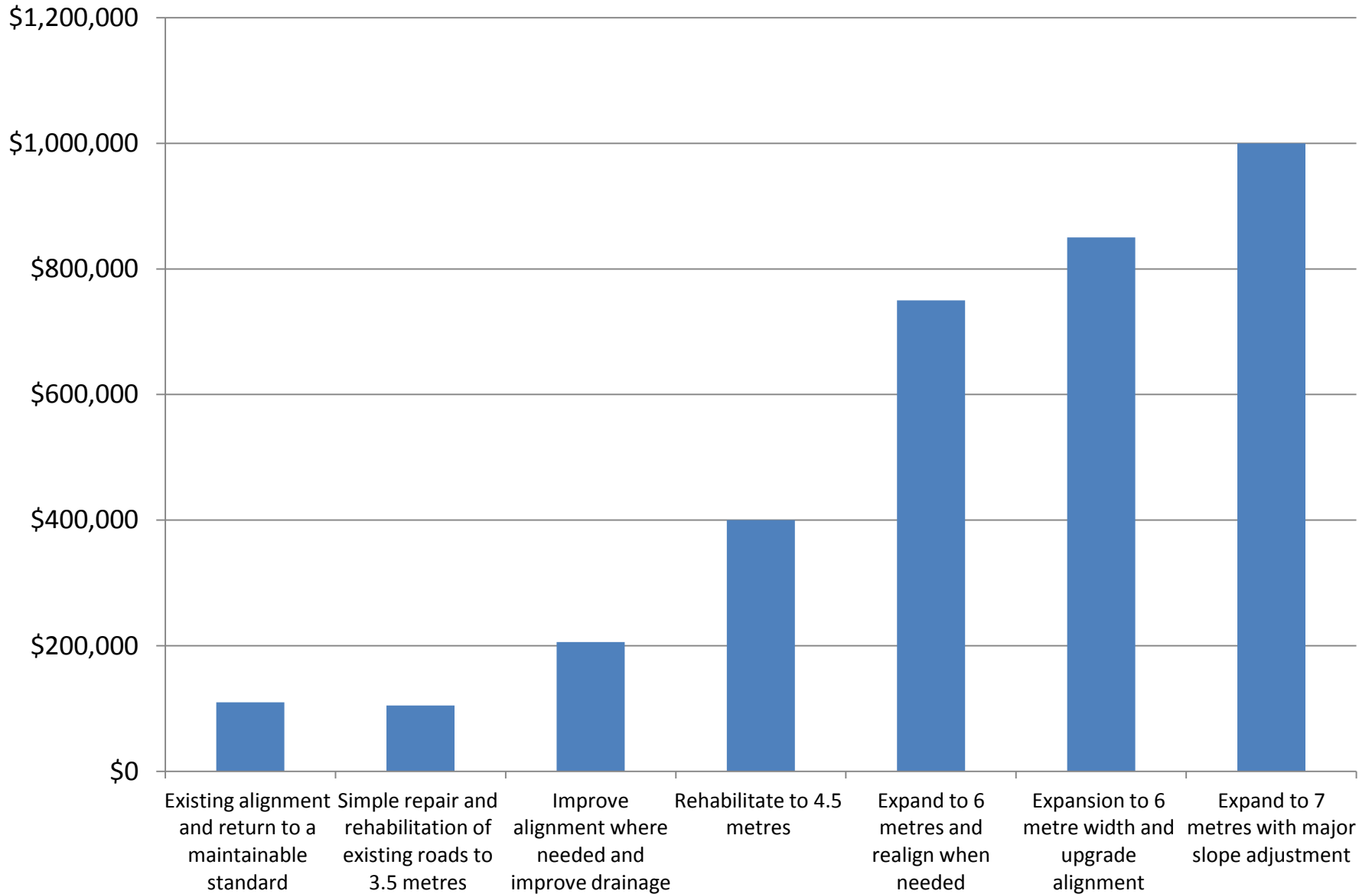
# Why Haven't Irrigation Schemes Been Successful

- The negative returns on these completed schemes can be explained by the high associated construction costs and their limited impact on rice production levels
- The costs of the schemes are high compared to other countries at \$10,000 per hectare.
- The schemes benefit a limited number of farmers and have a limited impact on production because:
  - There is a lack of financial incentives for farmers to produce more rice (due to subsidized rice and other sources of income)
  - The Ministry of Agriculture does not provide an appropriate package of software. More specifically:
    - Extension workers are poorly trained
    - Supply of seed, fertilizer and other chemicals is poor
    - Limited and/or unreliable market and price for rice
- Going forward spending on large scale weir based irrigation should be decreased, spending on software should be increased and tube well irrigation should be considered

# Not all Road Construction/Rehabilitation Outlined in the SDP is Necessary to Become an Upper-middle Income Country

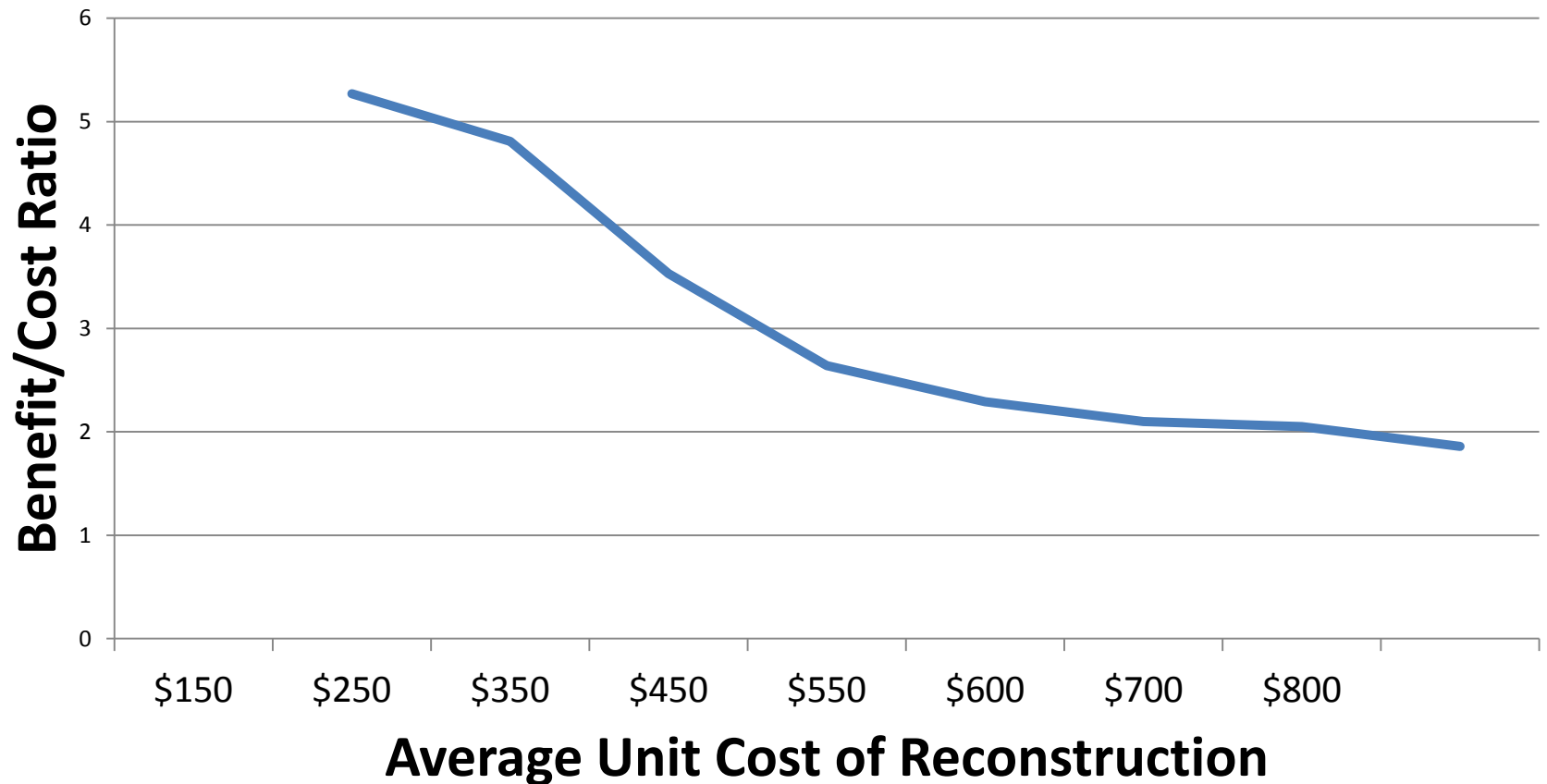


# Average Cost Per KM



# As Unit Costs Increase Benefit to Costs Ratio Declines

## B/C Ratio



# Key Recommendations

1. Expenditure should be constrained to \$1.3 billion a year at most in the short and medium term
2. Budget for operation and maintenance spending for roads and agriculture should be increased. More priority should be given to maintaining and less to constructing
3. Establish a “project bank” of pre-qualified projects with design studies, cost benefit analysis and high economic rates of return. CAFI should choose from bank based on priority and fiscal envelope
4. For all infrastructure projects, line ministries should submit detailed plan and costing of expected operation and maintenance activities. This should be considered when deciding whether to approve new infrastructure spending
5. Ministry of agriculture should maintain existing irrigation schemes and increase farmer support services and market development programs and consider tube-well irrigation
6. Installation of 70,000 additional pre-paid metres should be urgently undertaken and then changes in tariff structure considered