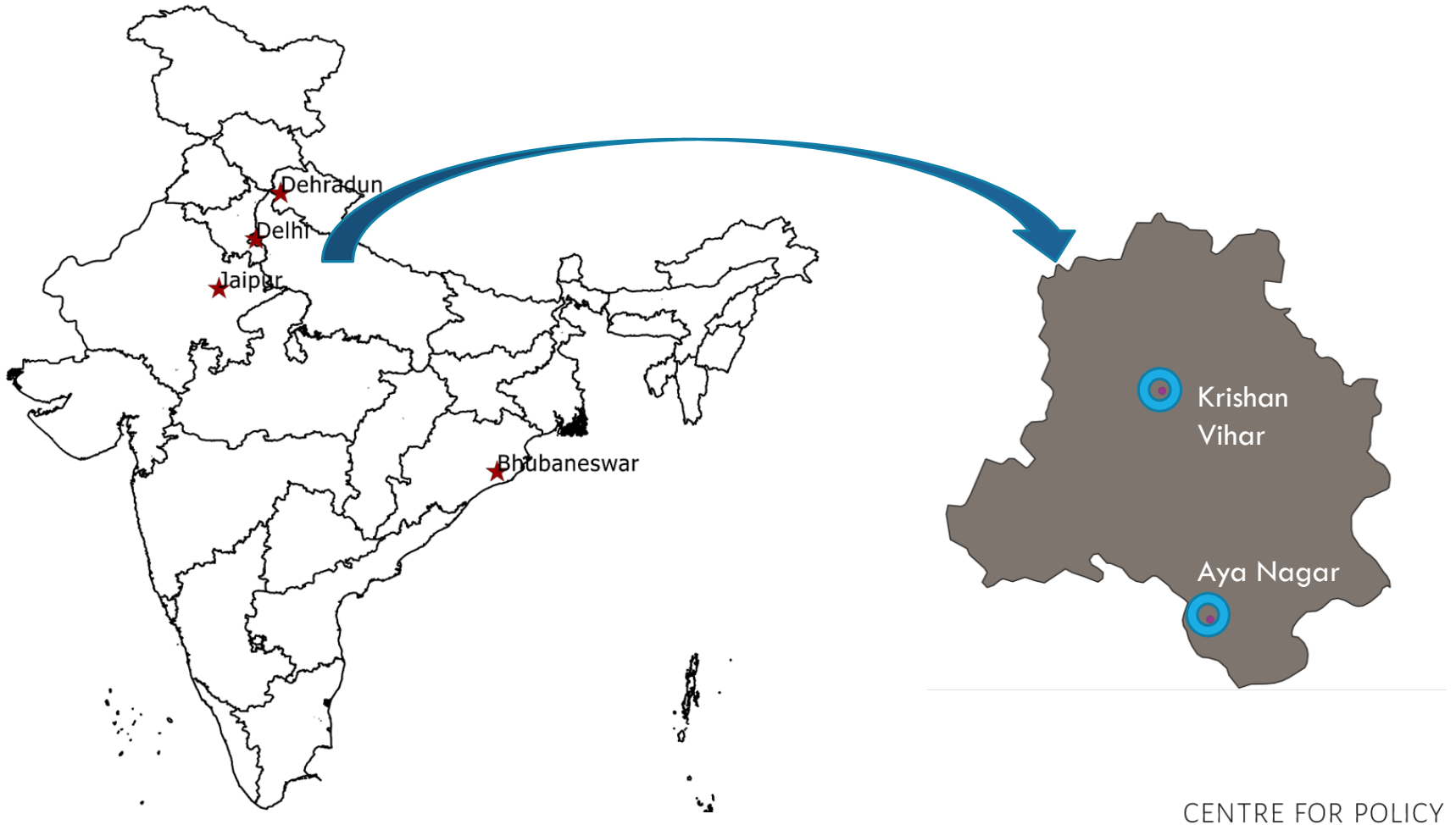
UNDERSTANDING SMALL SCALE BUSINESS OF INFORMAL DE-SLUDGING OPERATORS

A synthesis of 4 Case Studies

CENTRE FOR POLICY RESEARCH

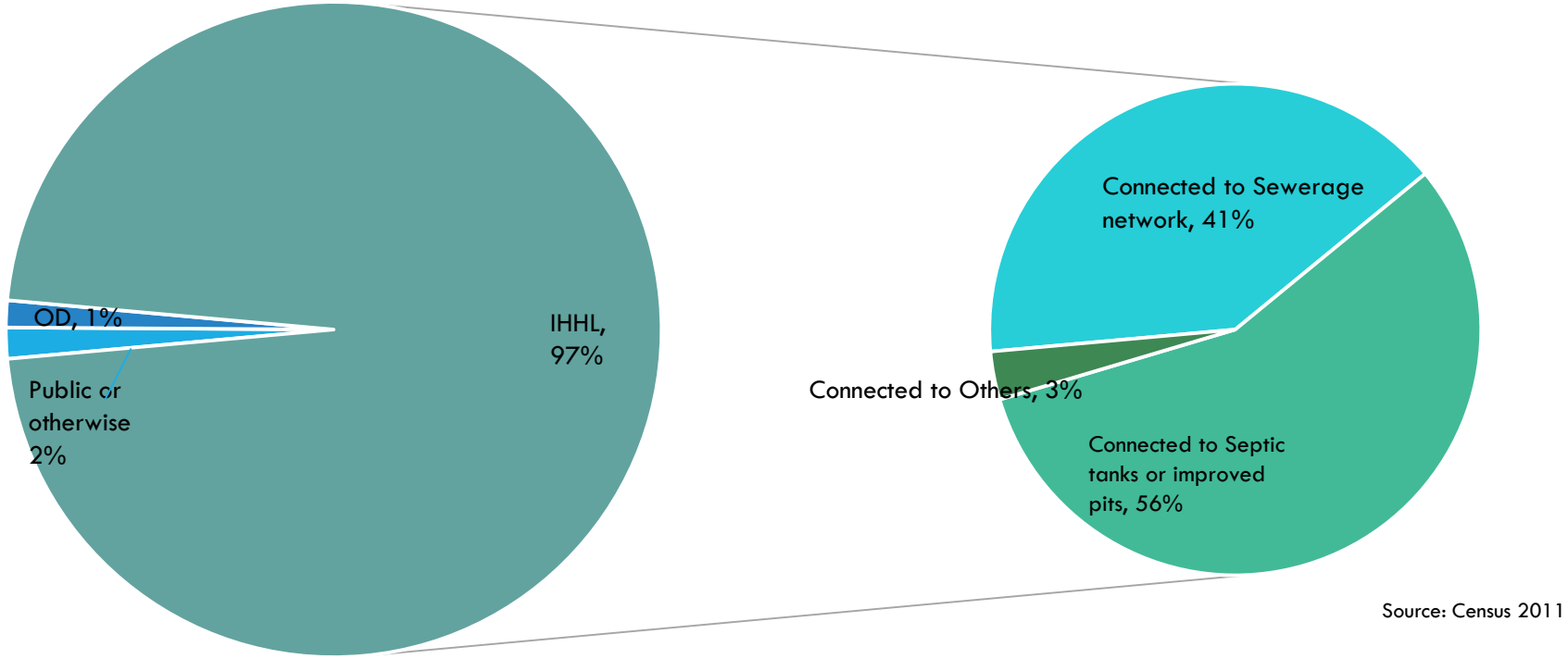
STUDY LOCATIONS



SANITATION PROFILING

Delhi, Jaipur, Dehradun and Bhubaneswar

DEHRADUN



Source: Census 2011

SBM U[2]: IHHL (693/1547) , PTBs/CTBs: 0

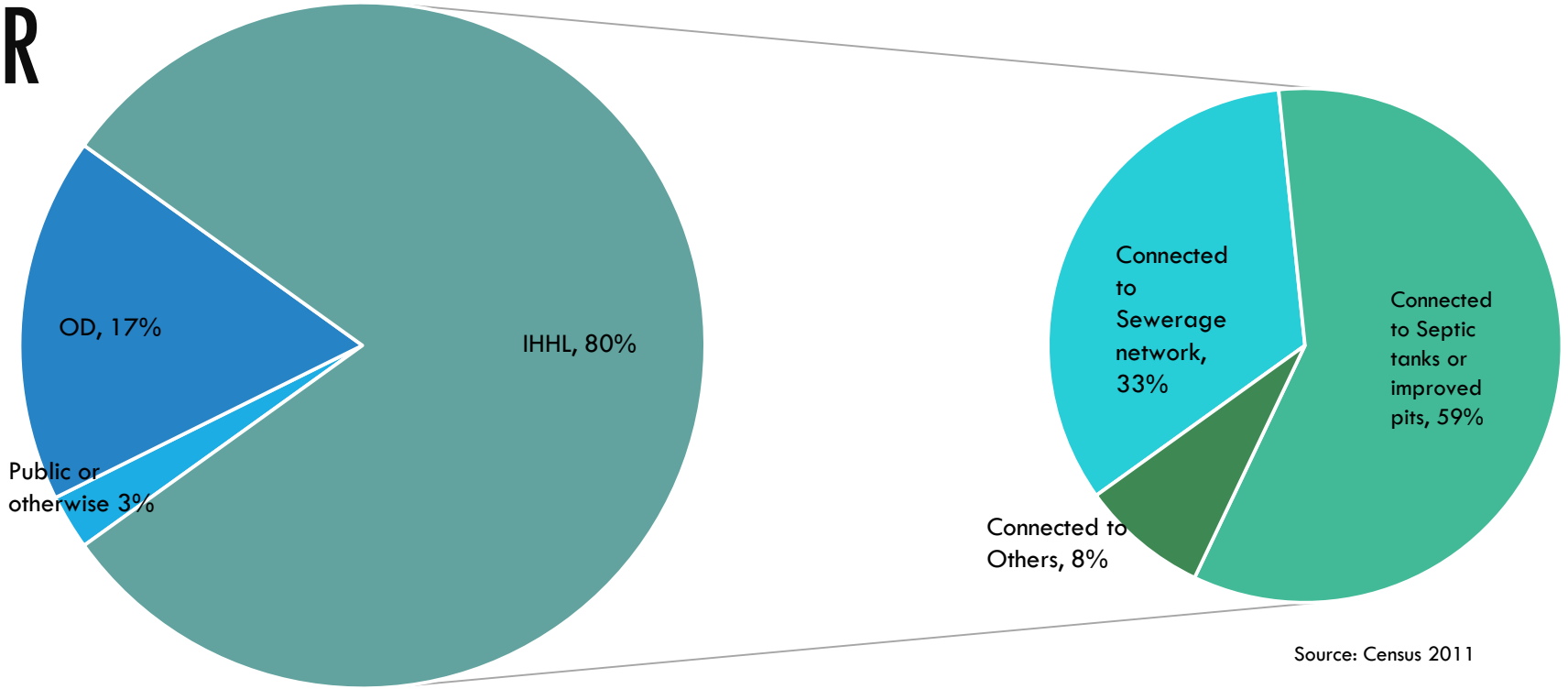
Dehradun has been declared ODF

Under AMRUT[3]: Investment to the tune of 48 Crs. For sanitation

[2] http://swachhbharaturban.gov.in/dashboard/

[3] SAAPs

BHUBANESWAR



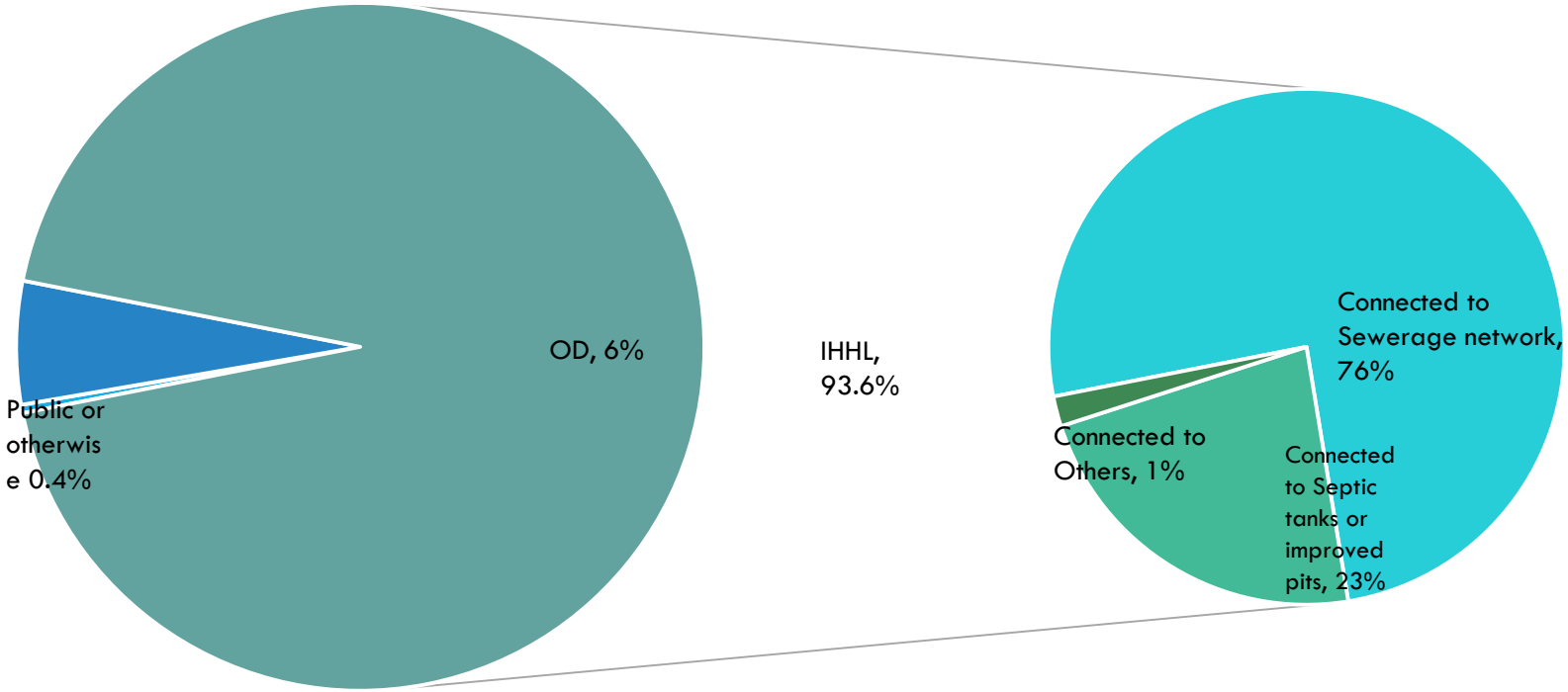
Source: Census 2011

SBM U[2]: IHHL (9258/21252) , PTBs/CTBs: 126

Bhubaneswar has not yet been declared ODF

Under AMRUT[3]: Investment to the tune of 6.65 Crs. For sanitation emphasis on FSTPs

JAIPUR



Source: Census 2011

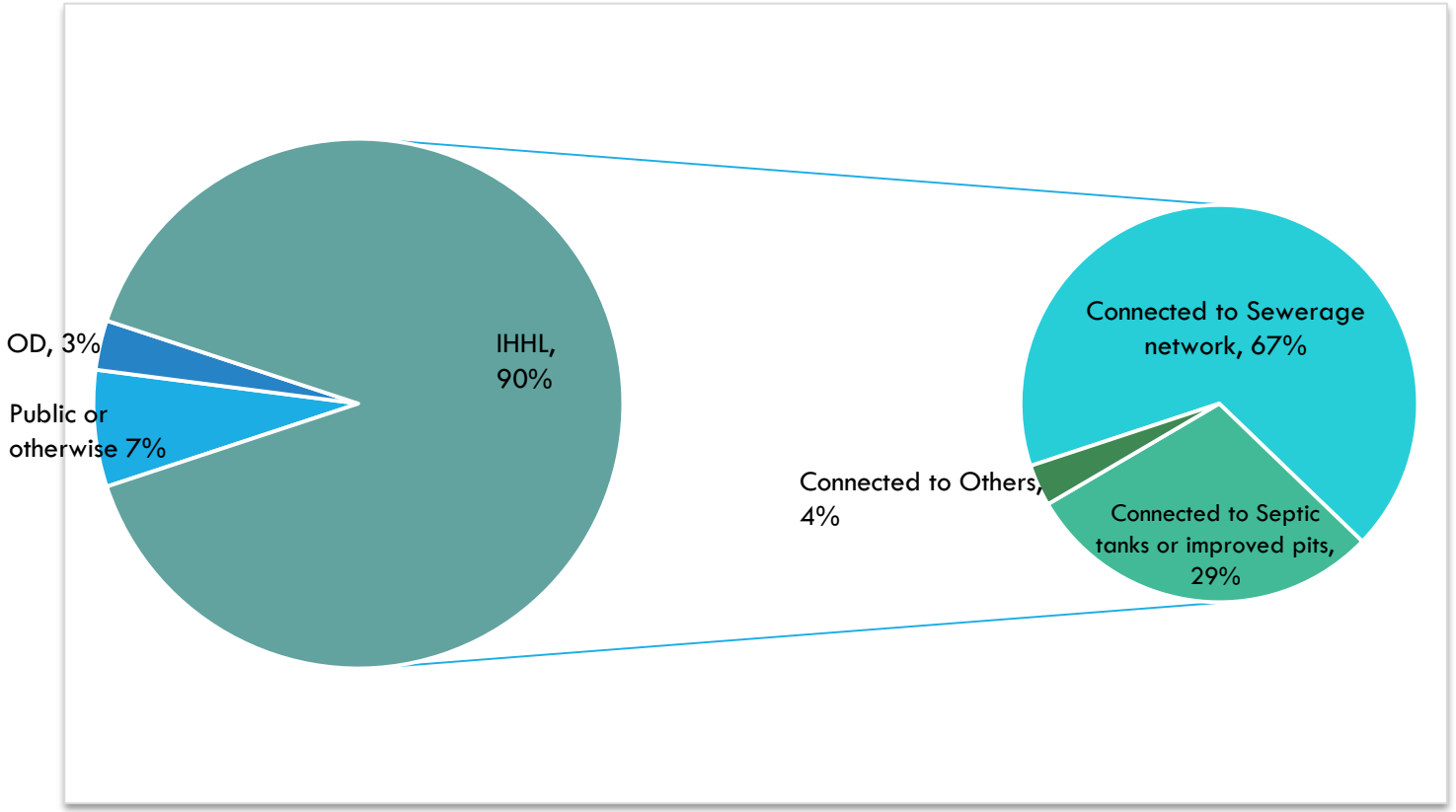
SBM U[2]: IHHL (15885/15867) , PTBs/CTBs: 182

Jaipur has not yet been declared ODF

Under AMRUT[3]: Investment to the tune of 275 Crs. for sanitation

DELHI

Two neighbourhoods



Source: Census 2011

Name of Area	Urban HHs	IHHL (%)	OD (%)	without IHHL (%)	Connected to Sewer (%)	Connected to OSS (%)	% HHs connected to Others
Aya Nagar	6582	93.6%	6.3%	0.1%	5.2%	94.4%	0.4%
Krishan Vihar	8985	NA	NA	NA	NA	NA	NA

SBM U[2]: IHHL (380/516) , PTBs/CTBs: 19171

Delhi has been declared ODF

Under AMRUT[3]: Investment to the tune of 431 Crs. For sanitation

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KEY OBSERVATIONS – FOUR CASE STUDIES

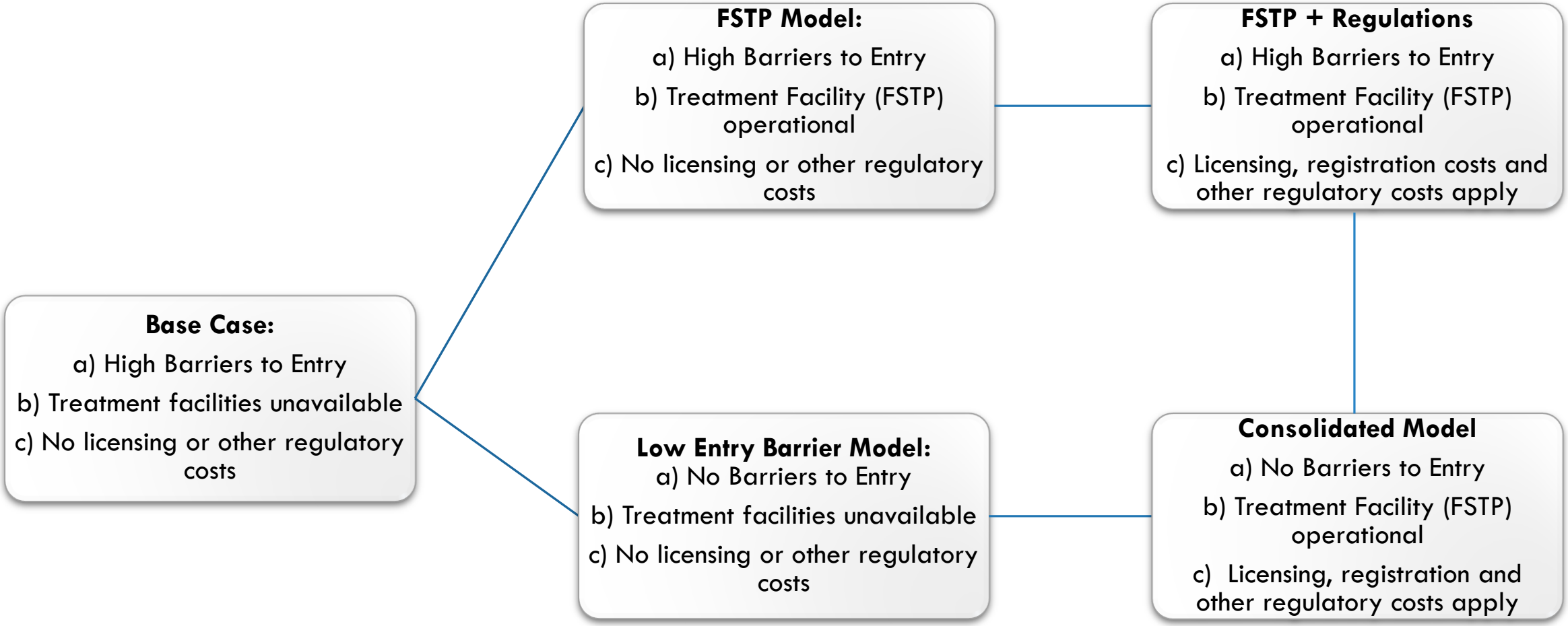
- In Delhi and Jaipur, the operations of septic tank emptiers are region specific as opposed to Bhubaneswar and Dehradun.
- The business thrives due to horizontal cartelisation which led to
  - Agreement regarding price fixation.
  - Agreement relating to market allocation.
  - Agreement relating to limiting or controlling the product and supply market, technical developments, investments etc.
- The entry barriers to the market are negotiated through kinship and/or friendship
- Mostly operated as a part-time enterprise
- Often operators have local political clout and relative economic well-being
- Non-existence of designated dumping sites, lack of regulations, keep the input costs low

LIST OF RISKS IN THE CURRENT OPERATING MODEL

Financial	No access to institutional credit
	Possibility of price war due to new entrants
Regulatory	Not informed or equipped to access necessary clearances
	Risk of law enforcement and police checking
Labour	Availability
	Unsafe labour practices
Public health	Indiscriminate disposal of sludge
	Leakages and slippages from the collection vehicle
	Irregular/unpredictable demand trends
	Quality of the containment structure

UNDERSTANDING THE BUSINESS POTENTIAL

DEFINING THE VARIOUS MODELS



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ASSUMPTIONS - BASIC

- De-sludging enterprises have one revenue source- the fees charged to households and institutions.
- Costs to the enterprise

Capital Costs	Operating Expenses		
Vehicle (tractor/small trucks)	Fuel cost	Wages	Registration fees
Container	Maintenance fees	Tipping fees	licensing fees
Estimated as an average of the data reported by the four case studies	Calculated as an average of costs reported		Annual Depreciation • vehicle@10% and • container @25%

- Other Assumptions

No. of Trips per day	Base price per trip (INR)	Business cycle
4 during non-monsoon and 7 in the rainy season	950	6 years
Range of trips reported	Average price reported	

- Inelastic demand curve for de-sludging

ASSUMPTIONS – MARKET ENTRY AND REGULATORY

Market Entry	Regulatory
Entry possible at the end of year 2	Treatment facilities available • At a distance of 1km from city centre • At a distance of 8km from city centre
Price cut possible by the new entrants of: • 25% • 50%	Pooling possible by visiting max of 2 HHs
Horizontal cartelisation possible at the end of year 3 moving the reduced price back to the initial levels	Collusion not possible
	Have access to the institutional credit market: • 30% down payment • 3 year loan repayment period • Rate of interest @ 9.25% p.a.
	Licensing: Rs. 1000 every two years, with a one-time deposit of Rs. 10,000 in first year[4]
	Vehicular Regulations: Commercial registration, requisite vehicle taxes, obtaining PUC and regular fitness certificates

[4] DJB Septic Tank Emptying Regulations, 2015.

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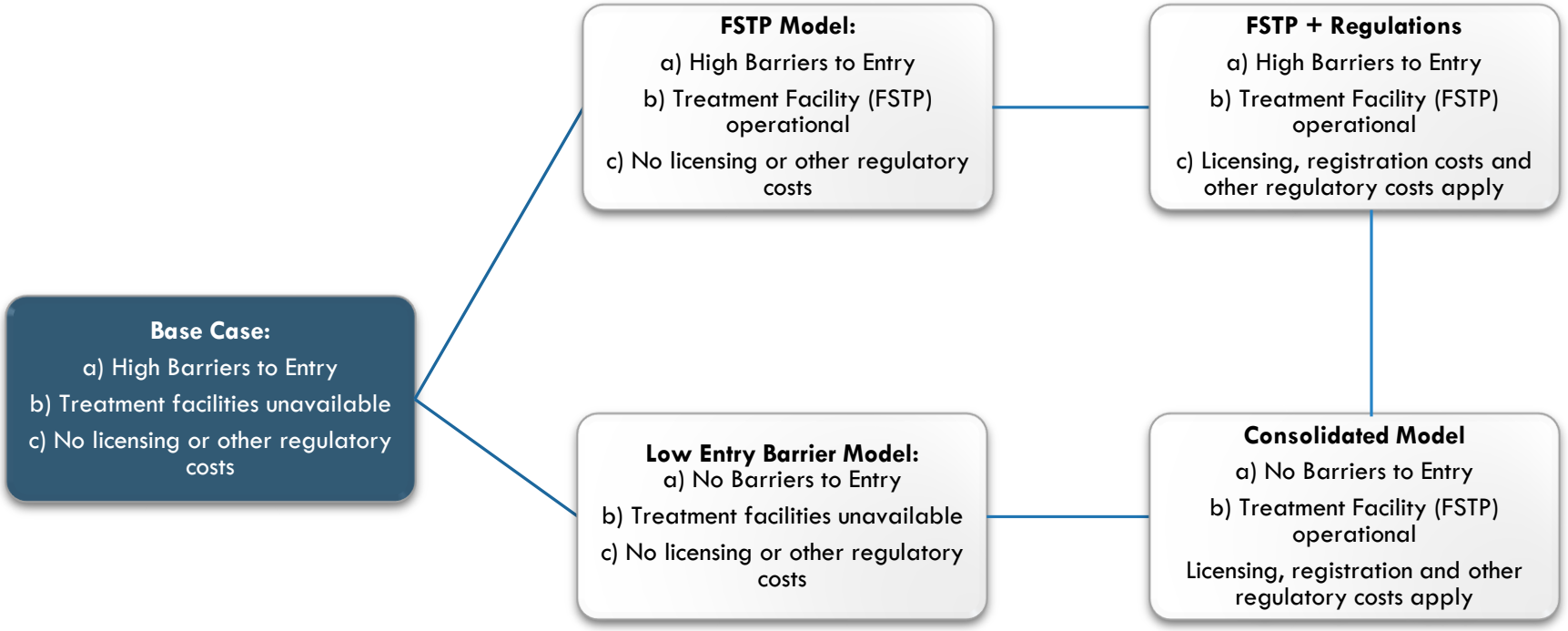
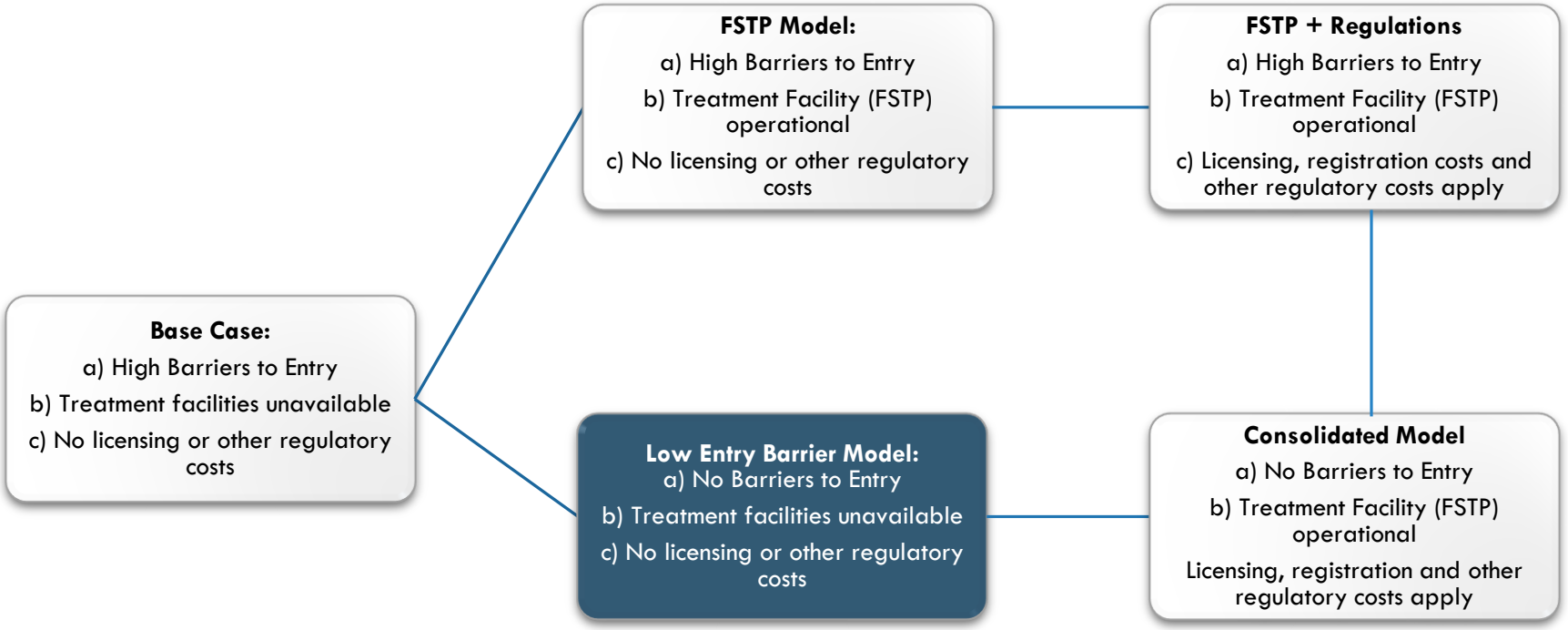
DEFINING THE VARIOUS MODELS



MODEL 1: BASE CASE

Year	Return on Investment
Year 1	-42%
Year 2	95%
Year 3	95%
Year 4	95%
Year 5	56%
Year 6	95%

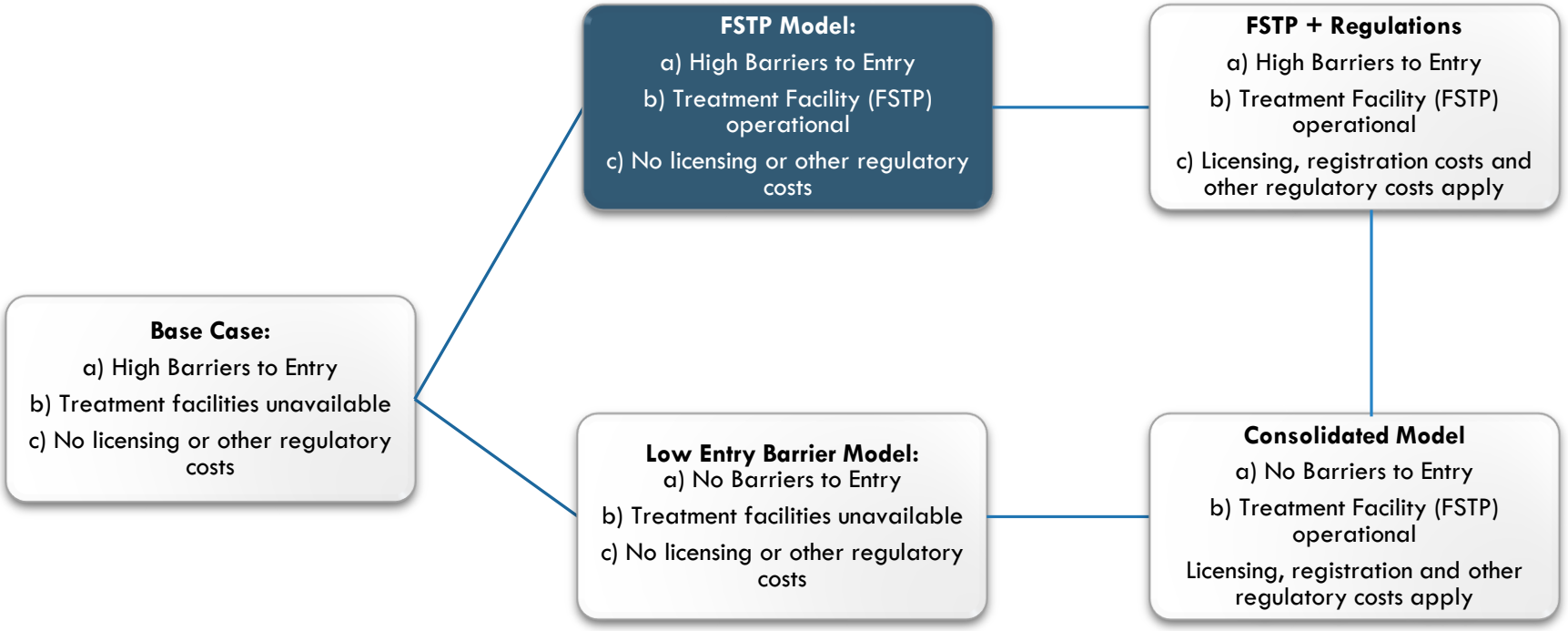
DEFINING THE VARIOUS MODELS



MODEL 2: LOW BARRIERS TO ENTRY

Year	RoI If Price is Cut by 25%	RoI If Price is Cut by 50%
Year 1	-42%	-42%
Year 2	95%	95%
Year 3	90%	83%
Year 4	92%	90%
Year 5	53%	49%
Year 6	92%	90%

DEFINING THE VARIOUS MODELS



MODEL 3 (A): TREATMENT FACILITY OPERATIONAL WITHIN 1 KM

Year	RoI Without Pooling and unchanged price	RoI Without Pooling and new price of 1450	RoI With Pooling and unchanged price	RoI With Pooling and new price of 1000
Year 1	-50%	-25%	-44%	-40%
Year 2	30%	95%	82%	95%
Year 3	30%	95%	82%	95%
Year 4	30%	95%	82%	95%
Year 5	11%	68%	48%	58%
Year 6	30%	95%	82%	95%

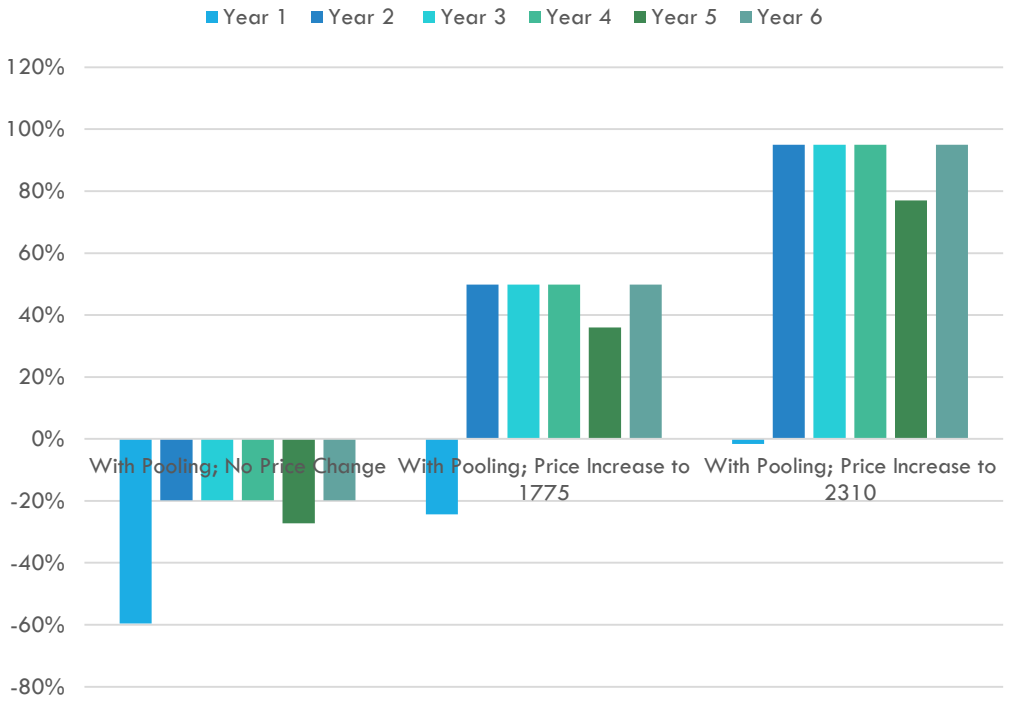
MODEL 3 (B): TREATMENT FACILITY OPERATIONAL WITHIN 8 KM

Year	RoI Without Pooling and unchanged price	RoI Without Pooling and new price of 3168	RoI Without Pooling and new price of 4119	RoI With Pooling and unchanged price	RoI With Pooling and new price of 1775	RoI With Pooling and new price of 2310
Year 1	-71%	-3%	26%	-60%	-24%	-2%
Year 2	-55%	50%	95%	-20%	50%	95%
Year 3	-55%	50%	95%	-20%	50%	95%
Year 4	-55%	50%	95%	-20%	50%	95%
Year 5	-57%	42%	84%	-27%	36%	77%
Year 6	-55%	50%	95%	-20%	50%	95%

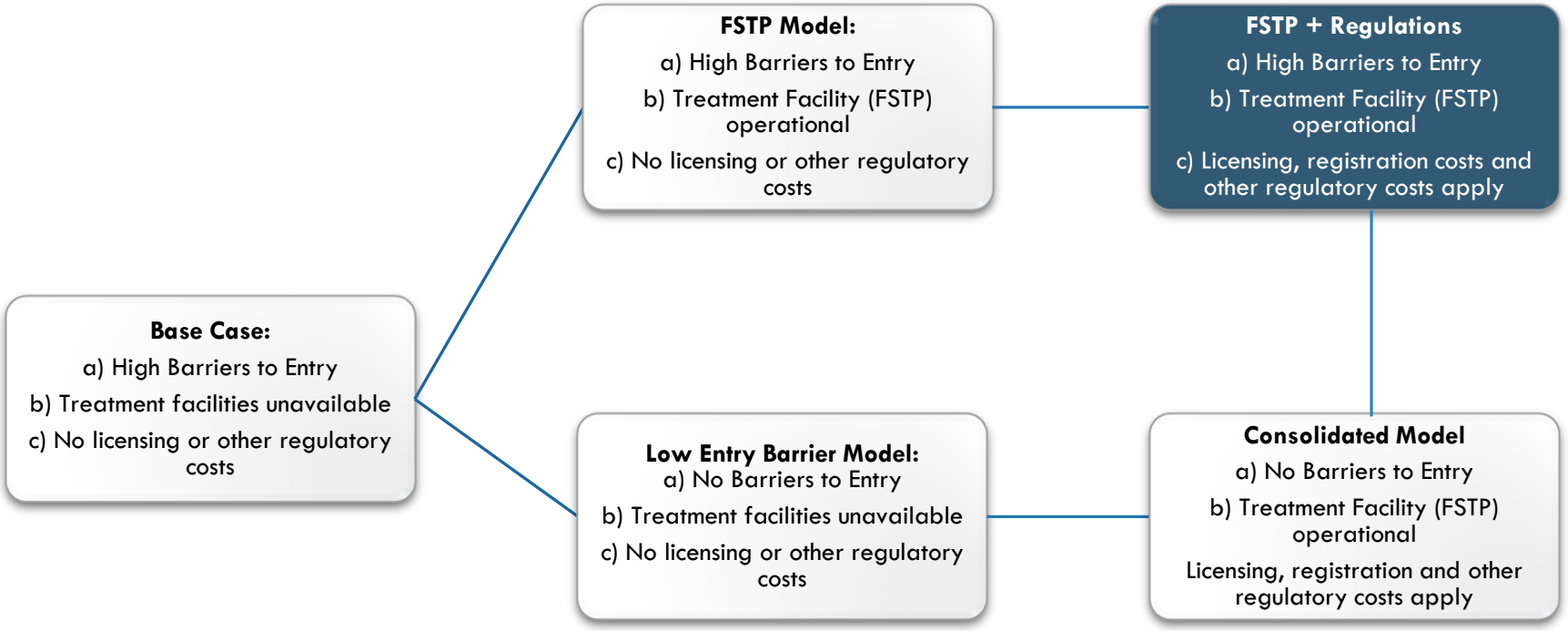
MODEL 3 (B): TREATMENT FACILITY OPERATIONAL WITHIN 8 KM

Without Pooling:

With Pooling:



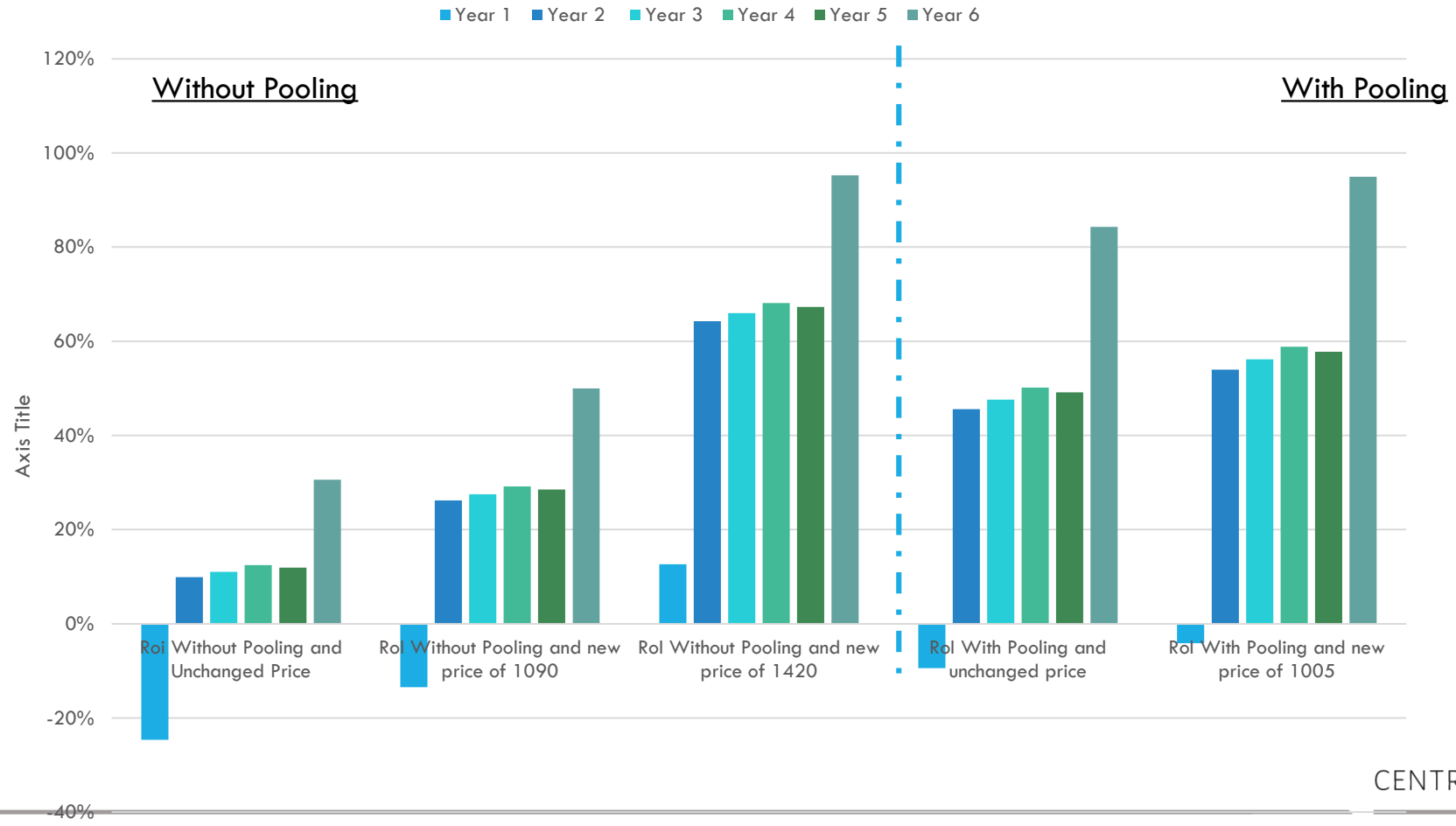
DEFINING THE VARIOUS MODELS



MODEL 4 (A): TREATMENT FACILITY OPERATIONAL WITHIN 1 KM; REGULATIONS INTRODUCED

Year	RoI Without Pooling and Unchanged Price	RoI Without Pooling and new price of 1090	RoI Without Pooling and new price of 1420	RoI With Pooling and unchanged price	RoI With Pooling and new price of 1005
Year 1	-25%	-13%	13%	-9%	-9%
Year 2	10%	26%	64%	46%	46%
Year 3	11%	28%	66%	48%	48%
Year 4	12%	29%	68%	50%	50%
Year 5	12%	29%	67%	49%	49%
Year 6	31%	50%	95%	84%	84%

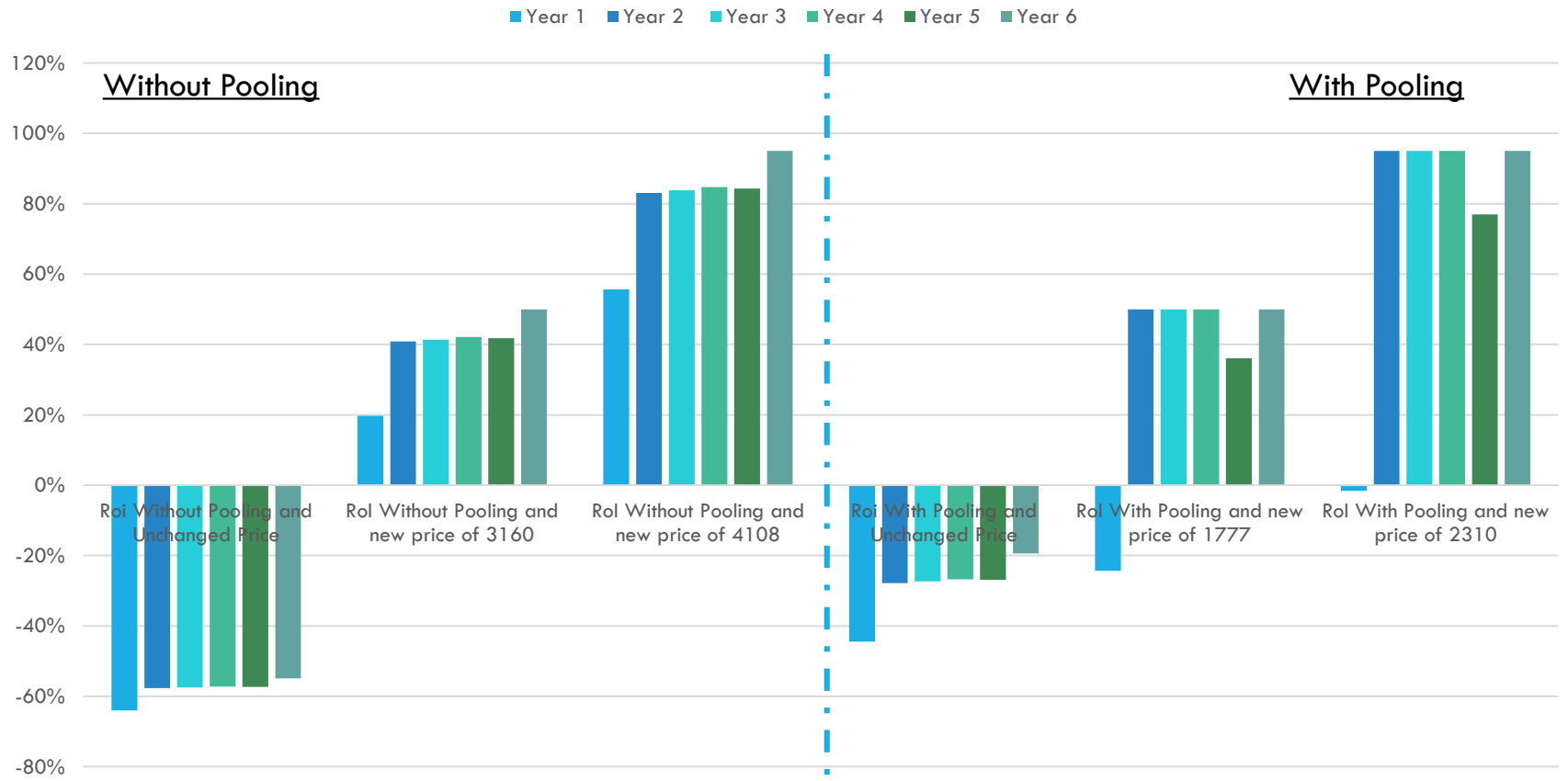
MODEL 4 (A): TREATMENT FACILITY OPERATIONAL WITHIN 1 KM; REGULATIONS INTRODUCED



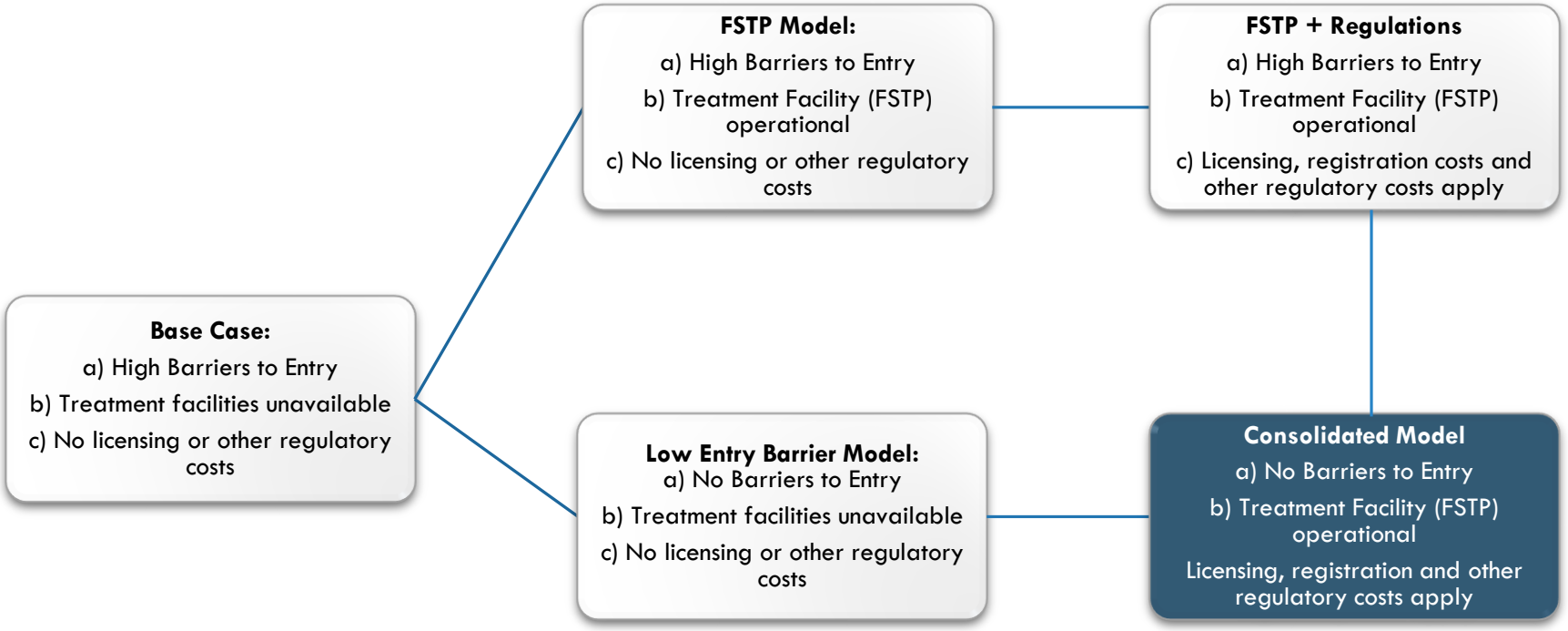
MODEL 4 (B): TREATMENT FACILITY OPERATIONAL WITHIN 8 KM; REGULATIONS INTRODUCED

Year	RoI Without Pooling and Unchanged Price	RoI Without Pooling and new price of 3160	RoI Without Pooling and new price of 4108	RoI With Pooling and Unchanged Price	RoI With Pooling and new price of 1777	RoI With Pooling and new price of 2310
Year 1	-64%	20%	56%	-45%	-24%	-2%
Year 2	-58%	41%	83%	-28%	50%	95%
Year 3	-57%	41%	84%	-27%	50%	95%
Year 4	-57%	42%	85%	-27%	50%	95%
Year 5	-57%	42%	84%	-27%	36%	77%
Year 6	-55%	50%	95%	-19%	50%	95%

MODEL 4 (B): TREATMENT FACILITY OPERATIONAL WITHIN 8 KM; REGULATIONS INTRODUCED



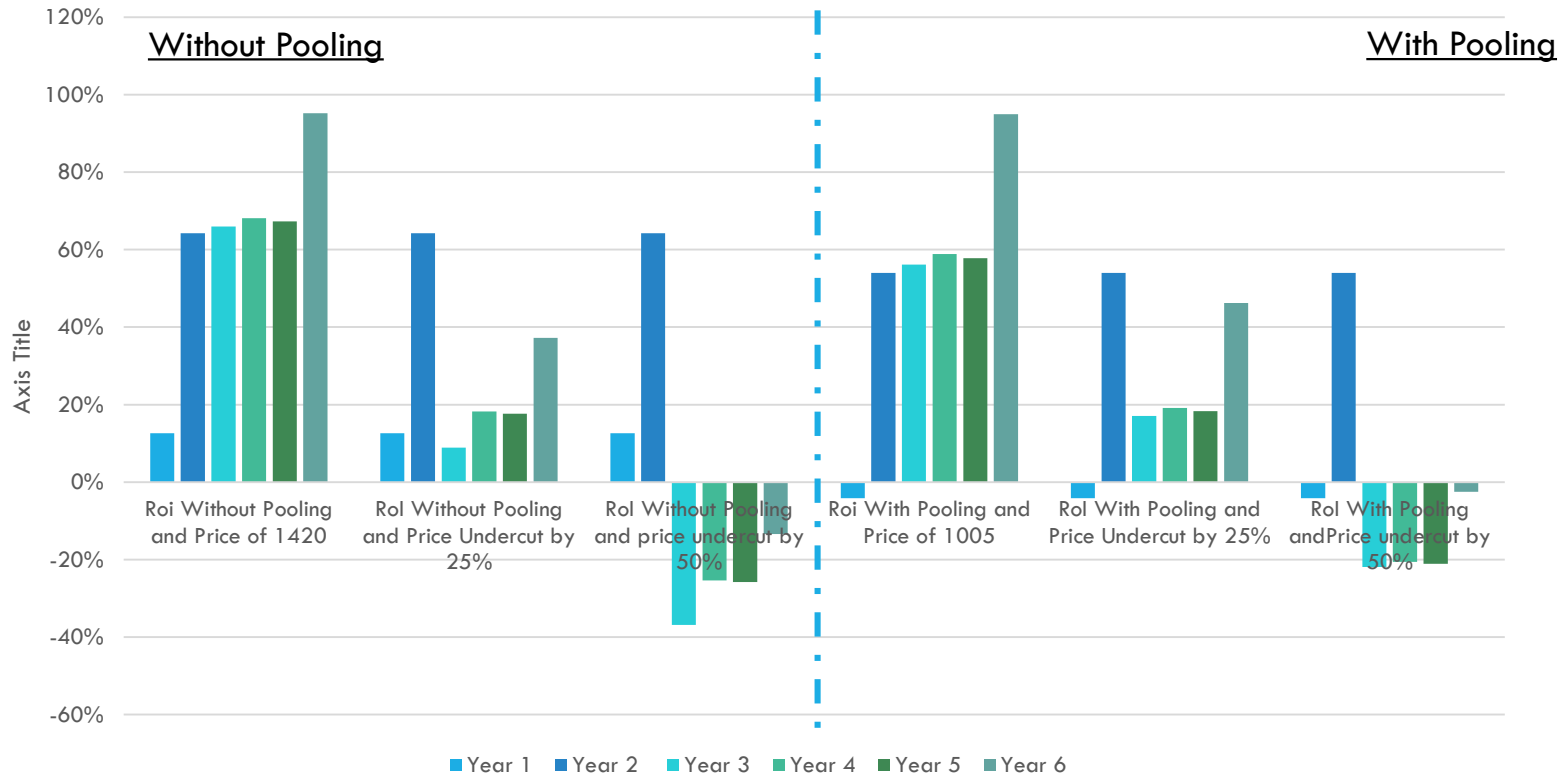
DEFINING THE VARIOUS MODELS



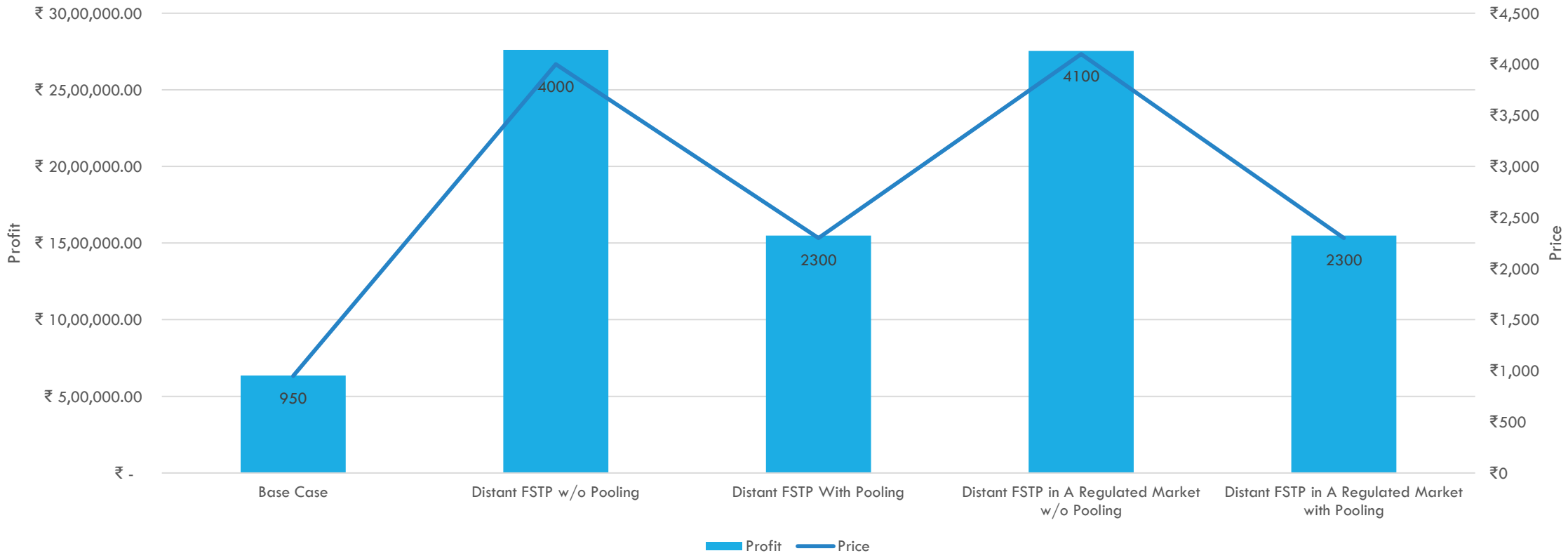
MODEL 5: TREATMENT FACILITY OPERATIONAL WITHIN 1 KM; REGULATIONS INTRODUCED; LOW BARRIERS TO ENTRY

Year	RoI Without Pooling and Price of 1420	RoI Without Pooling and Price Undercut by 25%	RoI Without Pooling and price undercut by 50%	RoI With Pooling and Price of 1005	RoI With Pooling and Price Undercut by 25%	RoI With Pooling and Price undercut by 50%
Year 1	13%	13%	13%	-4%	-4%	-4%
Year 2	64%	64%	64%	54%	54%	54%
Year 3	66%	9%	-37%	56%	17%	-22%
Year 4	68%	18%	-25%	59%	19%	-21%
Year 5	67%	18%	-26%	58%	18%	-21%
Year 6	95%	37%	-13%	95%	46%	-3%

MODEL 5: TREATMENT FACILITY OPERATIONAL WITHIN 1 KM; REGULATIONS INTRODUCED; LOW BARRIERS TO ENTRY



ANALYZING VARIABILITY ACROSS MODELS: THE 'NEARBY FSTP' CASE



ANALYZING VARIABILITY ACROSS MODELS: THE 'DISTANT FSTP' CASE

CENTRE FOR POLICY RESEARCH

CONCLUSIONS

- If regulations are driven by public good perspective, is it at the expense of these enterprises?
- Is it more useful for the consumers to have different set of service providers – Government as well as private?
- Is differential pricing the way ahead?
  - Among HHs – f(plot size)? Plot size as a proxy for economic status in cities?
  - Among institutional buildings – hotels, hospitals, shopping complexes, schools and colleges?
  - Based on the distance to be travelled for the treatment facility?
- Should locating the treatment facility be a f(city size, urbanisation prospect, no. of households dependent on OSS and future plans to cover the city under networked solutions) ?
- Scheduled may decrease cost – is it implementable?
- Is pooling for economic benefit the way forward?
- Is 'uberisation' of the de-sludging services able to stabilise the prices?
- Should the regulations come in at one go, or incrementally?

NEXT STEPS

- Early Pointers from Current assessments:
  - Existing locally organized informal monopolies could be formed into local area associations. This would help address market share and pricing issues, organize a network through which inputs to upgrade/upscale their operations
  - Work with operators to improve their own understanding of FSM, hygiene and safety practices etc.
  - Need to understand the existing business models – cost of operations and investment strategies, profits and operating margins – in order to develop regulations that provide cost effective services and still allow operators to have reasonable and relatively stable returns
  - Planning for FSTP sites/disposal facilities need to be decided based on some distance parameters after considering its economic impacts on the local operators.
- To study a set of Formal PPPs that have emerged across the country with aim to assess
  - Effective risk sharing models
  - Constraints of scalability
  - Exploring financing mechanisms
  - Business opportunities for desludgers

THANK YOU