Efficient resource allocation to support sustainable rabies control

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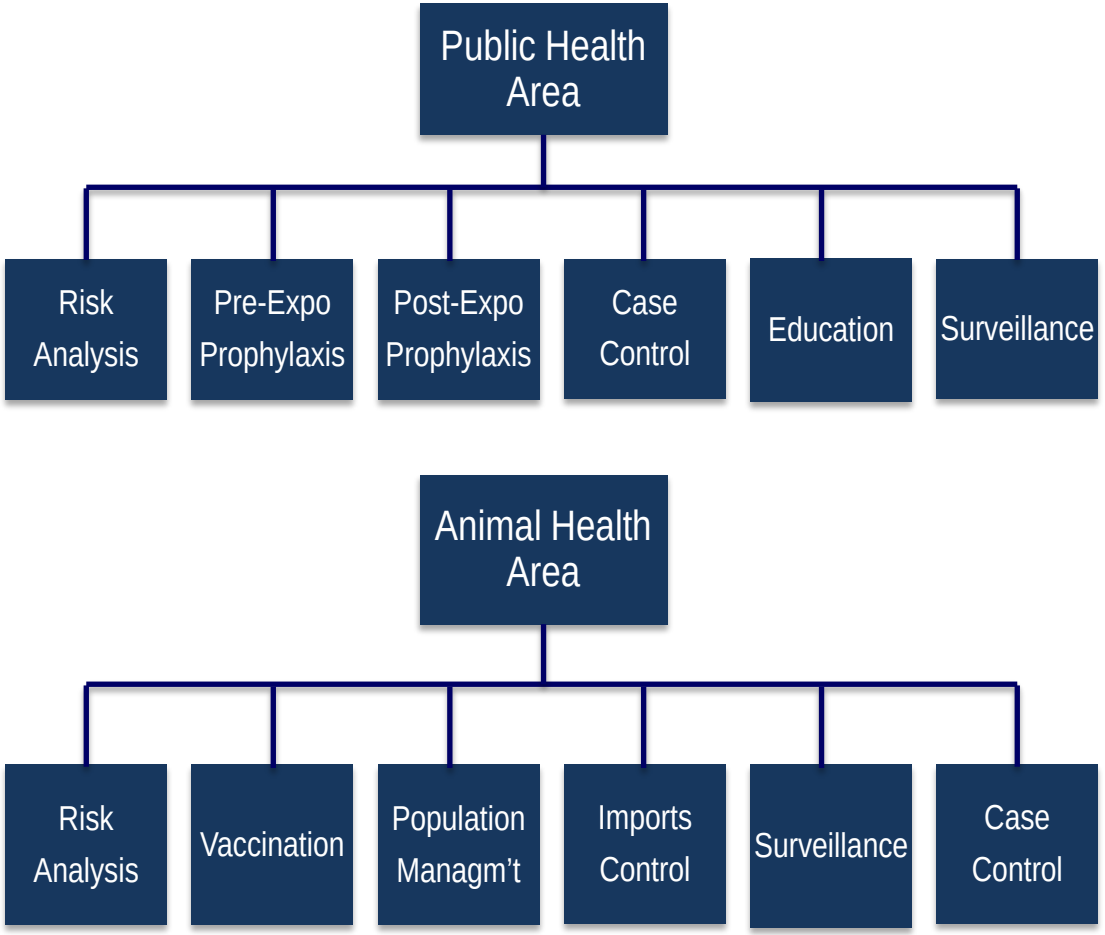
Sustainable Rabies Control

- A number of countries are leading towards dog mediated rabies elimination in the Americas.
- And yet, with the reduction of cases, policy makers face the diminishing relevance of dog-transmitted rabies as a public health priority.

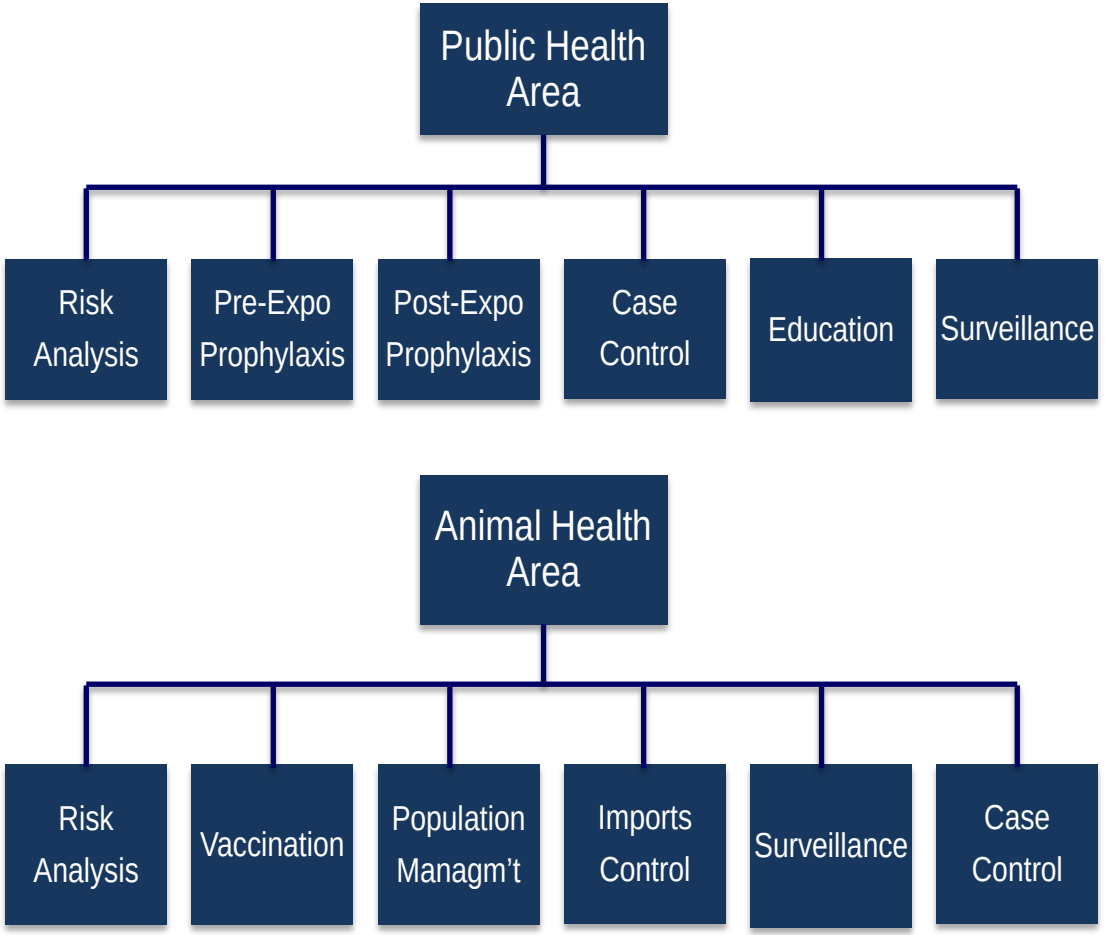
Evaluating Capacities against Rabies

- Large number of capacities must be considered.
- Checklists are useful, BUT they don't provide enough granularity to be able to quantify (designed) levels of capacity improvement.

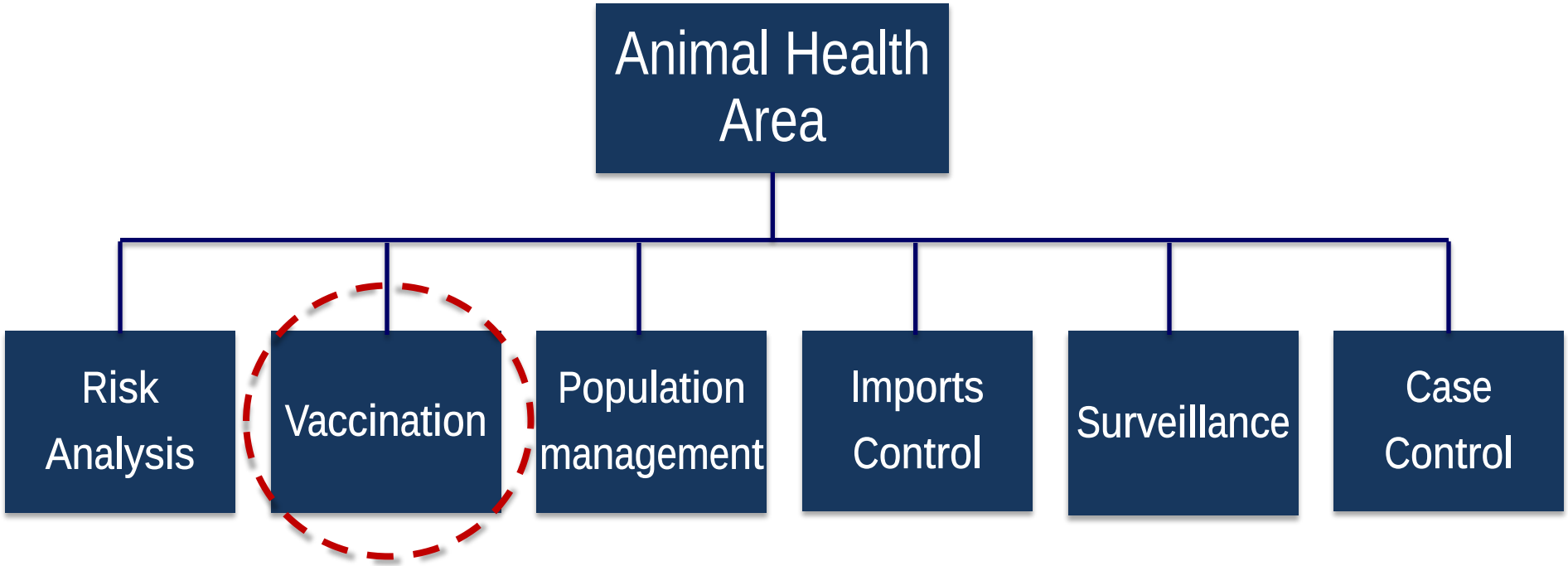


Evaluating Capacities against Rabies

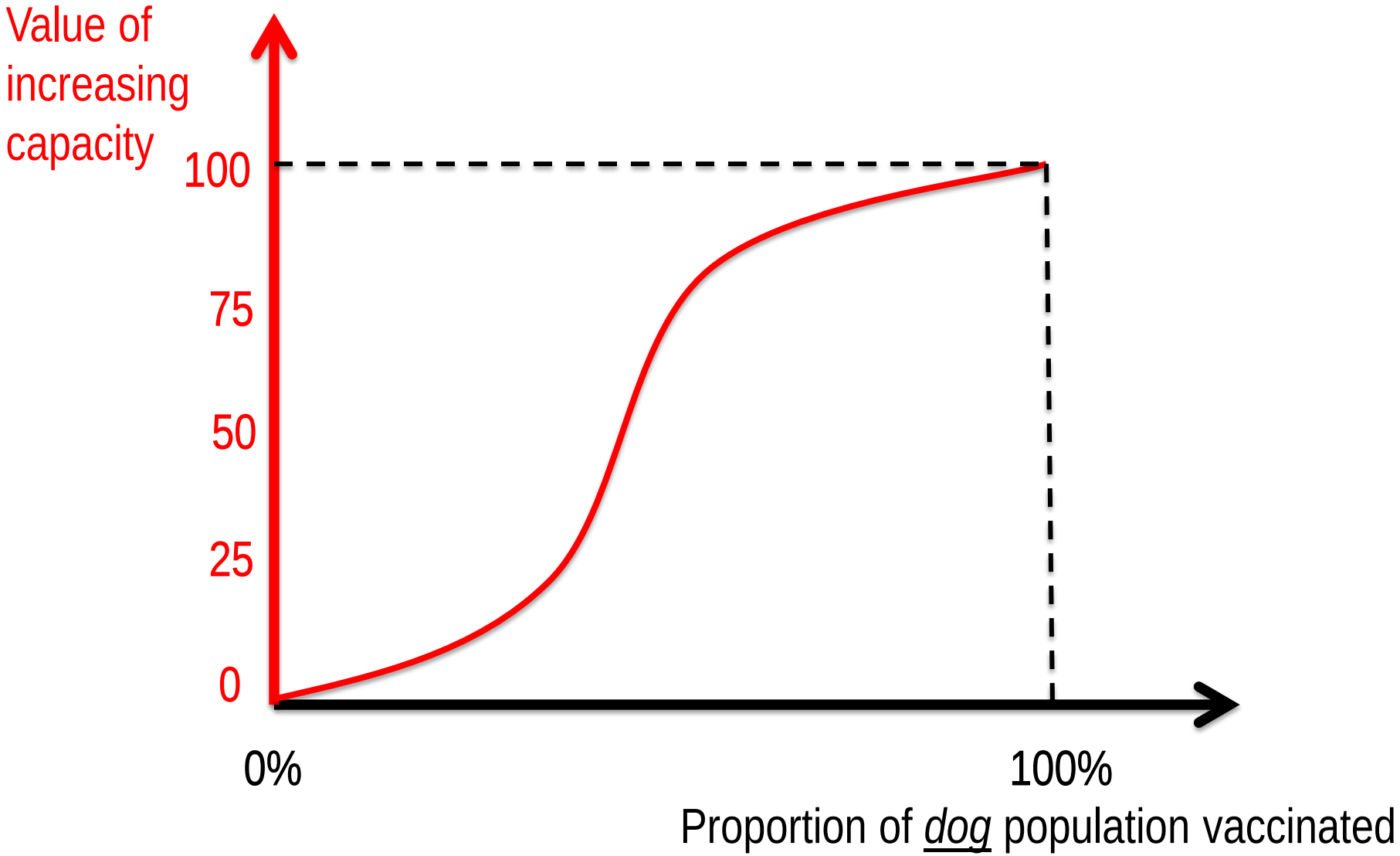
- Multi-Criteria Decision Analysis (MCDA):
  - enables development of capacity specific scores that can be aggregated.
  - considers policy makers' priorities for capacity building.
- MCDA extensively employed in health prioritisations (e.g. Defra, FAO).



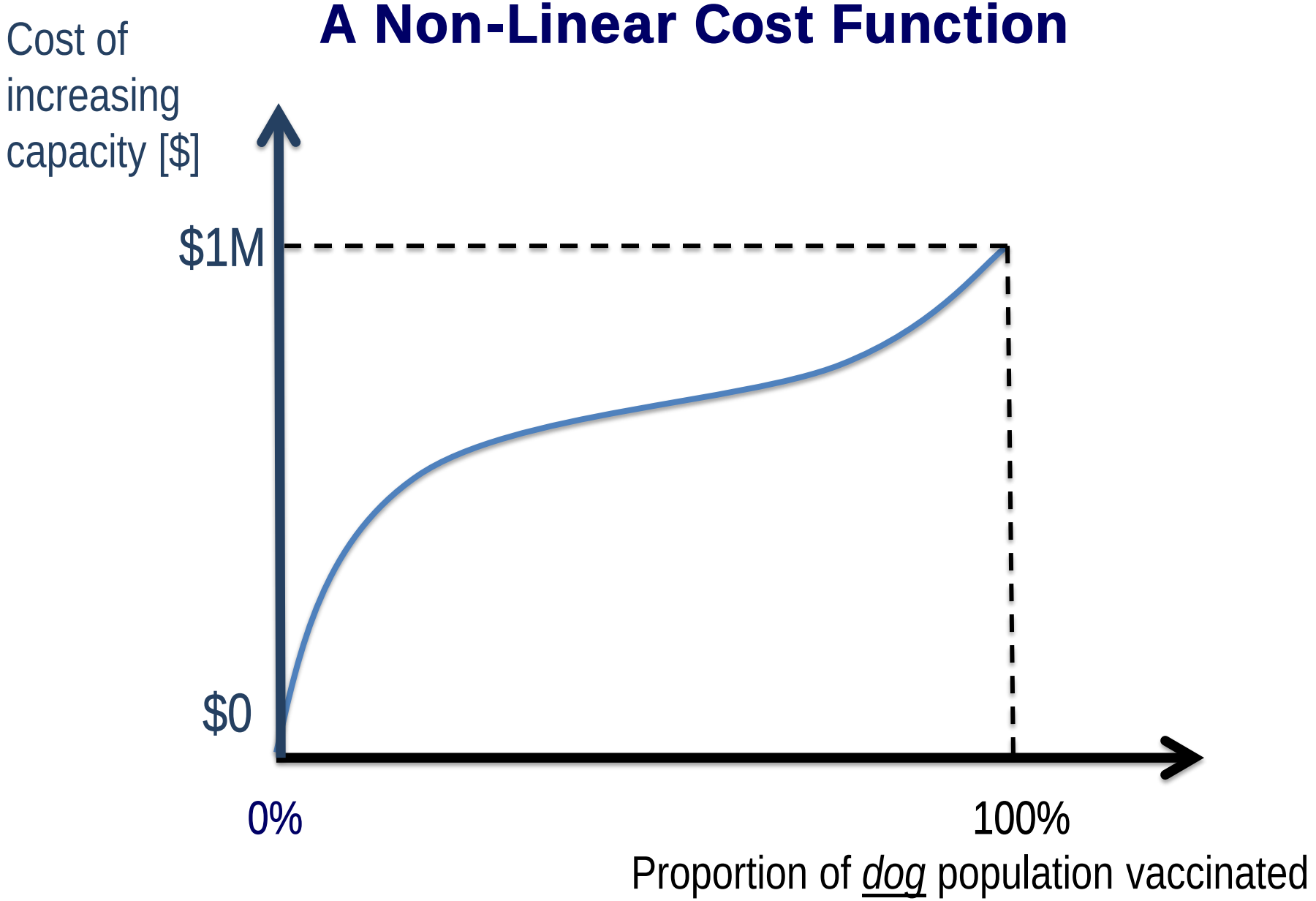
Measuring Multiple Capacities

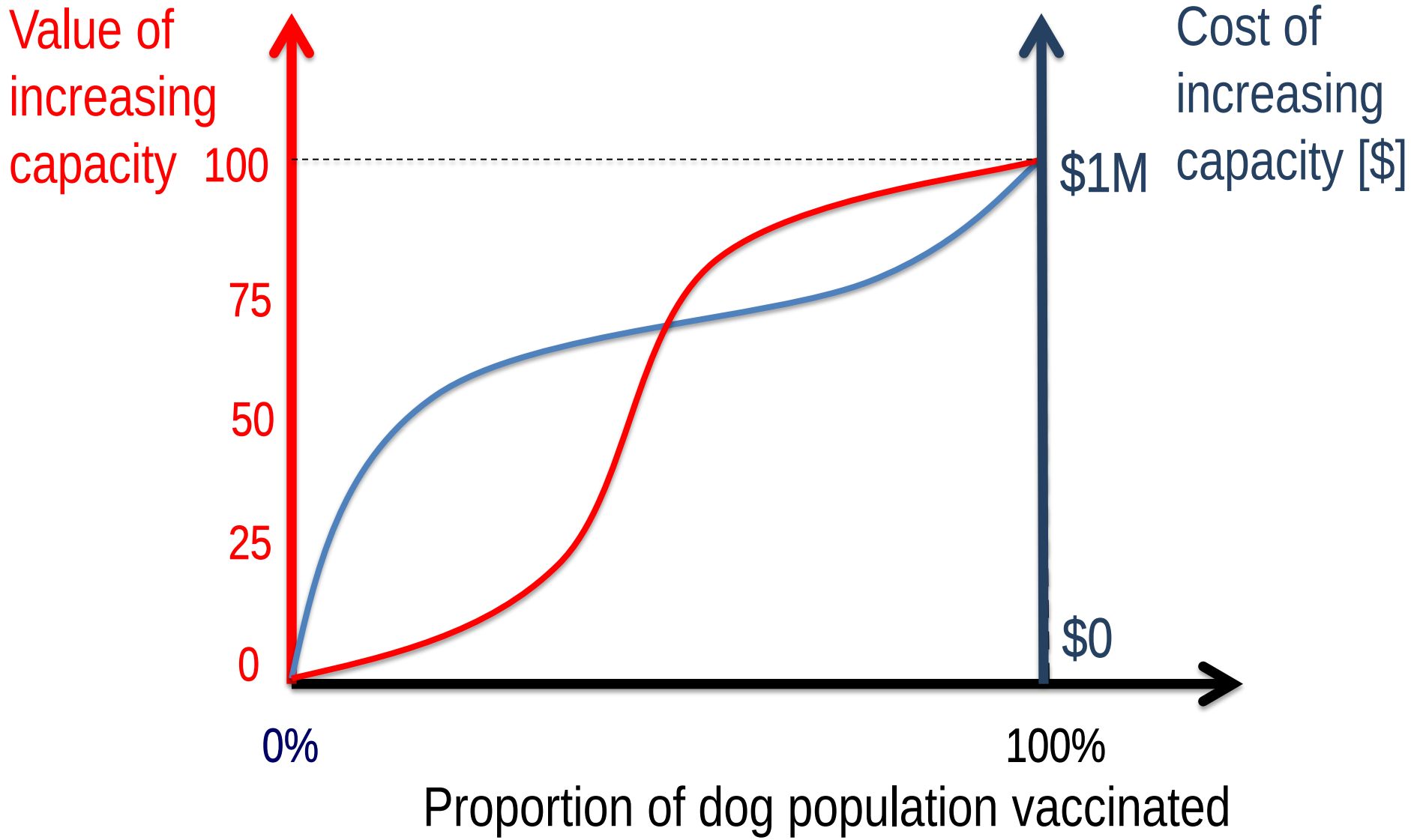


Quantifying the Value of Increasing a Capacity

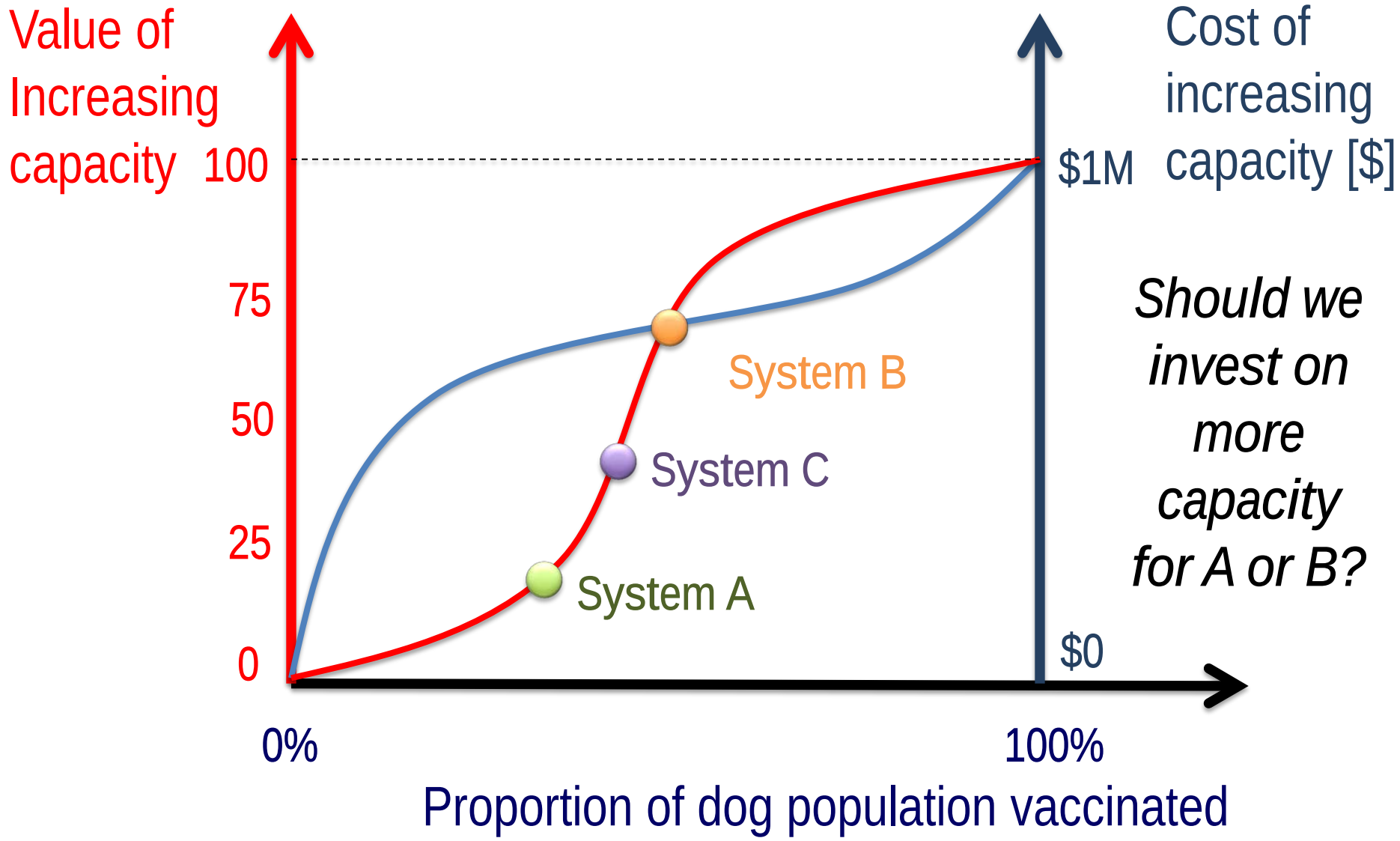


A Non-Linear Cost Function

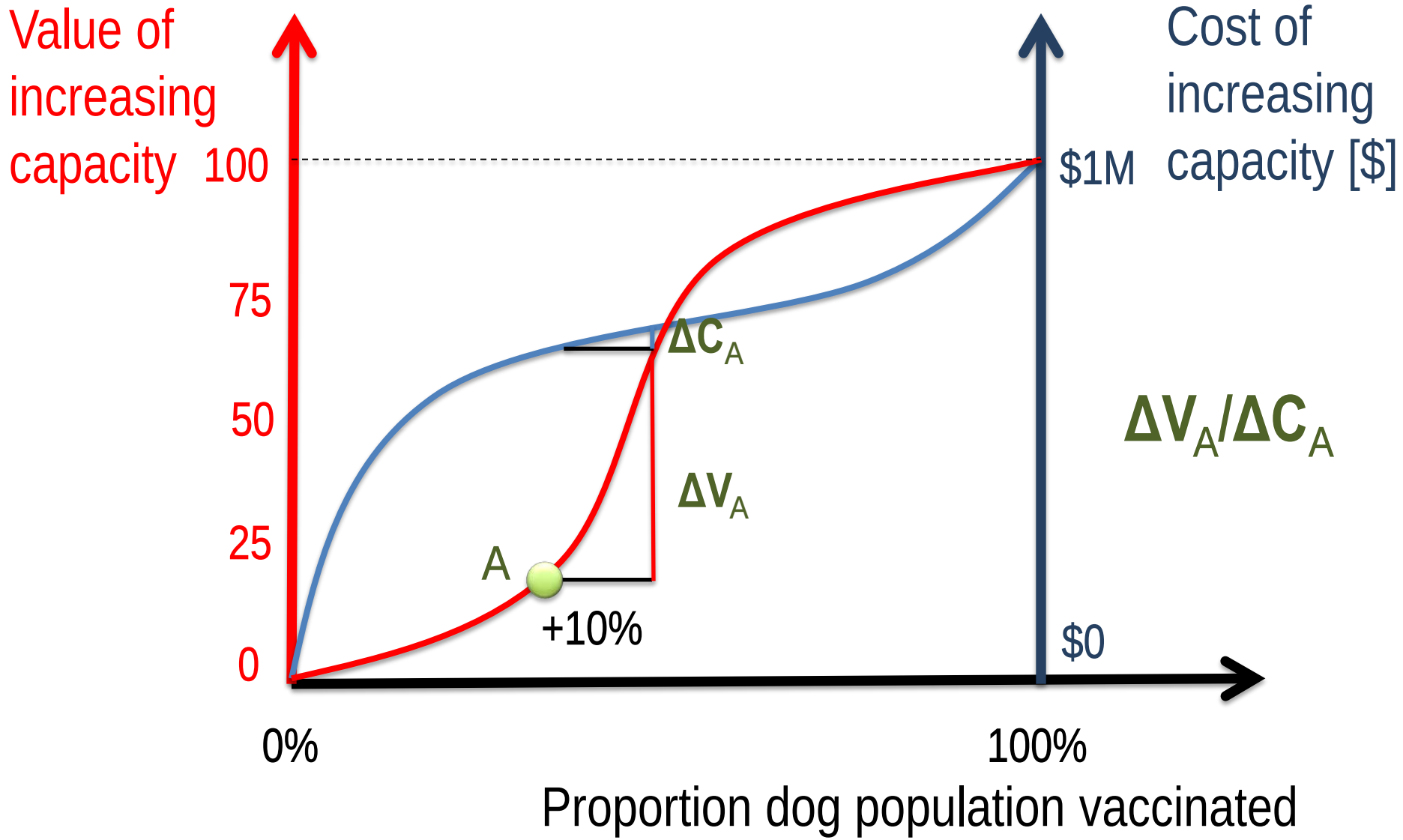



Value of increasing capacity
100
75
50
25
0
Cost of increasing capacity [$]
$1M
$0
0%
100%
Proportion of dog population vaccinated

Prioritising Capacity Building



Prioritising Capacity Building



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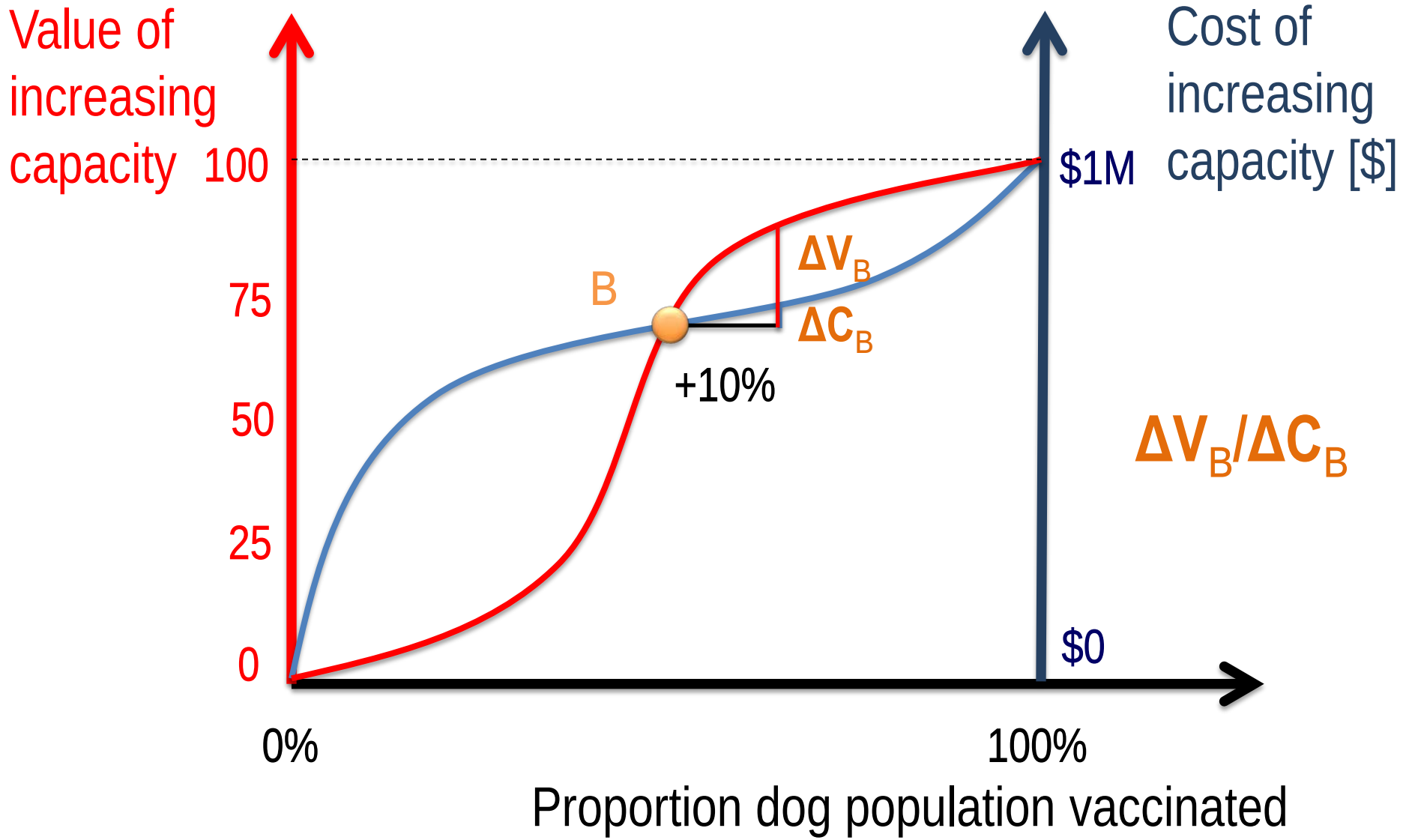
Prioritising Capacity Building



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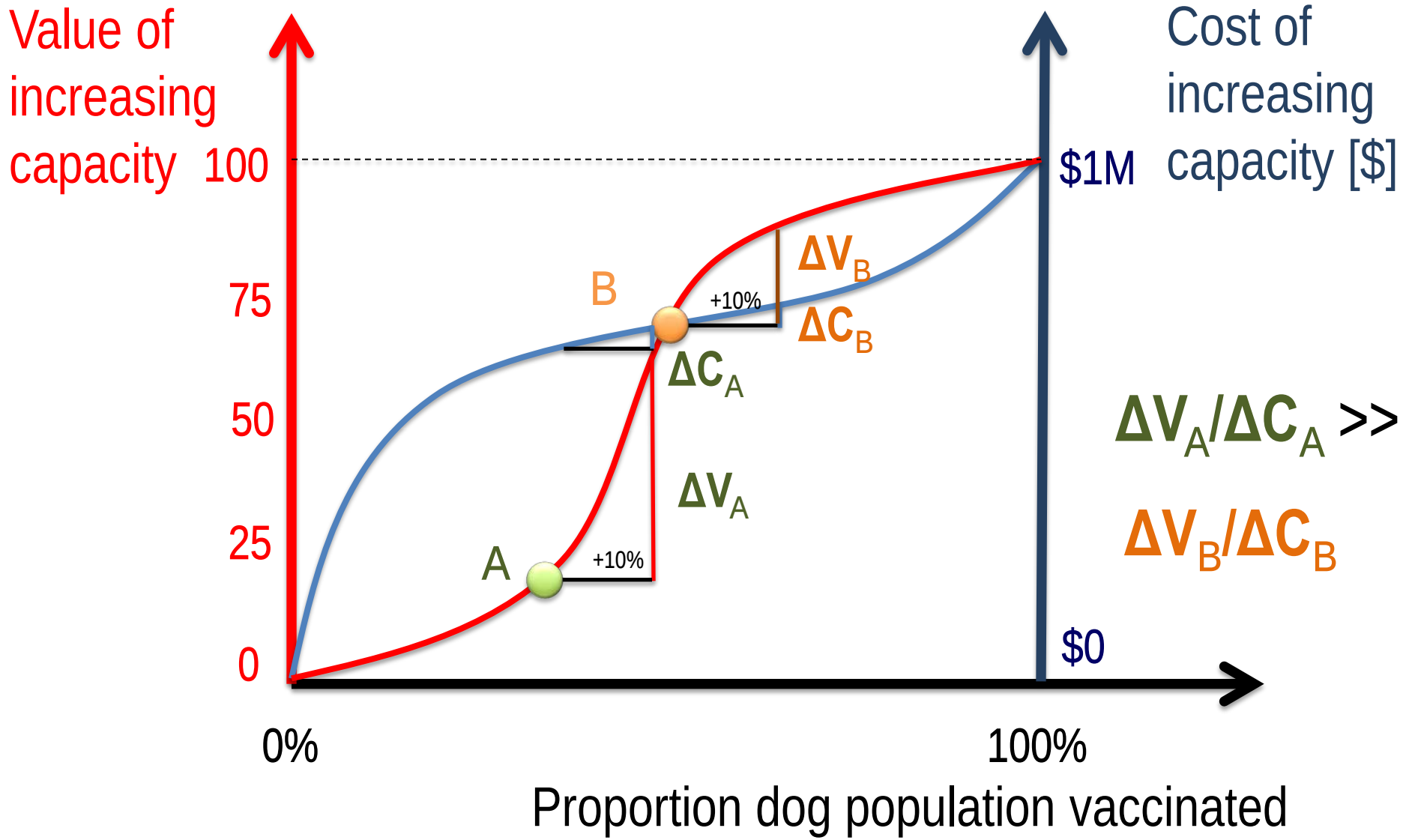
Prioritising Capacity Building



Measuring Intangible Capacities

Value Function - Surveillance Attribute: Quality of the Surveillance System	Value Score
An optimal surveillance system	?
An adequate surveillance system with some minor deficiencies	?
An incipient surveillance system with some major deficiencies	?
No surveillance system	?

Measuring Intangible Capacities

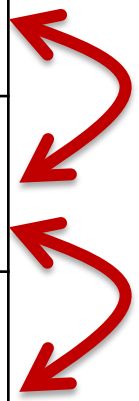
Value Function - Surveillance Attribute: Quality of the Surveillance System	Value Score
An optimal surveillance system	
An adequate surveillance system with some minor deficiencies	
An incipient surveillance system with some major deficiencies	
No surveillance system	

Measuring Intangible Capacities

Value Function - Surveillance Attribute: Quality of the Surveillance System	Value Score
An optimal surveillance system	100
An adequate surveillance system with some minor deficiencies	60
An incipient surveillance system with some major deficiencies	40
No surveillance system	0

Measuring Intangible Capacities

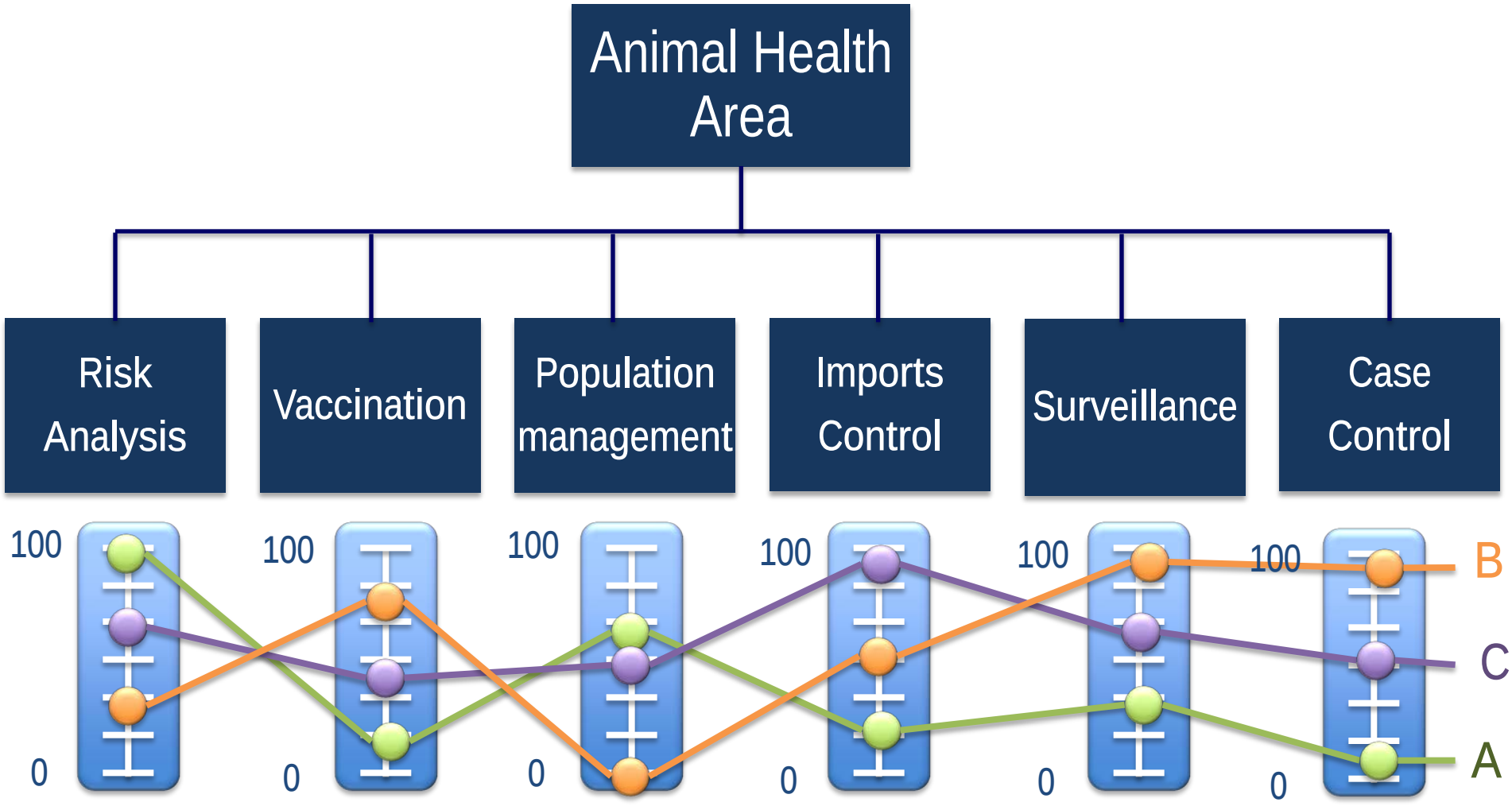
Value Function - Surveillance Attribute: Quality of the Surveillance System	Vaue Score
An optimal surveillance system	100
An adequate surveillance system with some minor deficiencies	60
An incipient surveillance system with some major deficiencies	40
No surveillance system	0



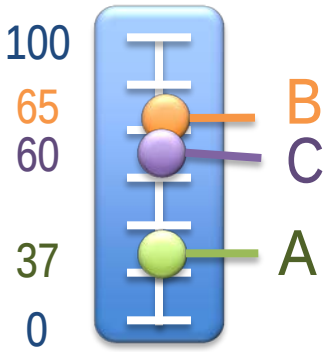
Measuring Intangible Capacities

	Value Function - Surveillance Attribute: Quality of the Surveillance System	Score
System B	An optimal surveillance system	100
System C	An adequate surveillance system with some minor deficiencies	60
System A	An incipient surveillance system with some major deficiencies	40
	No surveillance system	0

Assessing Capacities Profiles

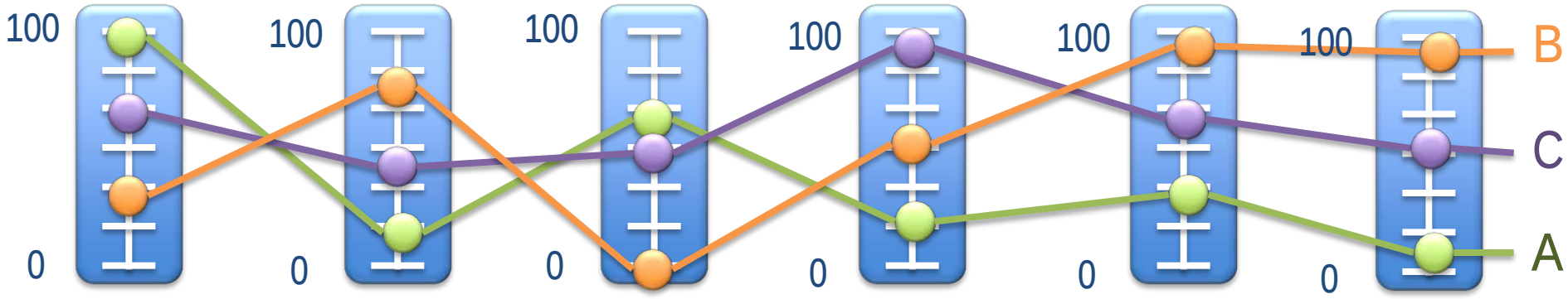


Evaluating Overall Capacity

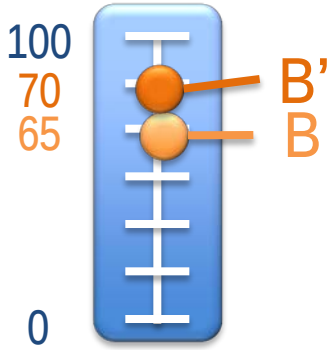


Animal Health Area

Risk Analysis	Vaccination	Population management	Imports Control	Surveillance	Case Control
W = 15%	W = 20%	W = 15%	W = 15%	W = 20%	W = 15%



Monitoring Capacity Evolution



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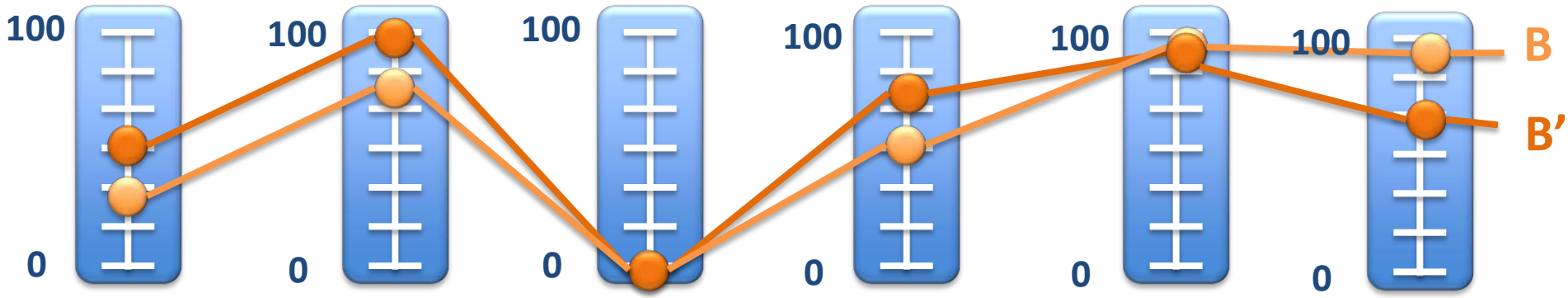

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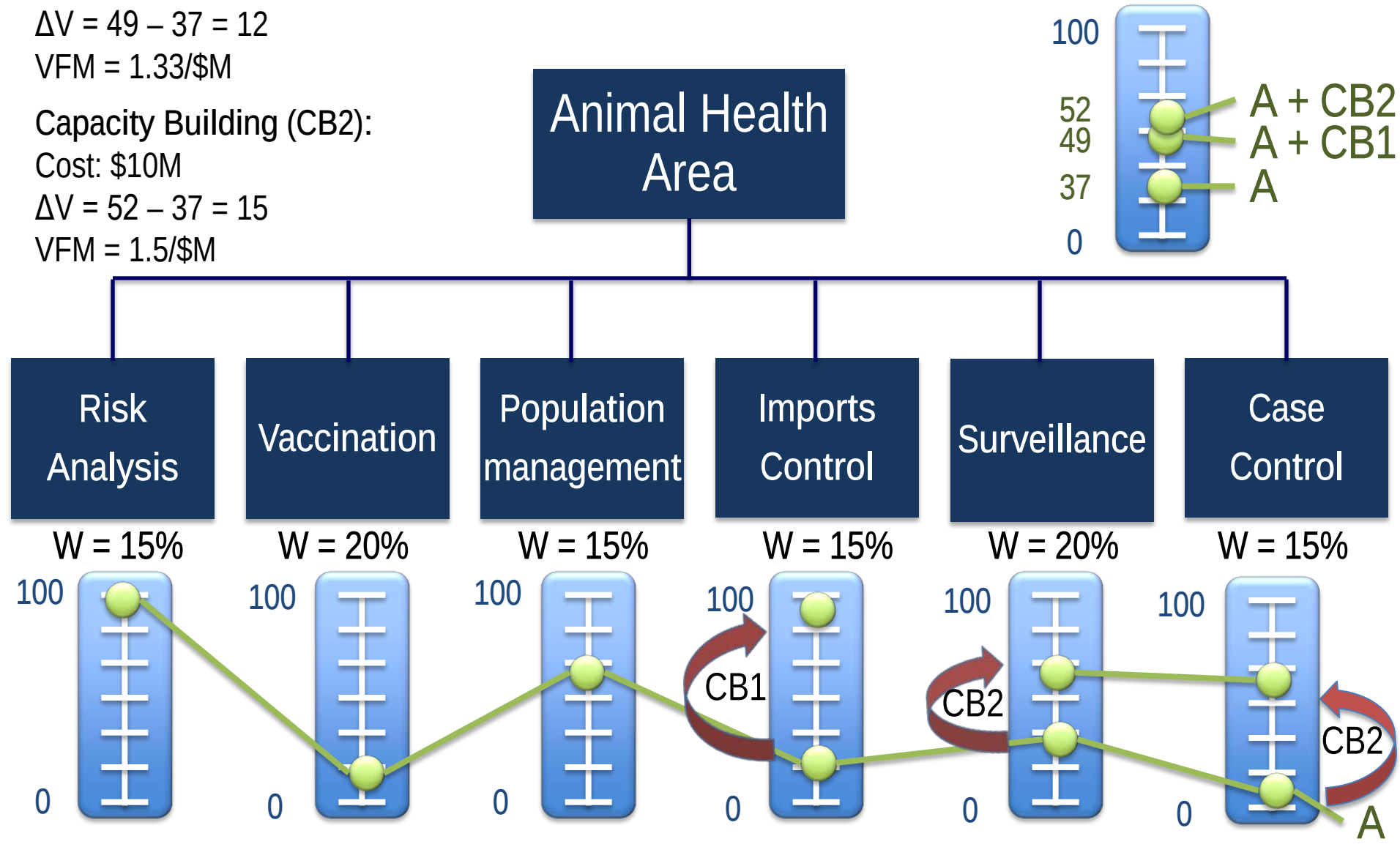
Allocating Resources Efficiently

Capacity Building (CB1):
Cost: $9M
ΔV = 49 – 37 = 12
VFM = 1.33/$M

Capacity Building (CB2):
Cost: $10M
ΔV = 52 – 37 = 15
VFM = 1.5/$M



Employing the Decision Model

- Step 1: Evaluate the current capacities of your system.
- Step 2: Devise actions to close capacity gaps, improve coordination, and assess potential capacity improvements.
- Step 3: Determine the costs of these actions.
- Step 4: Identify the best portfolio of actions, which maximises value for money, given the budget available

Next Steps

- Refinement of attributes to measure capacities.
- Elicitation of value functions and weights from experts and policy makers in the region.
- Development of the decision support tool.
- Trial in a small number of countries in the region.
- Further funding: extending the use to other regions with an online decision support system (DSS).

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Thank you for your attention!

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