

- 1) Ethiopia is currently considering putting in place a disease free zone where animals can be held and observed for six weeks. Animals held for this length of time in the zone are eligible to be exported to Saudi Arabia. If an animal does not go through this process, it is not allowed to be exported internationally and is sold domestically. The value of an animal in Saudi Arabia is twice what it is worth in Ethiopian markets – that is a bull that sells for \$150 USD in Ethiopia is worth \$300 if exported to Saudi Arabia. It will cost us 20 million USD in  $t=0$  to build the disease free zone. During year zero, animals will be marketed domestically so domestic revenue and costs will apply. In years  $t=1$ ,  $t=2$ , and  $t=3$  it will cost us 5 million per year to provide veterinary goods and services to establish the disease free zone and 10 million per year to buy feed for animals held in the zone and animals will be marketed in Saudi Arabia. Production for the domestic market currently has 2 million per year spent on veterinary goods and the implicit cost of feeds consumed by domestically marketed animals is estimated to be 5 million per year. Revenue per year of selling animals domestically is 15 million. The same animals sold in Saudi Arabia are worth 30 million. The discount rate is 10%.

What is the net present value of producing for the domestic market?

	Benefits	Costs
T=0		
T=1		
T=2		
T=3		
NPV		

What is the net present value of building the disease free zone and selling in Saudi Arabia?

	Benefits	Costs
T=0		
T=1		
T=2		
T=3		
NPV		

Which is preferable in NPV terms?

Discuss how this demonstrates the difference between “before and after” and “with and without” in benefit cost analysis.





