

## DECISION ANALYSIS

# Erewhon Model, Part 2

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Exercise: Saving the Endangered Species of Erewhon or Plants at Last

We're now going to use the graphs that we've created to do a little sensitivity analysis.

And just to refresh your memory. We have - each of these lines represents some kind of constraint. And we already identified this area here, this space represented acceptable solutions. So any combination of highland and valley hectares within this space are acceptable, they meet all of the constraints that you have identified.

Now one thing Tony mentioned, is that we can use this graph to explore the sensitivity of how changing any of our constraints might affect the solution space.

In one scenario we said, well what happens if people let the social upheaval index change from 400 to 500. And we can do that easily now by just changing the value in cell J3 and then watching the line move in response.

Now in this case, I'm going to go ahead and change it back to 400. And let's just keep our eye on acceptable solution space. What we can see is that changing that index and having a big discussion about whether the social upheaval index should be 400 or 500 has no bearing on the solution. And so people can spend hours and hours discussing this problem. But when you put it in a framework like this, it allows you to see the big picture that you can realize what constraints, in fact, will change your solution.

Let's look at the second example that Tony mentioned. He said there was a group of people who might fundraise and move the number of pickles up by 10,000. So that would make our total budget then 34,000. Let's watch what happens to this orange budget line as a result. Did our solutions space change?

Let me press the undo button and we can watch it again. Here is our solutions space. First constrained by the budget. Now if we move our pickle budget up, now our solutions space has

been broadened considerably. And we have some new constraints that enter an form and shape the solutions space.

The first one, the highland hectares has become a new constraint. That is forming and shaping the area of acceptable solutions. The budget no longer is of consideration, but the social upheaval is.

Having this kind of framework, once again, is important because it allows you to change these inputs and really access which of these kinds of constraints are actually shaping the solutions space of possible purchases.

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