



United States Department of Agriculture

Model “Success” Depends on the Decision-Making Situation

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Thought process

- I've participated in 10+ decision-making activities involving models
- Seems like a lot, perhaps more than most?
- What might I conclude with regard to...?
 - Model success (i.e., supporting the decision)
 - Situational context (model role/complexity of problem)

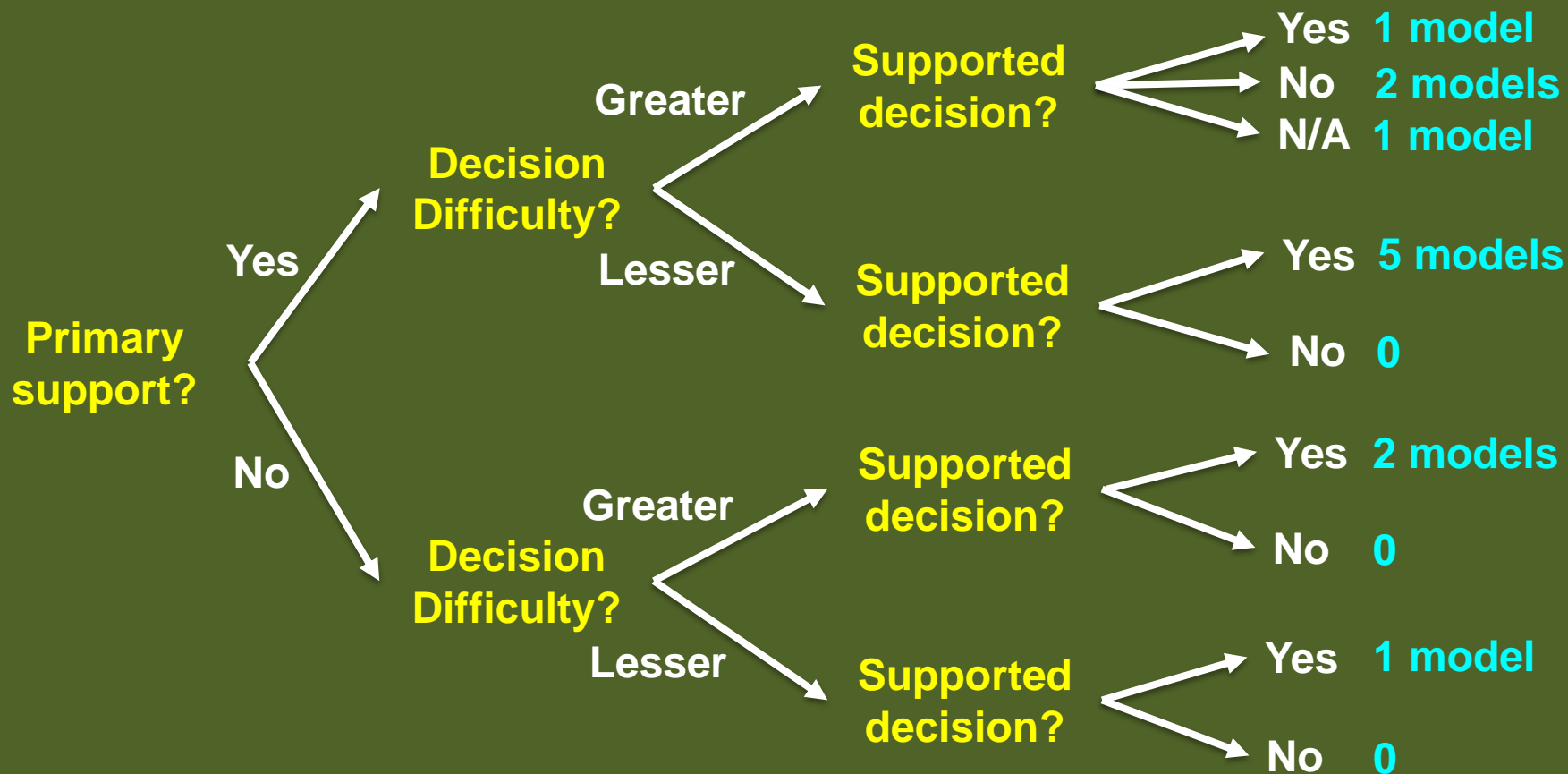
Risk Model/Decision examples

1. Baled municipal solid waste
2. Codling moth in apples exported to Taiwan
3. Diaspididae spp. risk on consumption items
4. Direct flights from Mexico to Fresno
5. Establishment risk of *Copitarsia* spp.
6. Fruit fly systems approach for CA cherries
7. Fruit fly systems approach for TX citrus
8. Fruit transport for irradiation in-country #1 (one-off)
9. Fruit transport for irradiation in-country #2 (program)
10. Hitchhiking insects on Miami cargo aircraft
11. Pine shoot beetle spread
12. Potato exports to Mexico

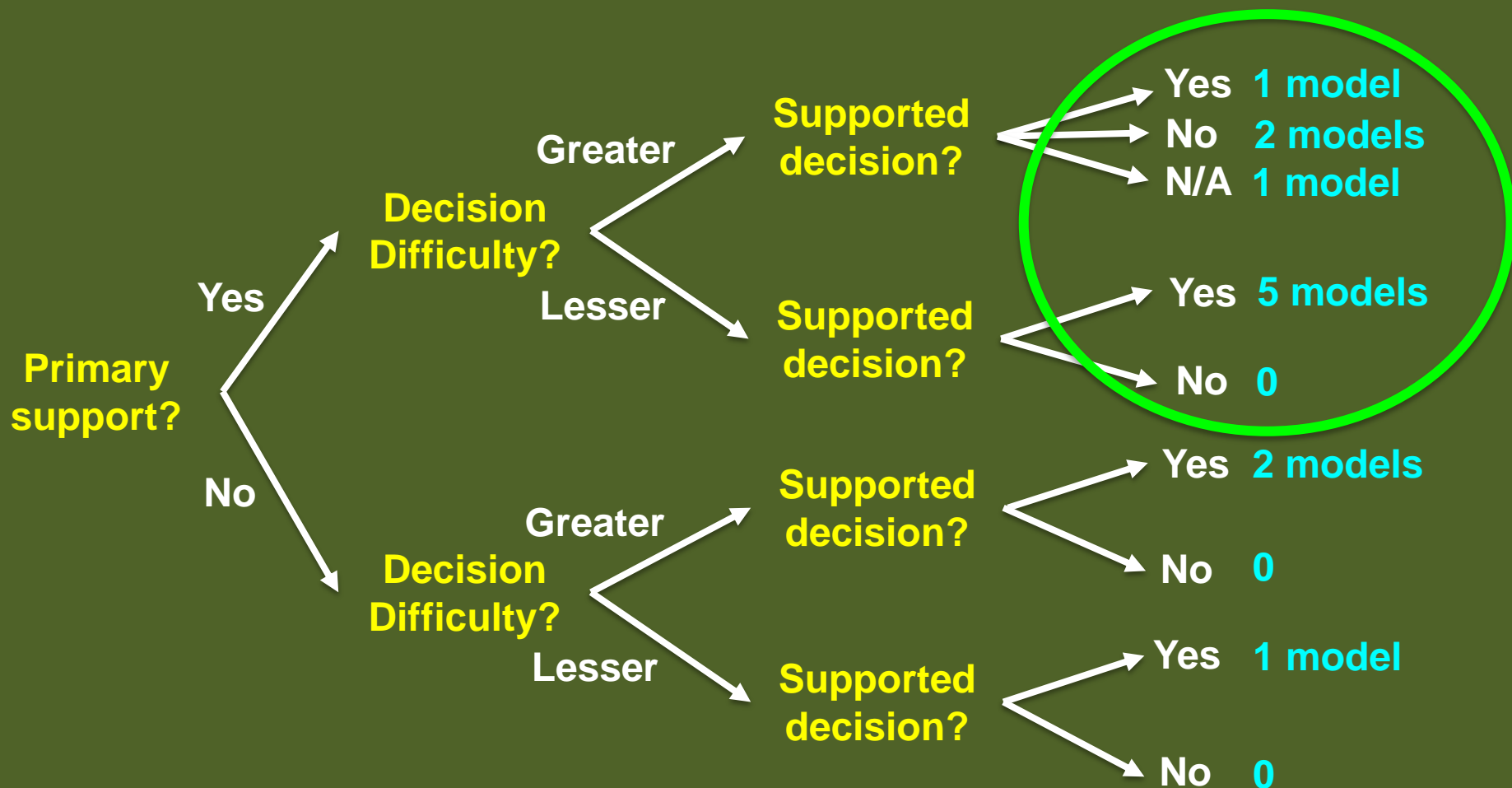
Factors

- Primary support for the decision?
 - Sometimes qualitative assessments existed
 - Model could be sole or secondary support
- Decision relatively easy or more difficult?
 - Straightforward or more complex? (2+ options, 1+ groups involved, external parties)
 - Precedent exists or precedent-setting?
 - Favored by all parties or contentious?

Outcomes

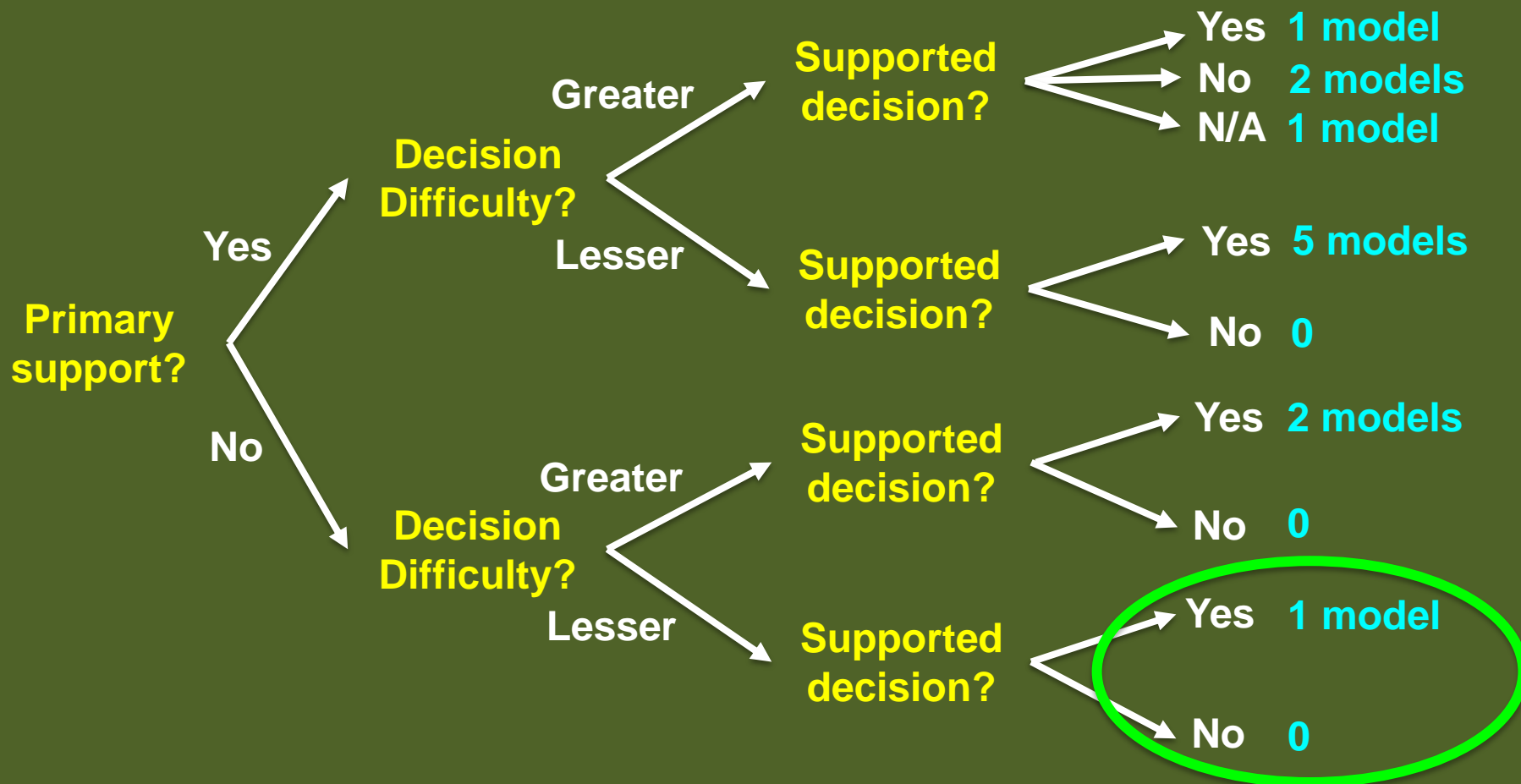


Discussion 1



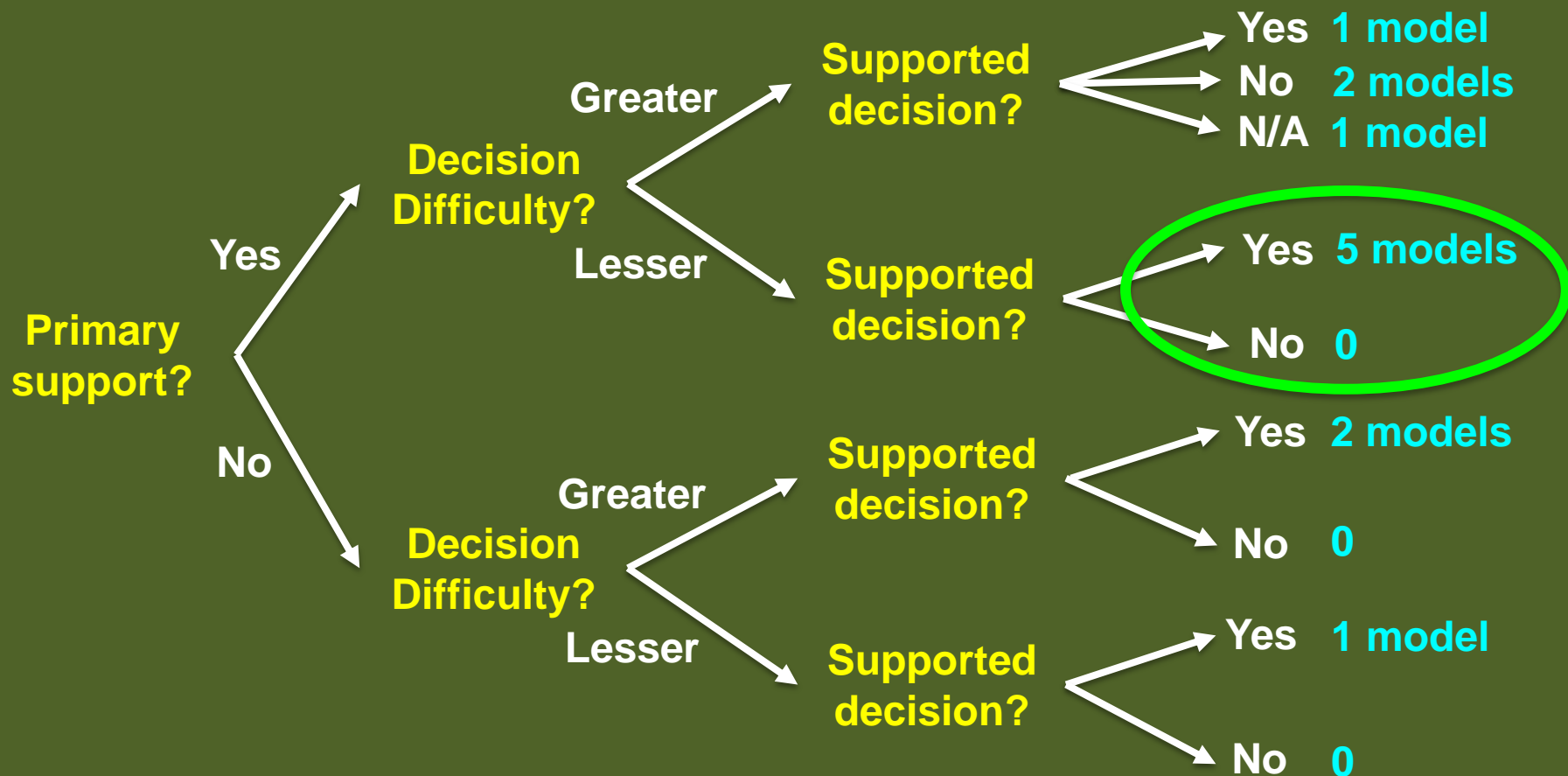
- Some problems *require* a model
- Less need for model if good qualitative assessment exists

Discussion 2



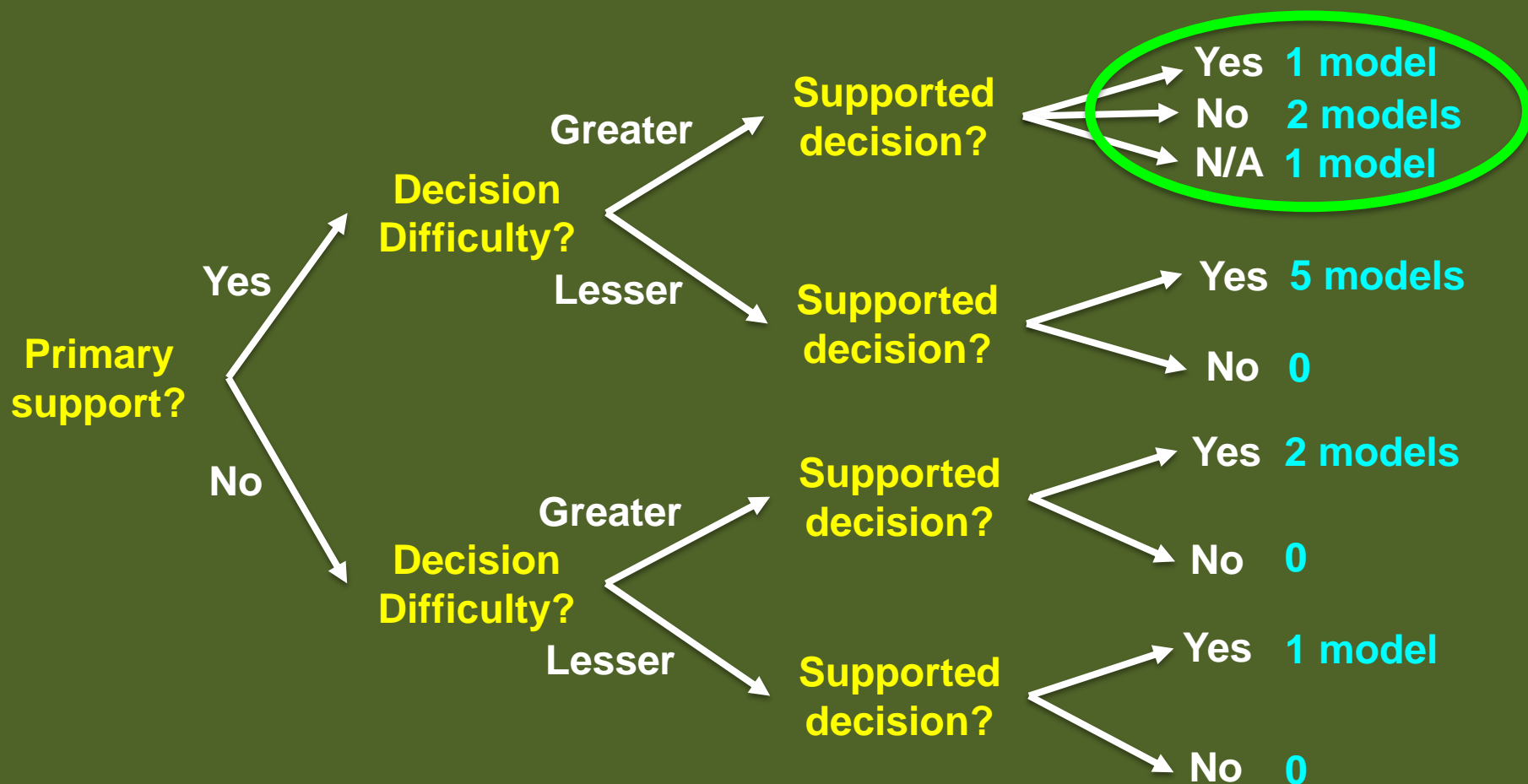
- Very little need for a secondary source of support for easier decisions

Discussion 3



- Very “successful” when primary support for easier decisions

Discussion 4



- Not very “successful” when primary support for more difficult decisions

Conclusions (1/2)

- Models were often “successful”:
 - Primary support for easier decisions
 - Secondary support (assuming no disagreement)
- Models were less “successful”:
 - Primary support for more difficult decisions
 - Particularly problematic since some problems can *only* be addressed quantitatively

Conclusions (2/2)

- May not be models at fault though
 - Some decisions are political
 - Managers may find it harder to
 - Set new precedents
 - Decide between competing parties/options
- Suggestion: Assess the situational context and adjust expectations for the outcome
- Curious about others' experiences