

**The requirements of research vs. policy models
and recommendations for the application of models
to decision support
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The requirements of a DSS

SIMPLIFY- to distill complex but good data and science into usable models or simple rules.

INTEGRATE - to integrate research results from very different disciplines in a common and formal language (mathematics).

COMMUNICATE - to hide complex science from the end user and link scientists with policy advisors.

FLEXIBLE - to be flexible in the analysis of *scenarios* for change and *policy options*.

INTERACTIVE - to be interactive, fast and easy to understand.

PROVIDE - to provide the end user with the information they want at the scale they like when they like

The requirements of research vs. policy models

➔ **Research models**

- ➔ accurate representation of processes
- ➔ complexity and resolution reflect processes
- ➔ accurate representation of spatial variability
- ➔ scientifically innovative
- ➔ raises more questions than answers
- ➔ interesting and worthwhile in its own right
- ➔ process centred
- ➔ numbers validatable
- ➔ as complex as necessary

➔ **INTERFACING ISSUES**

- ➔ model centred

Policy models

- adequate representation of processes
- complexity and resolution reflect data
- adequate representation (existing data)
- scientifically proven
- provides simple(?), definitive(?) answers
- interesting only through its output
- input/output centred
- outcomes validatable
- as simple as possible

- interface centred

SIMPLIFICATION

➡ Complex process models are not necessarily better than simple process models

➡ It is better to have a parameterisable, validatable simple model than an unparameterisable non-validatable complex one

➡ Data for parameterisation, calibration and validation are time consuming and expensive to obtain and are lacking throughout much of Latin America (and other parts of the globe).

‘Researchers have already cast much darkness on this subject and if they continue their investigations we shall soon know nothing at all’ Mark Twain