

**UTILIZING COARSE RESOLUTION
SCENARIOS AS A POINT OF REFERENCE
IN DEVELOPING BACKGROUND
SCENARIOS FOR IAV –**


LINKING SCENARIOS ACROSS SCALES?

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MAIN QUESTIONS

- How to use global/higher scale scenarios and their results to inform scenario development, IAV research and decision making processes at lower scales?
- What do higher scale scenarios need to report on in order to be useful to lower scale IAV research and decision support?

 Answer depends on what the purpose of using the information produced at a higher scale is:

- scenario development
- decision support
- research



MULTISCALE VERSUS MULTIPLE-SCALE SCENARIOS

Multiscale scenarios =

various geographical scales and cross-scale interactions are explicitly addressed in a single scenario exercise

Multiple-scale scenarios =

scenarios are built at different scales independently and then linked with each other

WHAT TO USE DEPENDS ON THE PURPOSE OF THE SCENARIOS EXERCISE



POSSIBILITIES OF LINKING SCENARIOS ACROSS SCALES

Linking by scen. development **process**:

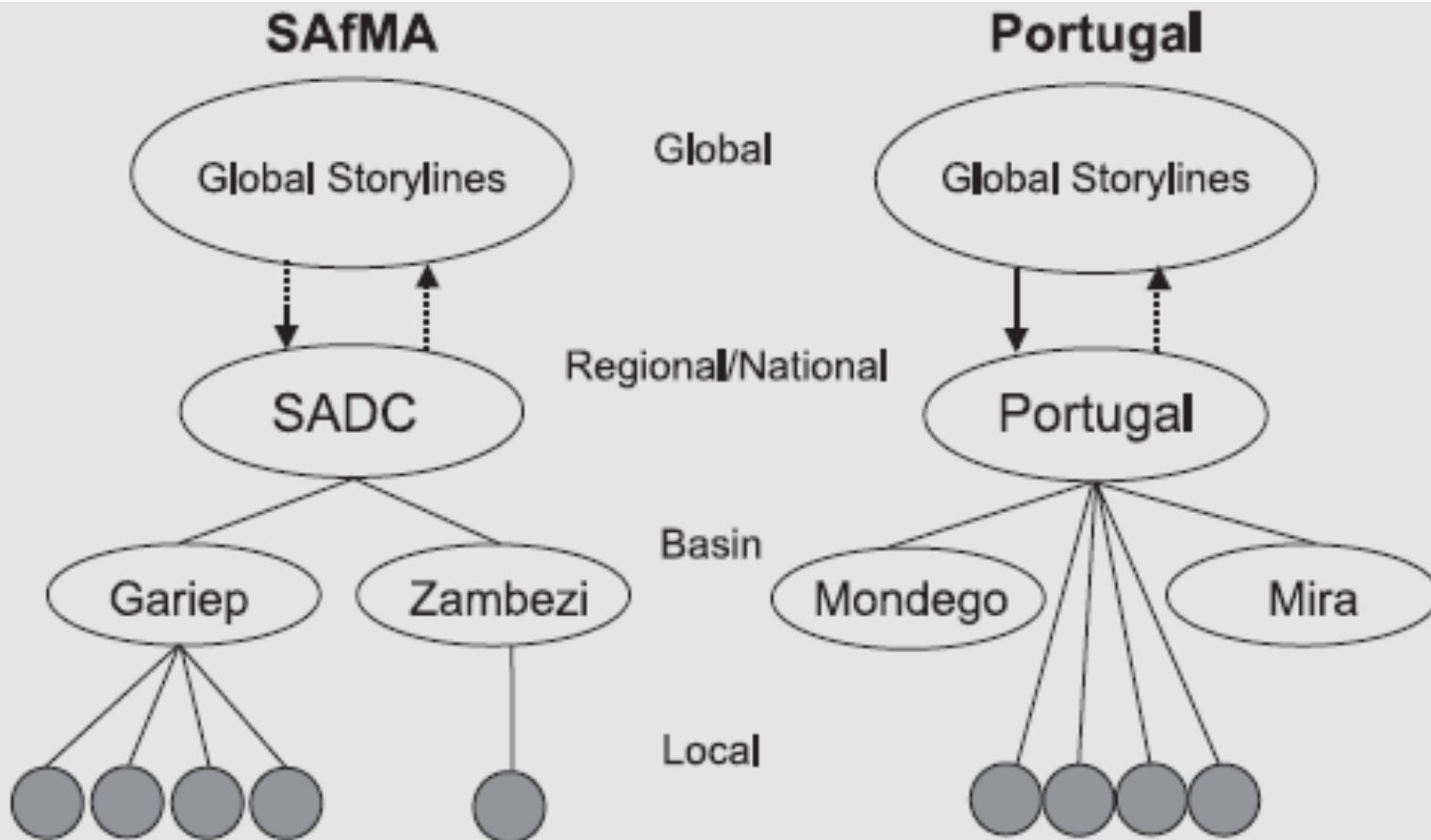
- **Joint** scenario development processes (i.e., scenarios developed at different geographical scales in a joint scenario exercise, with the same group of scenario developers);
- **Parallel** scenario development processes (i.e., different groups of scenario developers building scenarios at different scales but in more or less parallel processes in terms of focal question, conceptual frameworks, scenario development approach, or information sources);
- **Iterative** scenario development processes (i.e., developing draft scenarios at one scale that provide a starting point for scenario development at another scale, which then provides input and feedback for revision of scenarios at the original scale);
- **Consecutive** scenario development processes (i.e., a set of scenarios first developed and finalized at one geographical level and then scaled to another geographical level); and
- **Independent** scenario development processes (i.e., separate exercise carried out at two or more geographical scales – which may or may not inform each other in an informal manner).

Linking by **scenario elements**:

- The closest link between scenarios across scales is achieved when scenarios are **equivalent** or congruent across scales and fully share their scenario logics, key assumptions, and outcome.
- If scenarios are **consistent** across scale, they share main scenario assumptions, driving forces, and trends, but these may play out differently with regard to the scenario implications and outcomes.
- **Coherent** scenarios follow the same scenario logics across scales – in other words, the scenarios “match.” This does not preclude substantial differences with regard to how the scenarios play out in the selection of important driving forces, their major trends, and/or scenario outcomes.
- **Comparable** scenarios may be constructed to be largely independent at different scales, connected mainly by the issue they address and possibly addressing the same focal issue.
- Scenarios may be independent and thus **complementary** across scales – yet this does not preclude selected information from scenarios at one scale feeding into scenarios at another

| | Single scale | Multiscale | |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Loosely linked | Tightly coupled (cross-scale) |
| Number of focal scales | 1 | At least 2 | At least 2 |
| Consistency of storylines across scales | Not relevant | Storylines usually differ and are inconsistent across scales | Storylines have a high level of consistency across scales, and there is an explicit focus on downscaling and/or upscaling. |
| Consideration of drivers at other scales | Exogenous drivers from other scales included to the extent that they are relevant to the focal scale | Exogenous drivers and constraints from higher and lower scales are included in a similar way to single-scale scenarios. The set of scenarios is usually constructed within a common broad conceptual framework and will incorporate similar types of drivers at different scales. | Exogenous drivers and constraints from higher and lower scales are included via downscaling and upscaling procedures. |
| Consideration of feedbacks between scales | Not considered | May or may not be considered | Explicit linkages between scales and incorporation of feedbacks |
| Main advantages | Simple; no distraction by concerns at other scales | Allows stakeholders at each scale to frame the issues that are important to them from their specific perspective | Allows for consideration of feedbacks between scales and evaluation of how an issue plays out at different scales |
| Main disadvantages | Important feedbacks between scales may be missed or important externalities at other scales may be overlooked. | Scenario outcomes at different scales or different places are not directly comparable. | Very costly; may lose credibility because stakeholders at, especially, lower scales may not have much latitude to define the issues to be considered |
| Example | Mont Fleur Scenarios (Kahane 1992) | Southern African MA scenarios (Biggs et al. 2004) | MedAction scenarios (Kok et al. 2006a,b) |

EXAMPLES OF MULTI-SCALE OR MULTIPLE SCALE SCENARIOS



SOME ADVANTAGES AND DISADVANTAGES OF LINKING SCENARIOS ACROSS SCALES

○ Advantages:

- Ensuring consistency of methods and results across scales
- Enabling analysis of feedbacks across scales
- Enhancing the potential communication between stakeholders across scales
- Broadening of ideas, perspectives and processes

○ Disadvantages:

- Losing relevance of scenarios at specific scales
- Arbitrary 'over-consistency' of scenarios
- Difficult logistical process that requires careful management
- Time and resource consuming depending on linking method



REPORTING FROM HIGHER SCALE SCENARIOS TO INFORM LOWER SCALES

- Depends on purpose of work at lower scale (scenario development, decision support, outreach, etc.)
 - Esp. important here is degree of stakeholder involvement >>> credibility and relevance of scenarios
- Important for lower scales to know:
 - Information on drivers that lower scale decision making will have to adapt to (no possibility to influence), e.g. global trade policy decisions, global CC negotiations
 - Possible scenarios logic used in higher scales to decide on ‘down scaling’
 - Use of higher scale scenarios as ‘wind tunnels’ to test assumptions and policy options for lower scale work

