

Annex 1. Questionnaire on the 'wickedness' of Nexus problems

This questionnaire aims to define the 'wickedness' of Nexus problems. Please click 'Click here to enter text' in order to answer the questions. You can answer the questions on your own or in collaboration with your colleagues. Thank you for your collaboration!

General information

Name of the interviewee: Click here to enter text.

Name of the institution: Click here to enter text.

Address: Click here to enter text.

Email: Click here to enter text.

Phone number: Click here to enter text.

TOP 1 – General information on problems

1.1 Please briefly describe the nexus problem you are dealing with (e.g. an integrated management of soil and water resources).

[Click here to enter text.](#)

TOP 2 – Goal conflicts

2.1 Are there any conflicting interests related to the problem (e.g. conflicts related to values, methods, costs)? Please briefly describe potential conflicts.

[Click here to enter text.](#)

2.2 . If there are conflicting interests, is there a certain prioritization for specific interests on the side of one or all actors concerned? Please describe potential prioritizations.

[Click here to enter text.](#)

2.3 Is there a need for tough negotiations or coordination processes to address problems? Please describe the respective needs to address problems.

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TOP 3 – System complexity

3.1 What types of factors influence the solution to problems (e.g. different types of matters, solution options, natural locational factors, non-natural locational factors, actors and their interests, governance strategies and conditions).

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3.2 Is the number of factors that influence problems manageable for decision-makers or are these factors difficult to be managed?

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3.3 Are these factors dynamically evolving (linearly/ exponentially) or are they rather stable? Are there any possible ad hoc changes relevant for the solution to problems?

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3.4 Can decisions related to the problem be made based on the status quo or do future developments have to be taken into account (e.g. climate change, demographic changes)? What types of developments are crucial for decision-making?

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3.5 Are the factors interconnected so that changes related to one factor influence changes of other factors in the system? Please describe strong/weak relations between factors.

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3.6 Is there a possibility for delayed negative or positive side effects of actions? If this is the case, please describe the nature of these possible side effects.

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3.7 Is there a need for simple or complex models and/ or decision-support tools to understand system complexity, or can decisions be made based on think experiments?

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TOP 4 – Informational uncertainty

4.1 Is there enough data/ information for decision-making or is there a need to gather additional data and/or information?

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4.2 If additional data and/or information has to be gathered, what types of data and/or information is lacking, related to the types of factors mentioned above?

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4.3 If additional information has to be gathered, is it possible to gather this information or are there any hindrances (e.g. lacking methods and skills, or financial restrictions). Please describe potential hindrances.

[Click here to enter text.](#)

TOP 5 – Additional information

5.1 Is there a certain dimension of the problem (goal conflicts/ system complexity/ informational uncertainty) that makes the problem particularly difficult to address?

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5.2 Is there a hierarchy in the 'wickedness' of dimensions? If this is the case, please describe the hierarchy.

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5.3 What kind of factors, do, in your opinion, make the problem particularly difficult to address (e.g. governance context, lacking knowledge on technical solutions, etc.)?

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5.4 Is there any additional information related to the nature of the problem that would like to share?

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Annex 2. Analyzing the degree of wickedness

Wickedness	Question (shortened)	Type of answer	Indicator for degree of wickedness		
			Low	Middle	High
Goal conflicts	2.1 Are there any conflicting interests related to the problem?	No conflicting interests	x		
		Conflicting interests		x	x
	2.2. If there are conflicting interests, is there a certain prioritization for specific interests?	No prioritization			x
		Prioritization		x	
	2.3 Is there a need for tough negotiations or coordination processes to address problems?	No need for negotiation		x	
		Need for negotiation			x
System complexity	3.1 What types of factors influence the solution to problems?	Singularity of factors	x		
		Plurality of factors		x	x
	3.2 Is the number of factors that influence problems manageable for decision-makers?	Manageable	x	x	
		Not manageable			x
	3.3 Are these factors dynamically evolving (linearly/ exponentially)?	Stable	x		
		Dynamics (linear)		x	
		Dynamics (exponential)			x
	3.4 Can decisions related to the problem be made based on the status quo?	Status quo decision	x		
		No status quo decision		x	x
	3.5 Are the factors interconnected so that changes related to one factor influence changes of other factors in the system?	No connections	x		
		Connections (weak)		x	
		Connection (strong)			x
	3.6 Is there a possibility for delayed negative or positive side effects of actions?	No side effects	x		
		Positive side effects		x	
		Negative side effects			x
Uncertainty	3.7 Is there a need for simple or complex models to understand system complexity?	No modelling	x		
		Simple model		x	
		Complex model			x
	4.1 Is there enough data/ information for decision-making?	No additional data	x		
		Need for additional data		x	x
	4.2 If additional data and/or information has to be gathered, what is lacking?	Single type of data		x	
		Different type of data			x
	4.3 If additional data/ information has to be gathered, is it possible?	Possibility		x	
		No possibility			x