

Appendix

Table A1.1. Review protocol with questions answered for each reviewed article.

Title
Author
Year
Who Participates? (who?)
Who Participates? (why?)
In what? (What are they contributing to/Tasks?)
In what? (what type of futures are developed?)
Who did the analysis?
Framework used?
For whose benefit?
Typology (Pretty)
Typology (White)
Context (Country)
Context (Locality/spatial scale)
Context (Theme)
Context (Time horizon)
Scenario type
Context (Scenario names)
Context (Aspects of the future considered)
Rationale
Conclusions
Outcomes?
Evaluation (what happened?)

Table A1.2. Pretty's typology in the context of participatory future scenario development. The columns account for different steps of the research process, and distinguish stakeholders as implementors (I) and receivers (R) according to White's typology.

Typology	Initiative leader		Consultation phase	Decision taking		Analysis		Scenario Development		Feedback/evaluation by participants	Ownership of action plan/other output	
	I	R		I	R	I	R	I	R		I	R
Manipulative participation	1	0	No	1	0	1	0	1	0	No	1	0
Passive participation	1	0	Yes	1	0	1	0	1	0	No	1	0
Participation by consultation	1	0	Yes	1	0	1	0	1	0	Yes/No	1	0
Participation for material incentives	1	0	Yes	1	0	1	0	1	0	Yes/No	1	0
Functional participation	1	0	Yes	1	0	1	1	1	1	Yes/No	1	0
Interactive participation	1	0	Yes	1	1	1	1	1	1	Yes	1	1
Self-mobilization	0	1	Yes	0	1	0	1	0	1	Yes	0	1

Table A1.3 Overview of the participatory scenario development set-up, in terms of number and types of participants, their role in the scenario development, and the material outcome of the research process.

Author & Year	Total number of participants	Participants per workshop	Stakeholders	Workshop stakeholder set-up	Who developed the scenarios?	Outcome(s)
Pfeifer et al. 2020	124	29-33	Farmers, traders, local leaders and administrators, experts, researchers, high-level stakeholders (1 st case). Livestock producers, butchers, dairy processor, provincial and regional government representatives, NGOs, farmers, local administration and experts (2 nd case)	Mixed	The participants	Sustainable livestock intensification pathways
Newman et al. 2020	67	12-44	Community members (gender and age balanced). Community representatives, members from agricultural-, forestry-, environment-, water-, energy-, and tourism sectors. Two NGOs.	First community based, then multi-stakeholder	The participants	Sustainable land use pathways
Jiren et al. 2020	35	35	'Local people' representatives of the three municipalities, district and zonal levels; Bureau of agriculture and natural resources at or across administrative levels; governmental organizations, NGOs, CSOs, other sectors including food security and biodiversity. Cross-sectoral organizations: groups of women, men, community leaders, religious leaders, community cooperatives, health professionals, elementary school teachers.	Mix (separate and diverse at first, then joint)	The researchers developed the scenarios based on initial input from participants, then the scenarios were evaluated by all stakeholders, and feedback was incorporated to the scenarios.	Visualizations
Capitani et al. 2019	62	30-32	Farmers, Government officers, NGO delegates, members of associations for women and disabled people, academics, local officers	Mix	Local stakeholders develop qualitative and semi-quantitative scenarios guided by a team including facilitators and modellers. Modellers then translate this information into quantitative and spatially explicit outputs. The final outputs were created with stakeholders' validation of preliminary results.	Maps
Faysse et al. 2018	N/A (20-25 cooperative members,	N/A	Small- and large-scale farmers, representatives from the Department of Agriculture and marine	Mix (separate stakeholder groups at first, then	Participants together with researchers	Action plan

	otherwise unspecified)		fisheries, representatives from catchment agencies.	joint workshop)		
Kebede et al. 2018 (details in Nicholls et al 2017)	N/A (only specified that at least 10 experts were interviewed)	N/A	Experts (technical country experts) and stakeholders (policy/decision-makers) at different stages.	Expert- led, with stakeholders providing evaluations and feedback.	Stage 1: Narratives of adaptation policy trajectories (Expert-led), Stage 2: Evaluate and validate (Engaging stakeholders), Stage 3: Revise and remodel (Expert-led) Stage 4: Refine and finalise (Re-engage stakeholders)	Graphs
Muhati et al. 2018	142	26	Initial interviews and questionnaires: key agencies in the area (Forest service, Wildlife service, Agricultural and livestock research organization, county government, water resources authority, national drought management authority, national environmental management authority, food for the hungry, a representative of conservation NGOs, conservancy managers. Focus group discussions with local population based on their utilisation of the forest. Questionnaires to focus group participants (firewood collectors, farmers, honey collectors, livestock herders, water users, herbalists).	40 from the user groups, and 12 from management institutions.	The participants	4 plausible scenarios, action plan.
Olabisi et al. 2018	50	30	Extension workers, academics, representatives of farmer organizations, representatives from development and agricultural non-profit organizations, private sector input suppliers, local elected officials, traditional leaders, and government scientists.	Workshop participants were intended to represent a cross-section of those involved with the agricultural sector	Participants developed scenarios, researchers coded the scenarios for analysis.	Narratives
Zorrilla-Miras et al. 2018	56	18 at national level, 14 at provincial level, 24 at community level	National institutions, provincial and district level stakeholders, community members (diversity in gender, age, and main income activity)	Mix but divided: workshops divided across three administrative levels (national, district, community). The different groups never had a joint workshop.	The researchers, narratives are based on initial input from workshop participants. Then evaluated by the district- and national level stakeholders.	Maps, graphs
Pereira et al. 2018	23 (+7 facilitators)	23 (+7)	23 key thinkers: artists, scientists, change makers ('seed' representatives, practitioners involved in NGOs), and 7 facilitators	Mix of very different stakeholders	The participants developed the scenarios based on three different pre-identified 'seed-	Narratives

					projects', guided by instructions from facilitators	
Mshale et al. 2017	39	15-28	Government, private sector, NGOs, local communities	Mix and divided: Forestry and agricultural sectors + women only.	Participants developed four scenarios with guidance from a "Participatory Prospective Analysis" approach.	Narratives, Action plan
Ravikumar et al. 2017	N/A	N/A	At least one representative each from: Local communities, NGOs, private firms, and multiple government agencies from the local to the national level, including environment, forestry, mining, and agricultural offices	Mix, first homogenous groups, then together.	Researchers combine the factors in diverse ways to present four very general future states of the landscape that the participants need to flesh out and describe in detail.	Narratives, maps, carbon sequestration computations.
Olabisi et al. 2016	86	29	Members of local government; NGOs; farmer organizations; extension services and development projects; media; universities; CGIAR centers, and private sectors.	Mix for entire 3-day workshop	Participants, within the already determined theme determined by the researchers	Narratives
Capitani et al. 2016	240 (7 workshops with in total 180 participants) synthesis workshop with 60 participants	~ 25	Governmental institutions, private companies, research institutions, and civil society organizations (CSOs) representing land users, land managers (technical and political) at municipal, district, and regional level, with expertise in socioeconomic and development sectors. Local (village-level) communities were represented by farmers and livestock-keepers associations, community-based natural resources management and conservation organizations, and women's groups.	Mixed, first sub-national and then on national level. 1. Mixed groups across administrative units and sectors to generate consensus and harmonize visions within each subnational unit of analysis	Rankings and qualitative scenarios developed by mixed groups in sub-national workshops. Researchers modelled land use and land cover change based on narratives developed by participants. Participants from national and sub-national workshops then evaluated the models, maps, and assumptions, and researchers revised the model until consensus was reached.	Land use and land cover maps based on storylines.
Karlberg et al. 2015	30	30	Bureau of Agriculture, Bureau of Energy and Mines, Bureau of Environmental Protection, Land Administration and Use, the Abbay Basin Authority, the Ethiopian Electric Power Corporation, the Amhara Regional Agriculture Research Institute, Bahir Dar University, and the Organization for Rehabilitation and Development in Amhara.	Mixed sectors	Participants and researchers jointly developed the narratives, researchers did the analysis, participants evaluated the outcome	Graphs
Lemenih et al. 2014	70	34-36	Local communities, development agents, and experts of Office of Agriculture at district level	First key informant interviews, household	Participants together with researchers, researchers used	STELLA model output, predictions of tree population

				surveys, and focus group discussions, then one workshop per site to present findings and develop alternative scenarios together	the scenarios for modelling	and yields under four scenarios
Farwig et al. 2014	No workshop	No workshop	Local community, managing authorities, scientists	In depth knowledge and stakeholder consultation	The researchers	Forest management scenarios
Malinga et al. 2013	34	22 local users interviewed 12 stakeholders in workshop	Local governmental organizations, NGOs, local stakeholders (i.e. small-scale farmer, large-scale farmers, representatives of nature reserves). Workshop participants: researchers, policy makers, practitioners, resource managers, and resource users.	Interviews with local users, workshop with regional stakeholders	Stakeholders outlined scenarios during workshop. The researchers made the scenarios based on stakeholder outlines. Scenarios were evaluated by local and regional stakeholders, and refined.	Estimates of changes in ecosystem services based on three storylines
König et al. 2012	10	N/A	Local actors: stakeholders and experts from regional land administration and research institutions. Stakeholders invited for scenario impact assessment: regional authorities, administrators linked to policy guidelines or implementation (Regional Administration of Agricultural Development, South Development Office, Me'denine, Tunisian Union of Agriculture and Fishing, Ministry of Environment and Sustainable Development).	Consultation with local actors. A group of stakeholders invited to scenario assessment.	Researchers together with land administration experts	Scores (Assessment of soil and water conservation measures and its social, environmental and economic impacts)
Van der Voorn et al. 2012	N/A	N/A	N/A "A broad and diverse range of stakeholders"	The five steps consist of: 1) strategic problem orientation; 2) vision development; 3) backcasting analysis; 4) elaboration, assessment & agenda development; and 5) embedding of results.	Unclear – likely the researchers and participants in joint workshops	Narratives and goals
Sandker et al. 2011	100	No workshops	Village households, local experts	Interviews to fill data gaps for the model	The researchers	Model output (graph)
McCloskey et al. 2011	N/A	N/A	Diverse set of stakeholders with different land use interests (grazing, cultivation, urban development)	Four separate workshops for each livelihood strategy:	Unclear – likely the researchers and participants in joint workshops	Maps

				diversified agro-pastoralists, pastoralists with wildlife income, marginal pastoralists, wage-earning agro-pastoralists)		
Badjeck et al. 2011	28	28	17 experts from governments, non-governmental organizations (NGOs), research institutes and universities	Grouped by nationality, 2.5 days of workshops.	The participants, with guidance from research framework	Narratives and visualizations, research and development needs, recommendations