Appendix 1. Comparative interpretation of resource system (RS) and resource unit (RU) variables in the four cases.

In the table below we give for each concept or variable a general interpretation as well as case-specific ones. If several general interpretations of a single variable are perceivable, we represent these in separate rows of the table. Note that the table focuses on the interpretation of the variables and not on assigning values to them. Nevertheless, when values can be assigned, we add them in square brackets.

Variable	General interpretation	Acequia irrigated agricultural in New Mexico	Common property meadows in the Swiss Alps	Recreational fisheries in Germany	Energy Regions in Austria
Actor (A)	Those that benefit from or maintain the RS	Acequia farmers	Farmers, tourists	Anglers, angling club	Households and firms, grid operator
Technology used (A9)	Private technology involved in obtaining collective goods from the SES	Pumps, sprinklers (all technology used for getting the water to the plant)	Cow	Fishing gear, boats	Electrical connection
RS		Hydrological and irrigation system	Meadow	Waterbodies	Grid, power plants and storage infrastructure
Sector (RS1)		Agriculture	Agriculture	Recreational fishery	Energy
Clarity of system boundaries (RS2)	Natural system boundaries (before human intervention)	Catchment [low]	Vegetation zone suitable for farming [high]	Coast [low] and shore [high]	[high]
Size of resource system (RS3)		Catchment area	Area	Number or area of water bodies	Length of the grid, capacity of power plants and storage
Human constructed facilities (RS4)	The facilities put into place to provide, maintain or improve the stock of RU	Irrigation system	Fences, barns	Ponds, hatchery	The RS *is* the human constructed facility
Productivity of system (RS5)	The number of RU produced in a certain time period	m^3/time	Biomass/time	Biomass or number of fish/time	Power (electric energy/time)

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Equilibrium properties (RS6)		Description of the equilibrium dynamics of the system			Fish populations can collapse due to over-harvesting	Demand and supply of energy must be equal in each instance
Predictability of system dynamics (RS7)		Predictability of the number of RU available at a certain point in time	Straight-forward interpretation [medium]	Straight-forward interpretation [high]	Straight-forward interpretation [low]	Predictability of energy demand [high] and supply [low]
Storage characteristics (RS8)	**I**	The ability of the RS to store RU (excluding the HCF)	Retention potential of the hydrological system	Potential to store grass on the meadow itself [low; grass is either there or not]	[Low] however, fish often live several years and thus are somewhat "stored"	[low] Electric energy itself can not be stored, but must be converted into other energy forms, which is costly.
	II	The ability of the RS to store RU (including the HCF)	Retention potential of the combined hydrological and irrigation system	Potential to store grass as hey and to feed the hey to the cows later on [medium; higher than with interpretation 1]	[low] fish are very difficult to store because they need to be conserved which is often expensive	E.g. pumped-storage hydroelectricity [high]
Location (RS9)		Geographic location	Straight-forward interpretation	Straight-forward interpretation	Straight-forward interpretation	Straight-forward interpretation
RU		Stock of RU	Water flow	Grass area/biomass	Fish stock	Energy, capacity to convert energy
Mobility (RU1)		The mobility of the RU stock within the RS.	[medium]	[no]	Fish can move easily between different habitats within a water body [high]	[no]
Growth or replacement rate (RU2)		The rate at which RU grow or are replaced after having been extracted.	m^3/time	Growth of grass area/biomass	Reproductive rate of a fish, growth rate of the population	[Infinity; RU must be replaced instantaneously otherwise the system collapses]
Interaction among resource units (RU3)	**I**	Ecological interactions between same RU	No	No	Yes, through competition, predation, Canibalism.	No

Variable		General interpretation	Acequia irrigated agricultural in New Mexico	Common property meadows in the Swiss Alps	Recreational fisheries in Germany	Energy Regions in Austria
Interaction among resource units (RU3)	**II**	Ecological interactions between different RU	None relevant for the study	Many (e.g., biomass affects water run-off), but none are relevant for the study.	None are relevant for the study.	No
Economic Value (RU4)		Use value per unit	Straight-forward interpretation	Straight-forward interpretation	Value of fish or value of fishing license.	Straight-forward interpretation
Number of units (RU5)			Total amount of water (m^3)	Area of grass or total biomass	Number of fish	Power
Distinctive characteristics (RU6)	**I**	Natural markings: The potential to identify an individual RU based on its natural characteristics.	Natural tracers (bio-geo-chemical composition) reveal origin [somewhat]	Since RU can not move, they are marked through there unique geographic location. [yes]	[no; Without anthropogenic marking, the identity of a fish cannot be recognized]	N/a
	II	Artificial markings: The potential to anthropologically mark a RU so that is can be identified.	Artificial tracers could be added to water. [somewhat]	Same as above.	Fish can be marked with tags [yes]	N/a
Spatial and temporal distribution (RU7)	**I**	Natural spatial and temporal variability of RU.	[high; as usually in arid climates]	Spatial and temporal variability of the grass (quality, biomass, growth rate)	Spatial and temporal variability of fish	N/a
	II	Spatial and temporal variability of RU mediated through human-constructed facilities or human activities.	Altered by irrigation system. Tail and head-end distribution of water in the irrigation system (upstream-downstream)	Spatial and temporal variability of the grass altered by fertilizers, etc.	Spatial and temporal variability of fish altered by stocking	Spatial [no] and temporal [yes] variation of energy demand and supply.