

Integrated Water Management Planning Framework

TASK 4

OBJECTIVES

Develop an organizational framework for

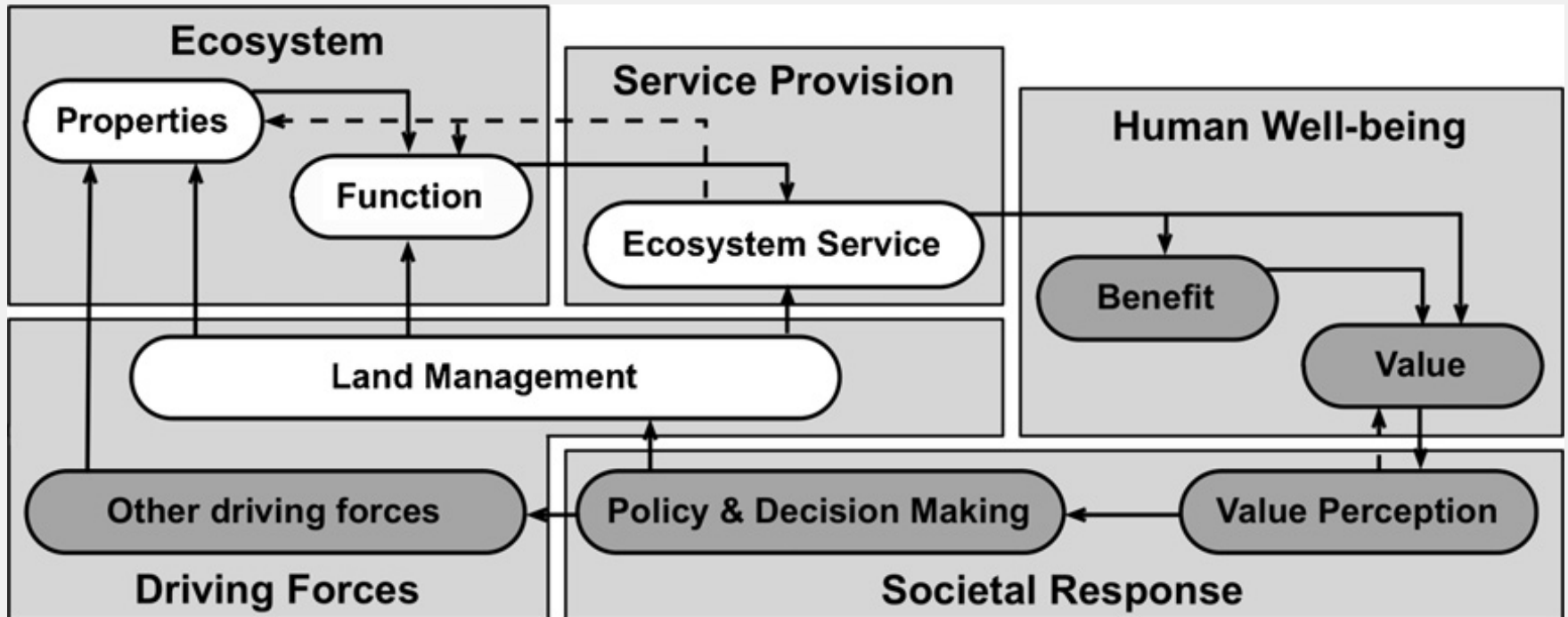
- 1) contextualizing the need or opportunity for IWMP in a sub-basin or watershed,
- 2) structuring and organizing investigations into environmental conditions, municipal/industrial use needs, and agricultural use needs and
- 3) reporting planning results back to the CBRT for synthesis with results from other watersheds

SCOPE OF WORK AND TIMELINE

- 1) Review Scope of Work and Develop Timeline for Incorporating Stakeholder Feedback – December 2017
- 2) Convene Relevant Parties and Align Effort with Others (e.g. SWSI) – January 2018
- 3) Develop Organizational Frameworks -- Feb-March 2018
- 4) Final Deliverables to CMU/CBRT in April 2018

CONCPETUAL MODEL

CONCEPTUAL MODEL FROM A.P.E. VAN OUDENHOVEN ET AL. (2012) INDICATING THE RELATIONSHIPS BETWEEN ECOSYSTEM FUNCTION AND THE HUMAN WELL-BEING WHERE PLANNING AND DECISION MAKING ARE LARGELY DRIVEN BY THE BALANCE BETWEEN THE DELIVERY OF ECOSYSTEM GOODS AND SERVICES AND THE DEMAND ON THOSE SERVICES.



ORGANIZATIONAL FRAMEWORK

Reach ID	Ecosystem Condition									
	Ecological Integrity	Aquatic Biodiversity	Riparian Biodiversity	Longitudinal Connectivity	Lateral Connectivity	Vertical Connectivity	Temporal Connectivity	Functional Connectivity	Structural Heterogeneity	
1		1	2	5	4	2	1	1	0	
1		2	2	3	4	1	1	0	1	
1		4	2	3	5	3	2	5	3	
2		4	2	3	5	3	2	5	3	
3		4	3	5	5	5	3	4	2	
3		1	0	0	2	3	2	1	0	
4		3	4	2	1	5	4	3	2	

	Capacity for Delivering Ecosystem Services																			
	Regulating Services	Flood Abatement	Nutrient Transformation	Groundwater Recharge	Erosion Control	Pest Regulation	Pollutant Assimilation	Water purification	Provisioning Services	Agricultural Production	Drinking Water Supply	Industrial Production	Small Game/Birds	Capture Fisheries	Cultural Services	Aesthetic Values	Spiritual Values	Boating Recreation	Angling Recreation	Intrinsic Biodiversity Values
		1	0	2	3	2	1	1		1	0	0	0	1		1	1	3	2	2
		2	2	3	4	1	1	0		2	2	3	2	1		2	2	3	4	1
		4	2	3	5	3	2	5		3	3	1	2	1		4	2	3	5	3
		4	2	2	2	2	2	2		4	2	3	5	3		4	2	3	5	3
		4	3	4	3	5	3	4		4	3	5	3	5		3	2	2	1	0
		1	1	1	1	2	1	1		1	0	0	2	3		1	0	0	2	3
		3	4	2	1	5	4	3		3	4	2	1	5		3	2	2	2	5

0	= None
1	= Very Low
2	= Low
3	= Moderate
4	= High
5	= Very High

CONCEPTUAL FRAMEWORK FOR ORGANIZING AND REPORTING ON THE CONDITION OF ECOSYSTEMS, THEIR ABILITY TO DELIVER IMPORTANT ECOSYSTEM GOODS AND SERVICES, THE RELATIVE DEMAND FOR THOSE SERVICES IN A LOCALITY, AND THE BALANCE BETWEEN SUPPLY AND DEMAND FOR THOSE SERVICES.

ORGANIZATIONAL FRAMEWORK

		Ecological Conservation Value								
Reach ID	Ecological Integrity	Aquatic Biodiversity	Riparian Biodiversity	Longitudinal Connectivity	Lateral Connectivity	Vertical Connectivity	Temporal Connectivity	Functional Connectivity	Structural Heterogeneity	
1	2	2	2	2	2	2	2	2	2	2
1	3	3	3	3	3	4	3	3	2	
1	3	3	4	4	4	4	4	3	2	
2	3	4	4	3	3	4	4	4	4	
3	5	4	4	3	3	4	4	4	4	
3	5	5	5	4	4	4	4	4	5	
4	3	4	3	2	2	1	5	2		

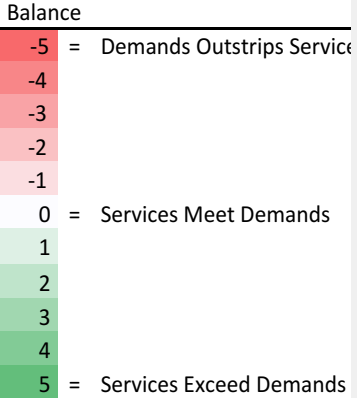
		Demand for Services																	
Regulating Services	Flood Abatement	Nutrient Transformation	Groundwater Recharge	Erosion Control	Pest Regulation	Pollutant Assimilation	Water purification	Provisioning Services	Agricultural Production	Drinking Water Supply	Industrial Production	Small Game/Birds	Capture Fisheries	Cultural Services	Aesthetic Values	Spiritual Values	Boating Recreation	Angling Recreation	Intrinsic Biodiversity Values
	1	0	0	0	1	2	4		2	4	3	4	0		4	5	2	2	3
	4	2	5	2	2	3	5		5	0	5	3	1		0	4	1	1	5
	5	2	2	4	1	1	5		5	1	2	3	5		2	0	4	5	2
	3	3	4	4	0	0	4		4	3	0	2	2		5	3	1	2	4
	0	3	4	4	1	1	3		0	5	5	4	3		3	2	4	4	1
	5	3	1	1	0	0	4		5	5	2	0	5		5	1	5	4	1
	1	5	5	1	4	3	1		1	1	4	5	4		3	3	5	3	5

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- 3 = Moderate
- 4 = High
- 5 = Very High

ORGANIZATIONAL FRAMEWORK

Ecological Restoration Priority									
Reach ID	Ecological Integrity	Aquatic Biodiversity	Riparian Biodiversity	Longitudinal Connectivity	Lateral Connectivity	Vertical Connectivity	Temporal Connectivity	Functional Connectivity	Structural Heterogeneity
1		1	0	-3	-2	0	1	1	2
1		1	1	0	-1	3	2	3	1
1		-1	1	1	-1	1	2	-2	-1
2		-1	2	1	-2	0	2	-1	1
3		1	1	-1	-2	-2	1	0	2
3		4	5	5	2	1	2	3	5
4		0	0	1	1	-3	-3	2	0

Balance of Ecosystem Services Delivery																			
Regulating Services	Flood Abatement	Nutrient Transformation	Groundwater Recharge	Erosion Control	Pest Regulation	Pollutant Assimilation	Water purification	Provisioning Services	Agricultural Production	Drinking Water Supply	Industrial Production	Small Game/Birds	Capture Fisheries	Cultural Services	Aesthetic Values	Spiritual Values	Boating Recreation	Angling Recreation	Intrinsic Biodiversity Values
	0	0	2	3	1	-1	-3		-1	-4	-3	-4	1		-3	-4	1	0	-1
	-2	0	-2	2	-1	-2	-5		-3	2	-2	-1	0		2	-2	2	3	-4
	-1	0	1	1	2	1	0		-2	2	-1	-1	-4		2	2	-1	0	1
	1	-1	-2	-2	2	2	-2		0	-1	3	3	1		-1	-1	2	3	-1
	4	0	0	-1	4	2	1		4	-2	0	-1	2		0	0	-2	-3	-1
	-4	-2	0	0	2	1	-3		-4	-5	-2	2	-2		-4	-1	-5	-2	2
	2	-1	-3	0	1	1	2		2	3	-2	-4	1		0	-1	-3	-1	0



THANKS
FOR YOUR ATTENTION

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