

IDAHO WATER SURVEY RESULTS

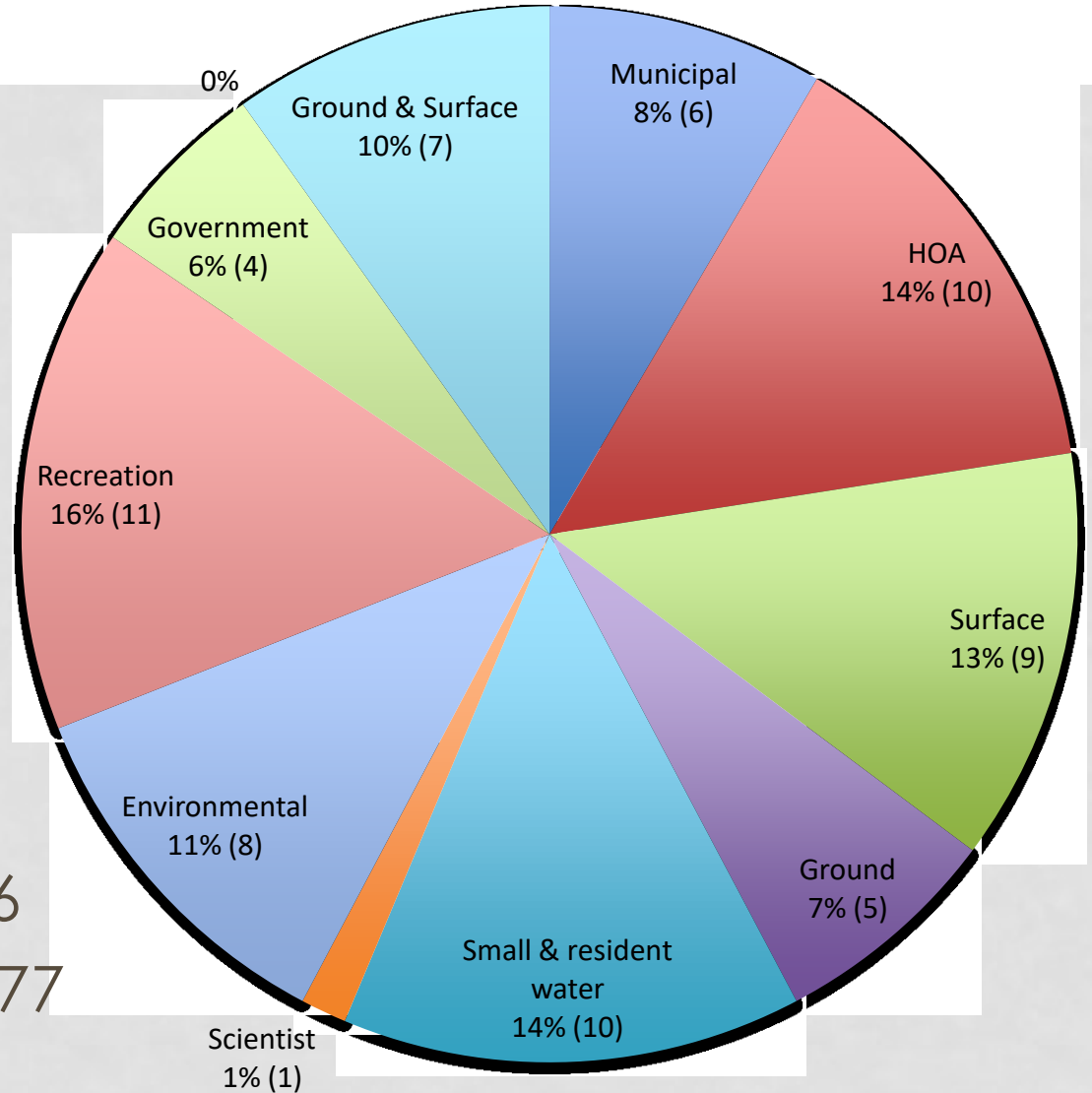
1

1.18.16

ANNA PAKENHAM STEVENSON
OREGON STATE UNIVERSITY



SURVEY PARTICIPATION



- Administered 4/2016
- People took survey 77
- 67% response rate

THE SURVEY COMPONENTS

1. Governance- legitimacy, accountability, inclusion
2. Social Capital- local networks, trust, reciprocity
3. Human, financial and physical capital- knowledge, information, finance, infrastructure
4. Management tools and strategies- innovation, risk behavior

PRESENTING DATA

- Responses by **all survey** participants
- Response **by stakeholder** group:
 1. Surface: surface only
 2. Groundwater: GW, surface and GW combined
 3. Non-consumptive: recreation, environmental, scientist
 4. Government: all government
 5. Municipal: Municipal, HOA, small users
- Lots of data here, will only touch upon highlights

GOVERNANCE

GOVERNANCE QUESTIONS:

Authority

- It is clear to my stakeholder group... **Who has jurisdictional authority** to make decisions
- Who has **senior water rights**
- How **groundwater use affects surface water** rights

Leadership

- There is an **individual or entity that helps to bring diverse stakeholders together**
- There is an individual or **entity that is trusted** by stakeholders to lead
- There is an individual or entity that **motivates creativity** in others

Engagement

- My **stakeholder group has the opportunity to engage** in watershed management decisions
- My stakeholder group has **a meaningful role** in watershed management decisions
- Stakeholders who are engaging in watershed management decisions **are motivated** to get things done

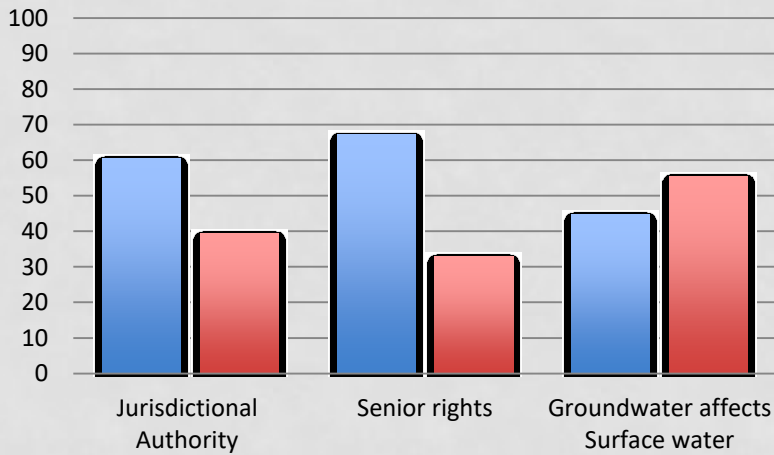
Vision and change

- Stakeholders have a **common vision** for managing water in the face of challenges in my watershed
- The current way that water is managed **can meet my stakeholder group's water needs.**
- **Regulatory changes are necessary** in our watershed for better water management.

GOVERNANCE

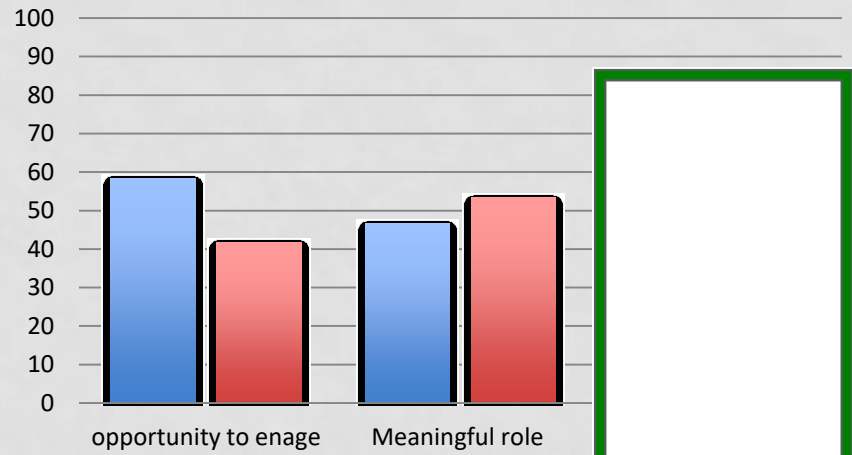
Authority

agree not-agree



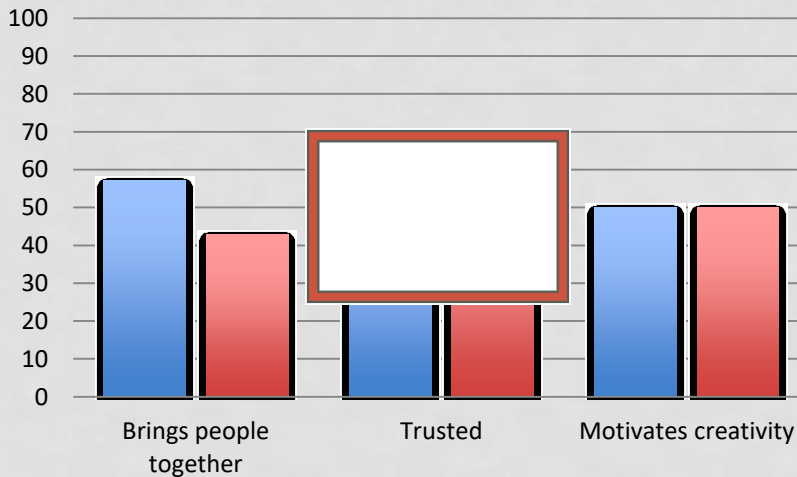
Engagement

agree not-agree



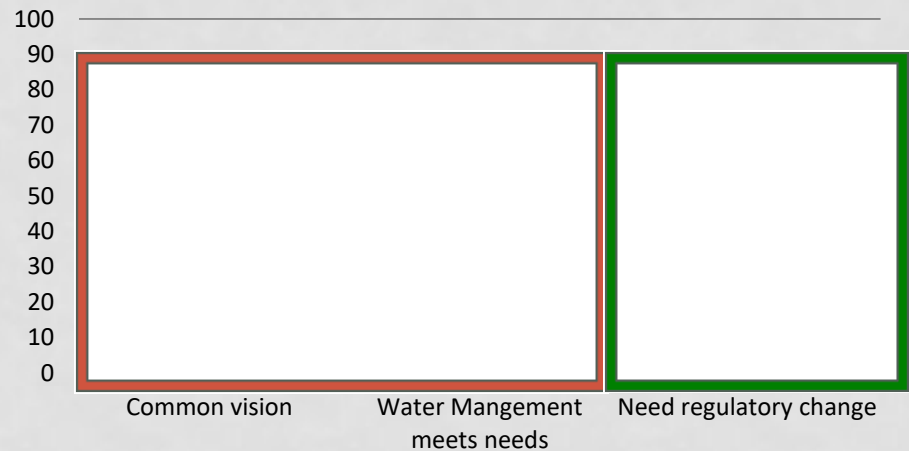
Leadership

agree not-agree



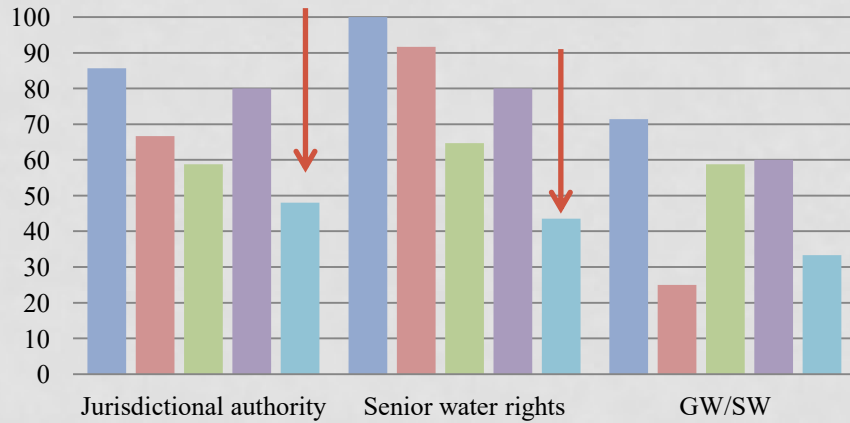
Other

agree not-agree

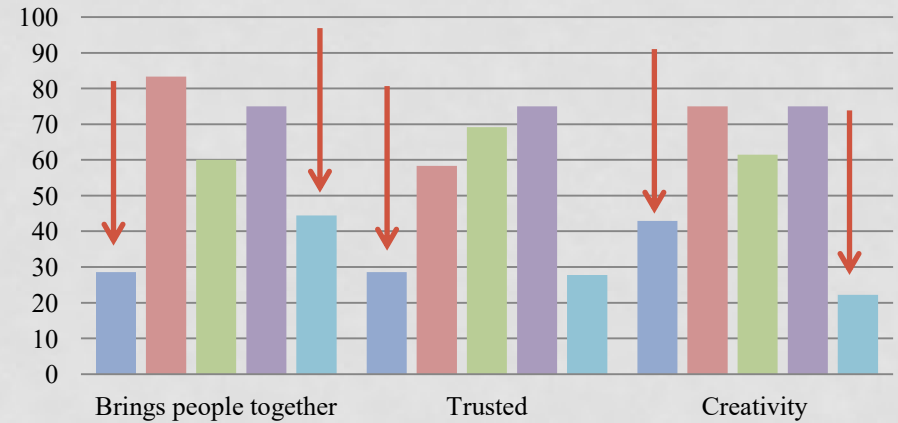


GOVERNANCE BY STAKEHOLDER

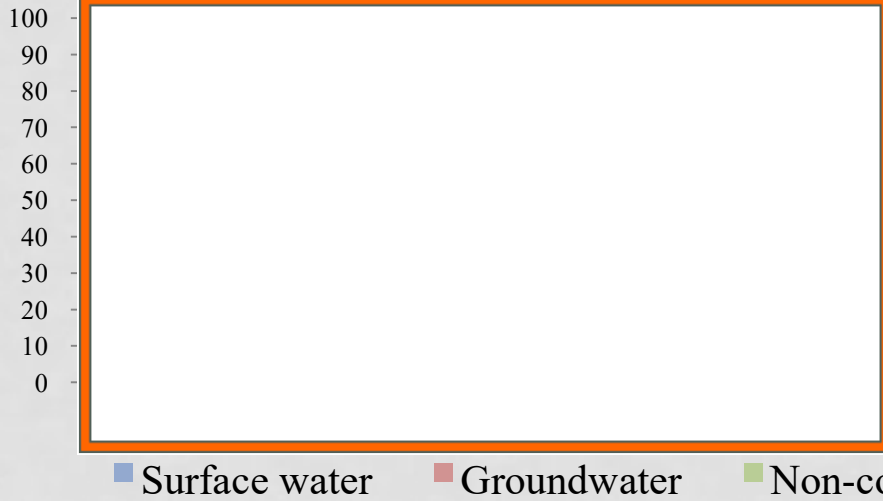
authority



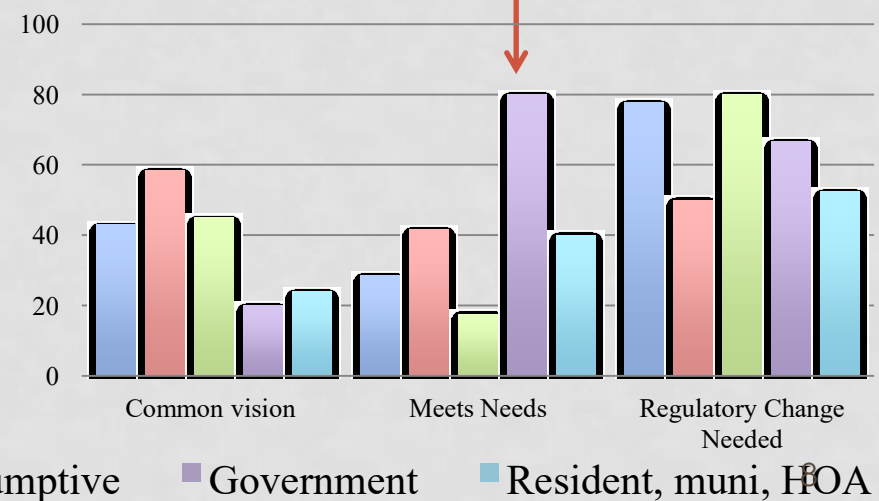
leadership



engagement



other



■ Surface water ■ Groundwater ■ Non-consumptive ■ Government ■ Resident, muni, HOA

GOVERNANCE SUMMARY

Barriers

1. Lack of common vision and meeting needs of stakeholders
2. Leadership not trusted
 - Leadership especially low with surface water users
3. Low municipal responses on most accounts (opportunity to engage and meaningful role)

Opportunities

1. Motivation high
2. There is leadership
3. Need for regulatory change

SOCIAL CAPITAL

SOCIAL CAPITAL QUESTIONS

Network

- **Share information** with each other.
- Are **supportive** of each other.
- Are **willing to work together** to solve water problems.
- Are **willing to sacrifice** their needs in the short-term because they believe that in the long-run, all needs will be met.

Trust

- I trust that water management decisions will **produce good outcomes for all**
- I trust **other stakeholders to keep my needs** in mind

Reciprocity

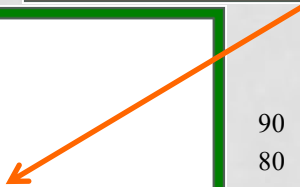
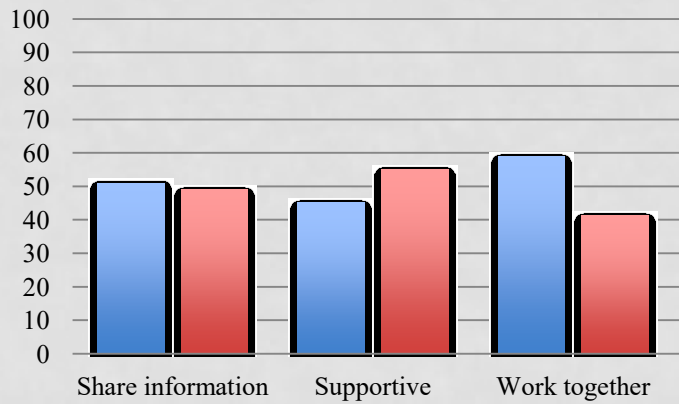
- I feel **a personal obligation to find long-term water solutions**
- I feel a **responsibility to help educate** others about water needs
- I know that **my own behaviors impact other** water users
- I **can do more** to ensure water solutions are found in my watershed.
- I **feel powerless** in helping to resolve watershed issues.

Sustainability

- Has the ability to **achieve water sustainability goals**
- Has **identified and prioritized community values** for water use

SOCIAL CAPITAL

Network

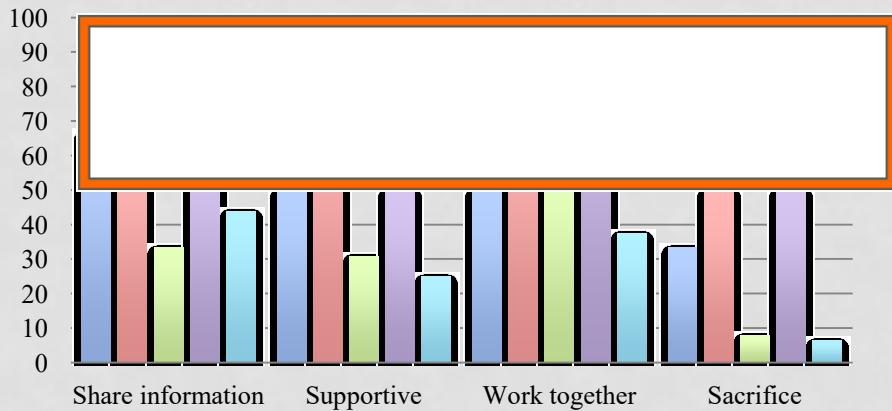


agree

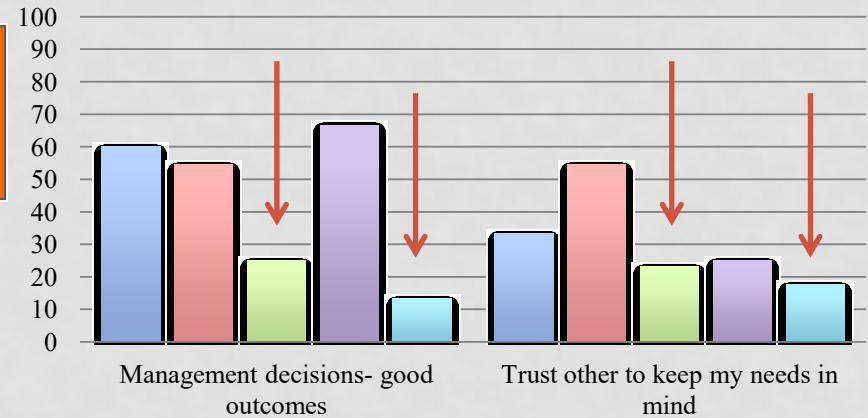
not-agree

SOCIAL CAPITAL BY STAKEHOLDER

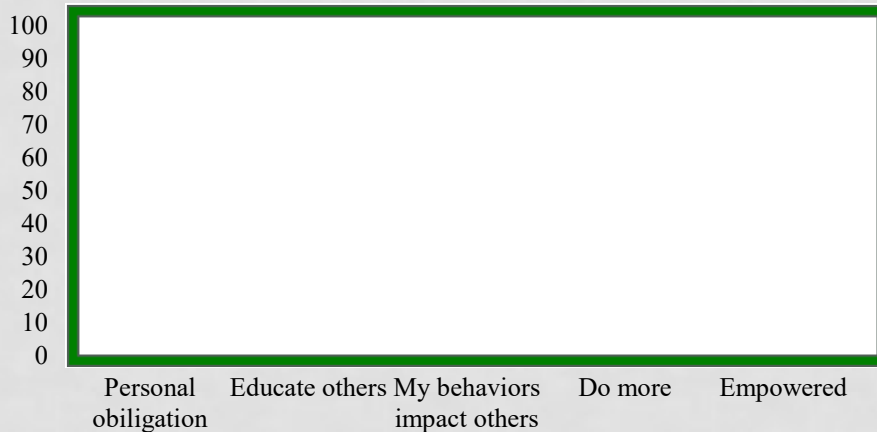
Network



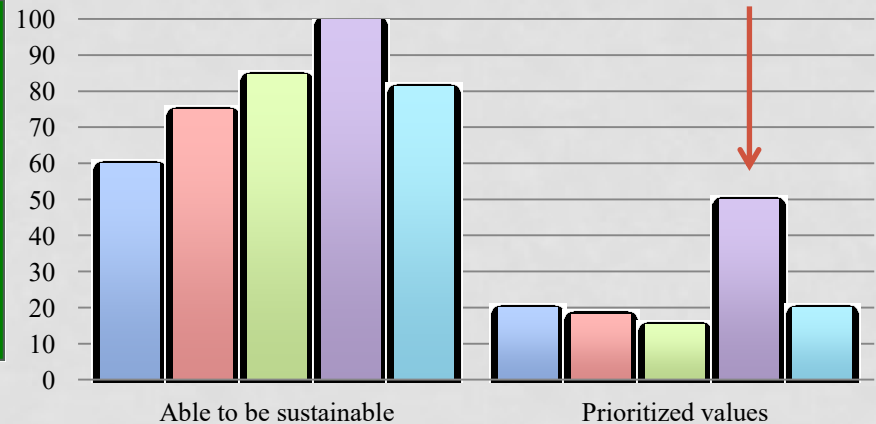
Trust



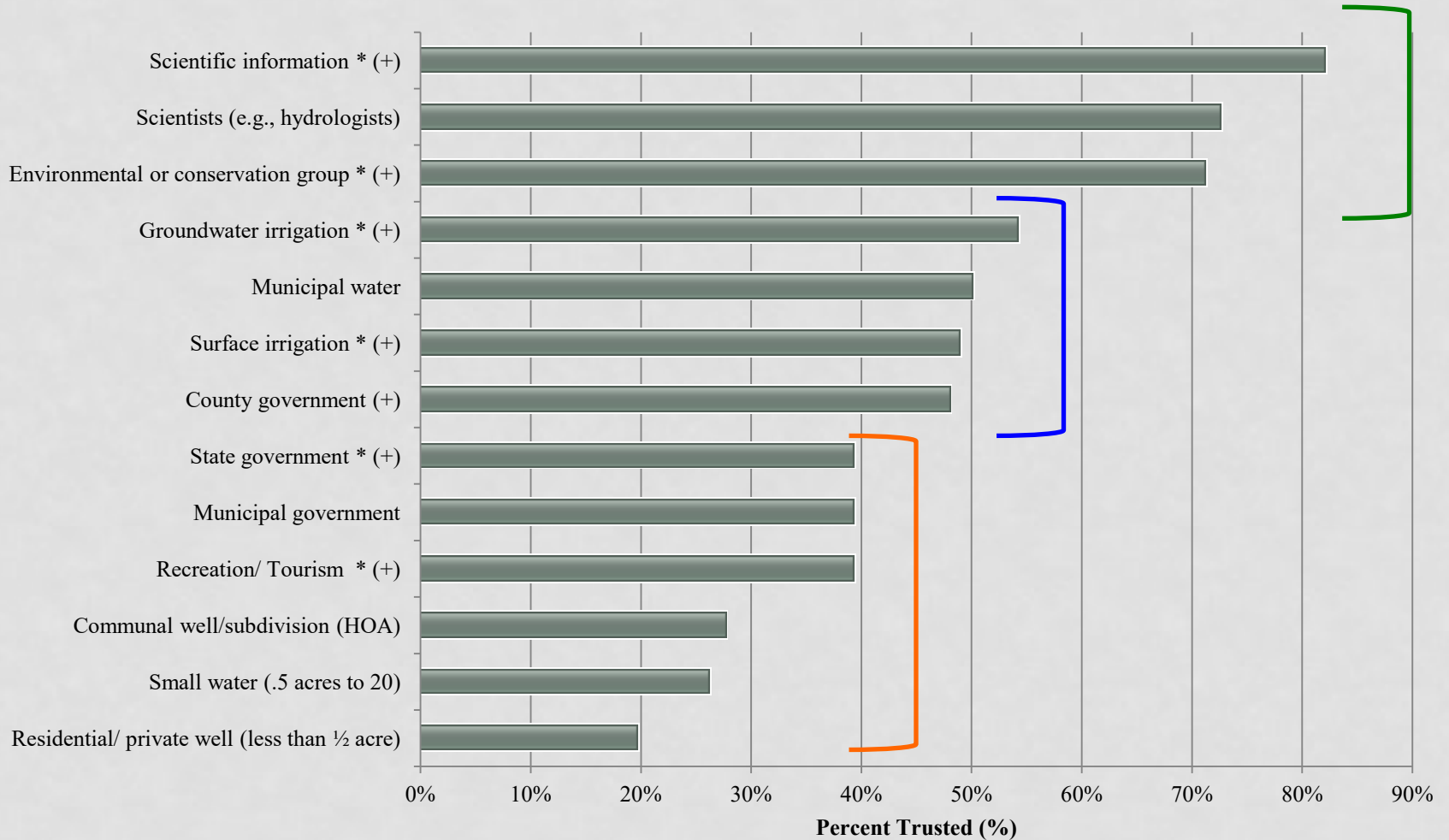
Reciprocity



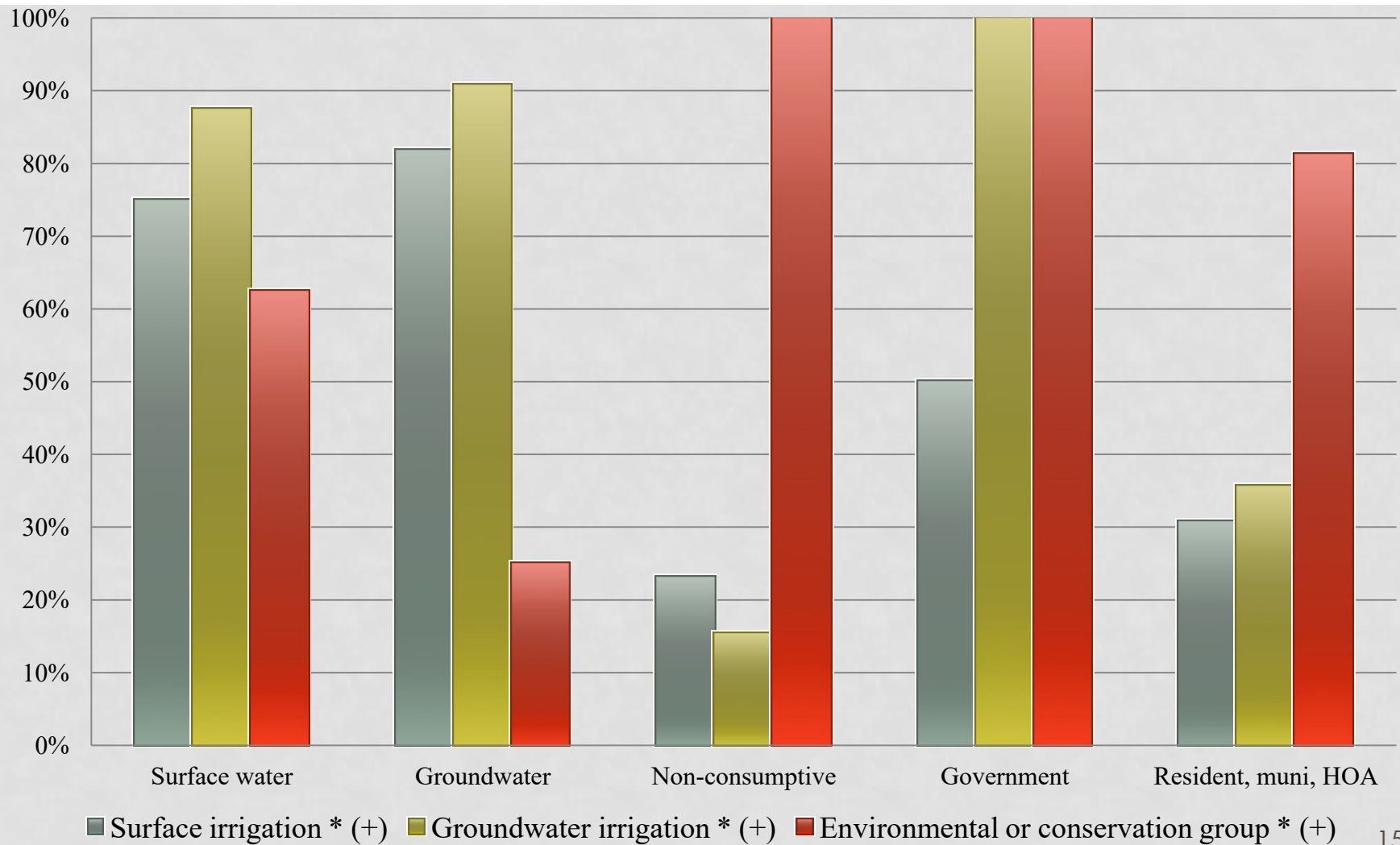
Sustainability



OVERALL TRUST



TRUST BETWEEN STAKEHOLDERS



SOCIAL CAPITAL

Barriers

1. Low amount of trust overall
2. Low trust & network by non-consumptive users
3. Have not prioritized water values

Opportunities

1. Highest overall trust in science, scientists, and environmental groups
2. Higher perceptions network GW & government
3. High sense of reciprocity
4. High support for belief in sustainable outcome

HUMAN, FINANCIAL, PHYSICAL CAPITAL

OTHER CAPITAL

Knowledge

- The **human factors** that influence water management
- The **economic factors** that influence water management
- The **bio-physical factors** that influence water management

Information

- **Access to scientific** information
- **Access to technical** expertise

Capacity

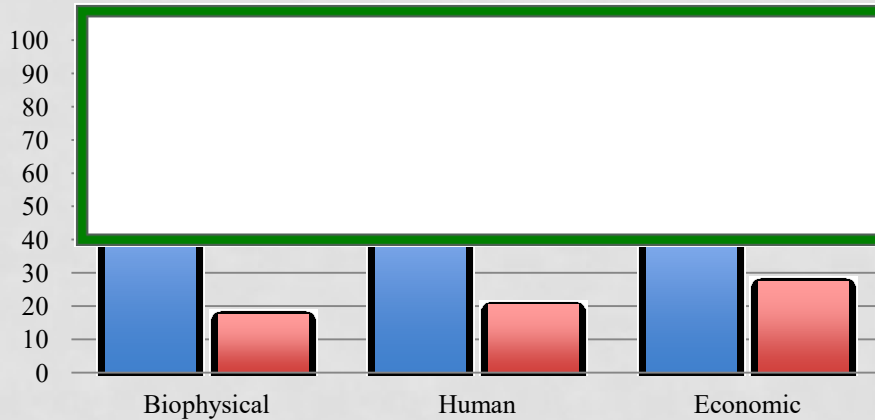
- Capacity to **manage watershed meetings** and other outreach activities
- Capacity to **analyze water management** options
- Capacity to **report** on outcomes

Finances and Infrastructure

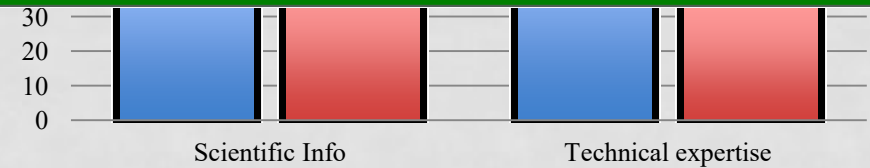
- Our watershed **has adequate financial resources** available.
- Our watershed already has the **necessary infrastructure**

HFP CAPITAL

Knowledge



Information



Capacity



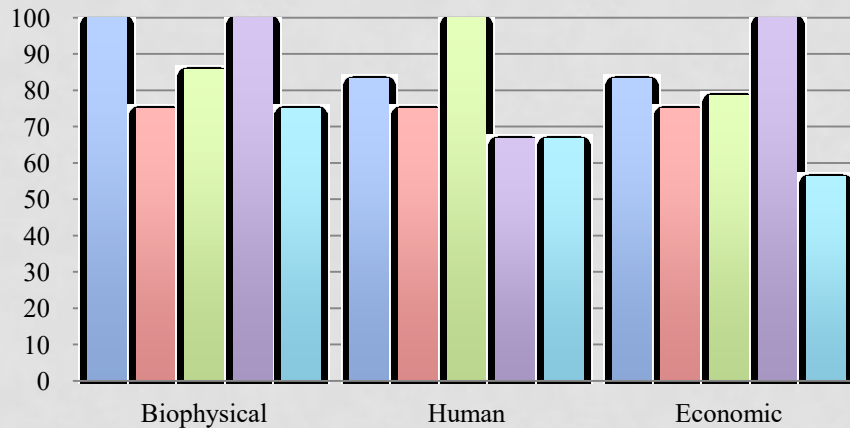
Finance & infrastructure



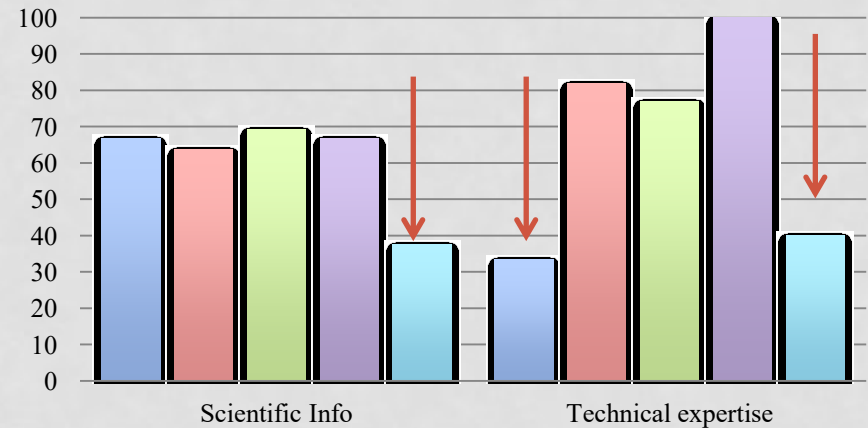
agree not-agree

HFP CAPITAL BY STAKEHOLDER

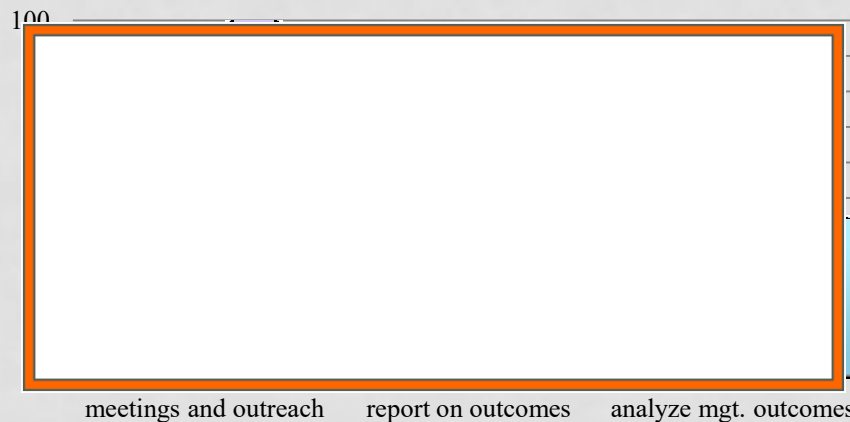
Knowledge



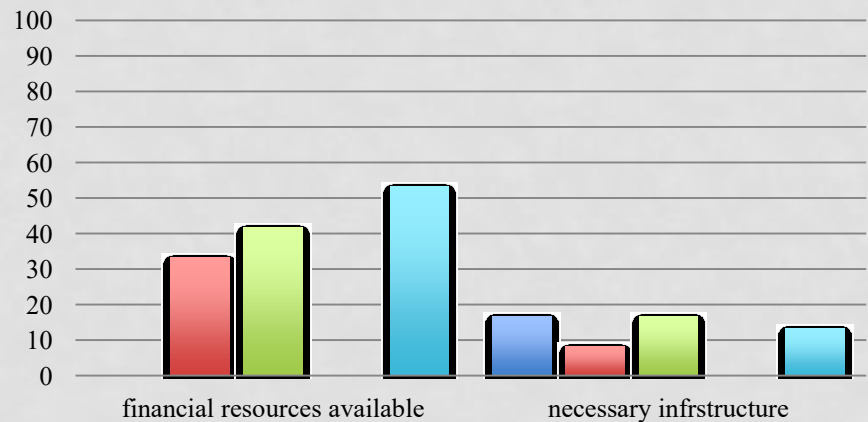
Information



Capacity



Finance & infrastructure



HFP CAPITAL SUMMARY

Barriers

1. Information needs is greatest among municipal users
2. Technical expertise need greatest among surface water and municipal users
3. Overall strong need for financial and infrastructure support

Opportunities

1. Higher belief in capacity by environmental, recreation, and government groups
2. High knowledge and information across users

WATER MGT.

MANAGEMENT QUESTIONS

Innovation

- Stakeholders are willing to **try new things** to meet multiple needs
- **Learning** about new water conservation technologies is important
- My stakeholder group **is innovative**
- My stakeholder group has **techniques or technologies to share**

Goals

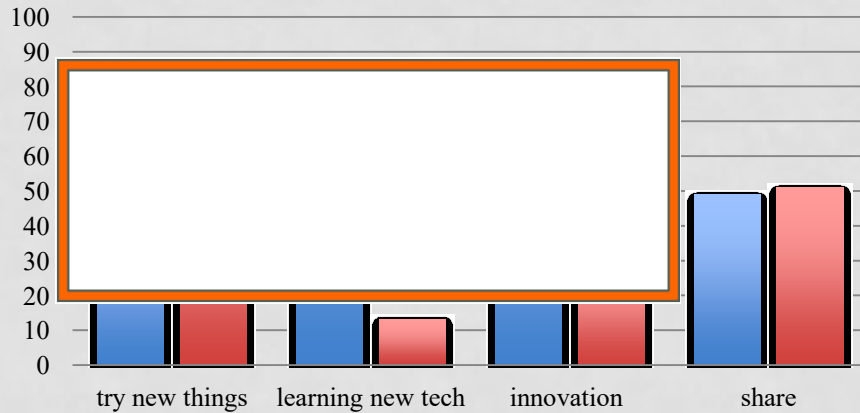
- There are **measurable water management goals**
- **Progress is evaluated** against those management goals.
- Water management **goals reflect the needs**
- Stakeholders have a firm grasp of our **opportunities** and alternatives.

Adapt

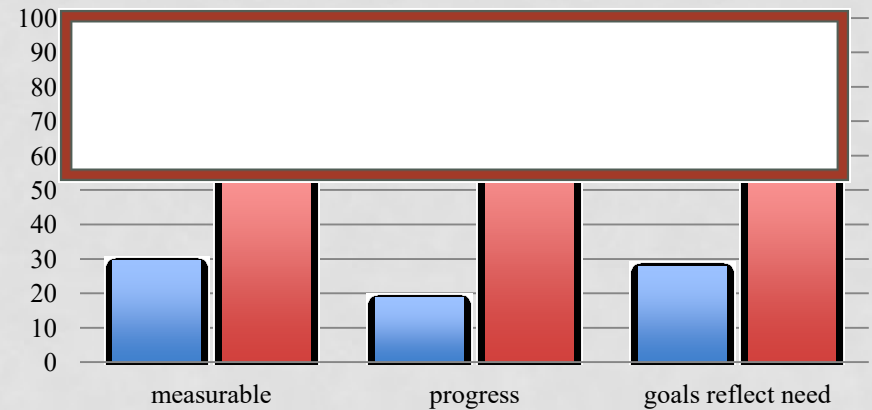
- We have the **ability to adapt** to change.
- We have the **ability to capitalize** on that change.

MGT. TOOLS & STRATEGIES

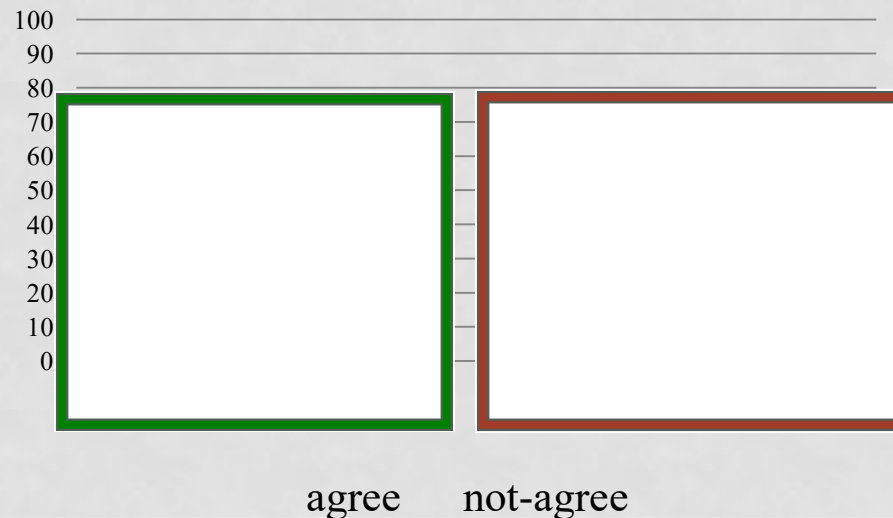
Innovation



Goals

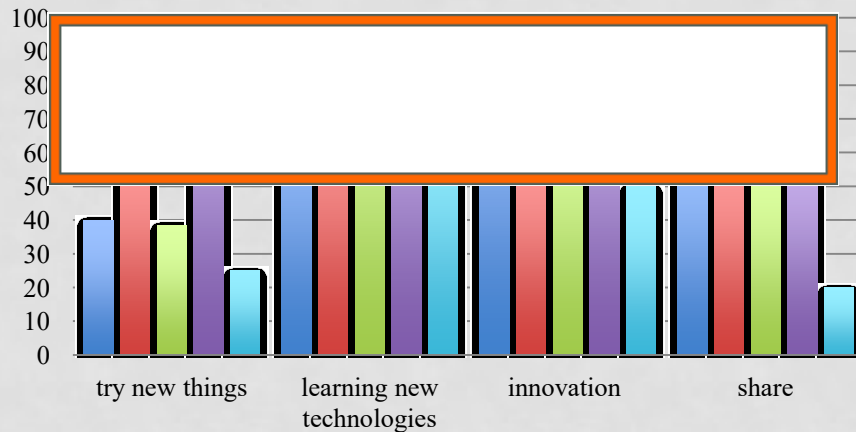


Adapt

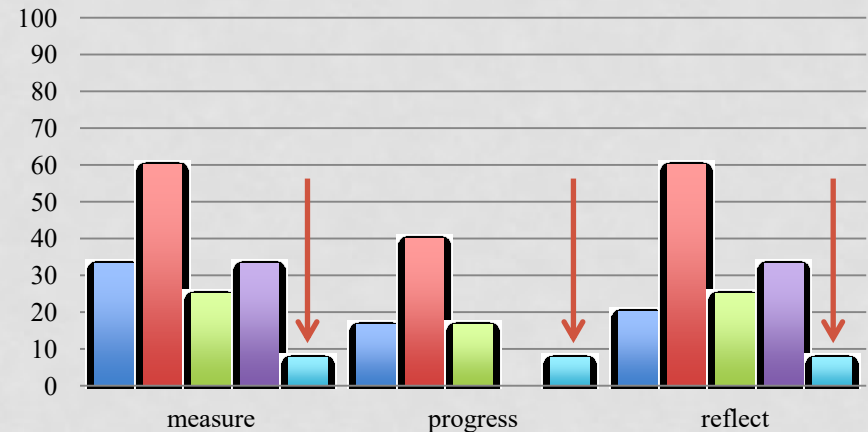


MGT. TOOLS BY STAKEHOLDER

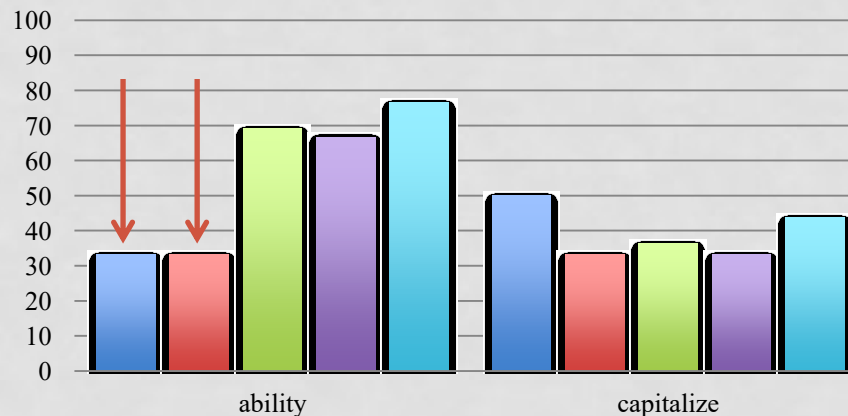
Innovation



Goals



Adapt



MGT. STRATEGIES

Barriers

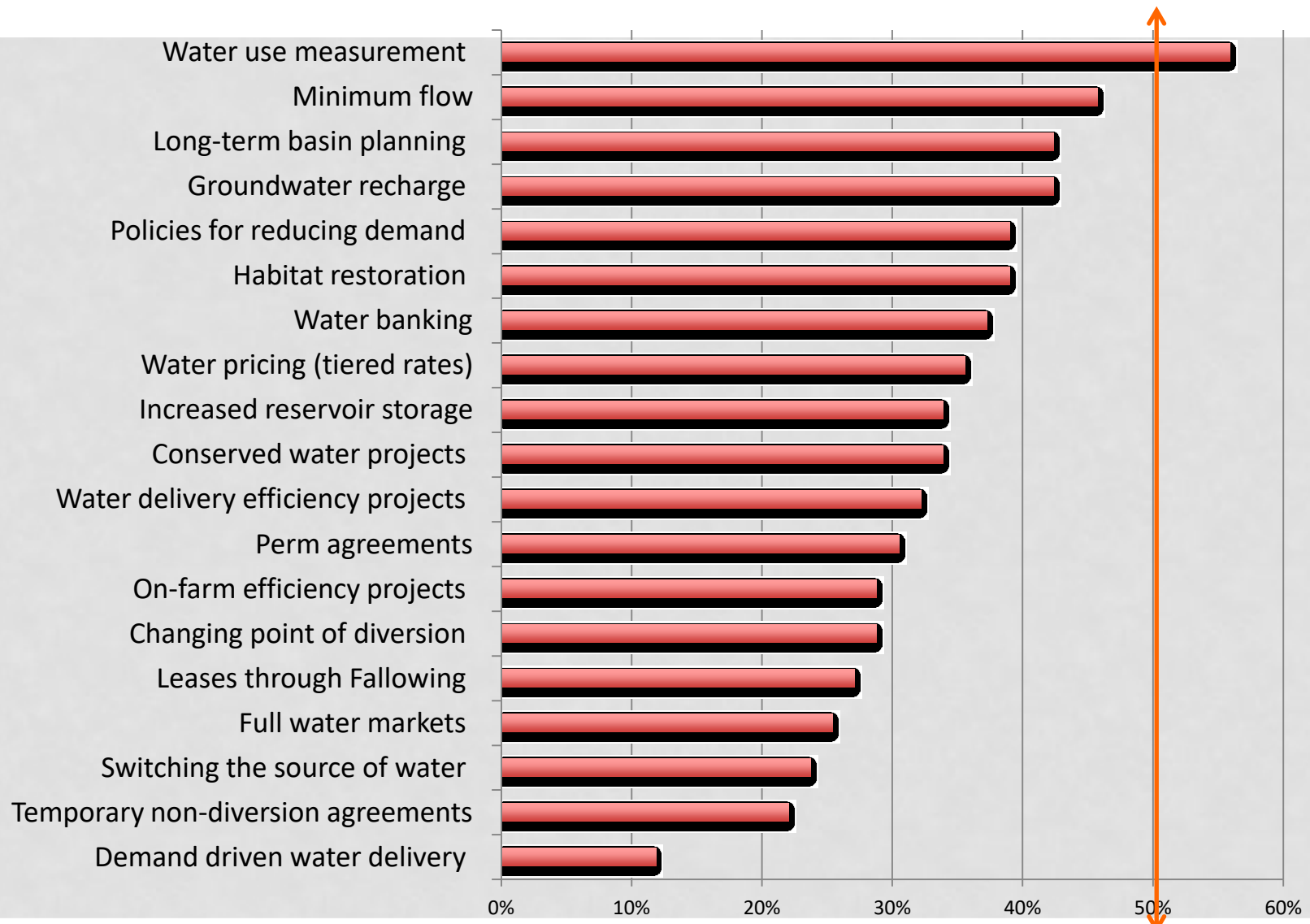
1. Goals and use lacking
2. Goal indicators particularly low with municipalities
3. Ability to adapt low with GW and SW users
4. Low belief in ability to capitalize on change

Opportunities

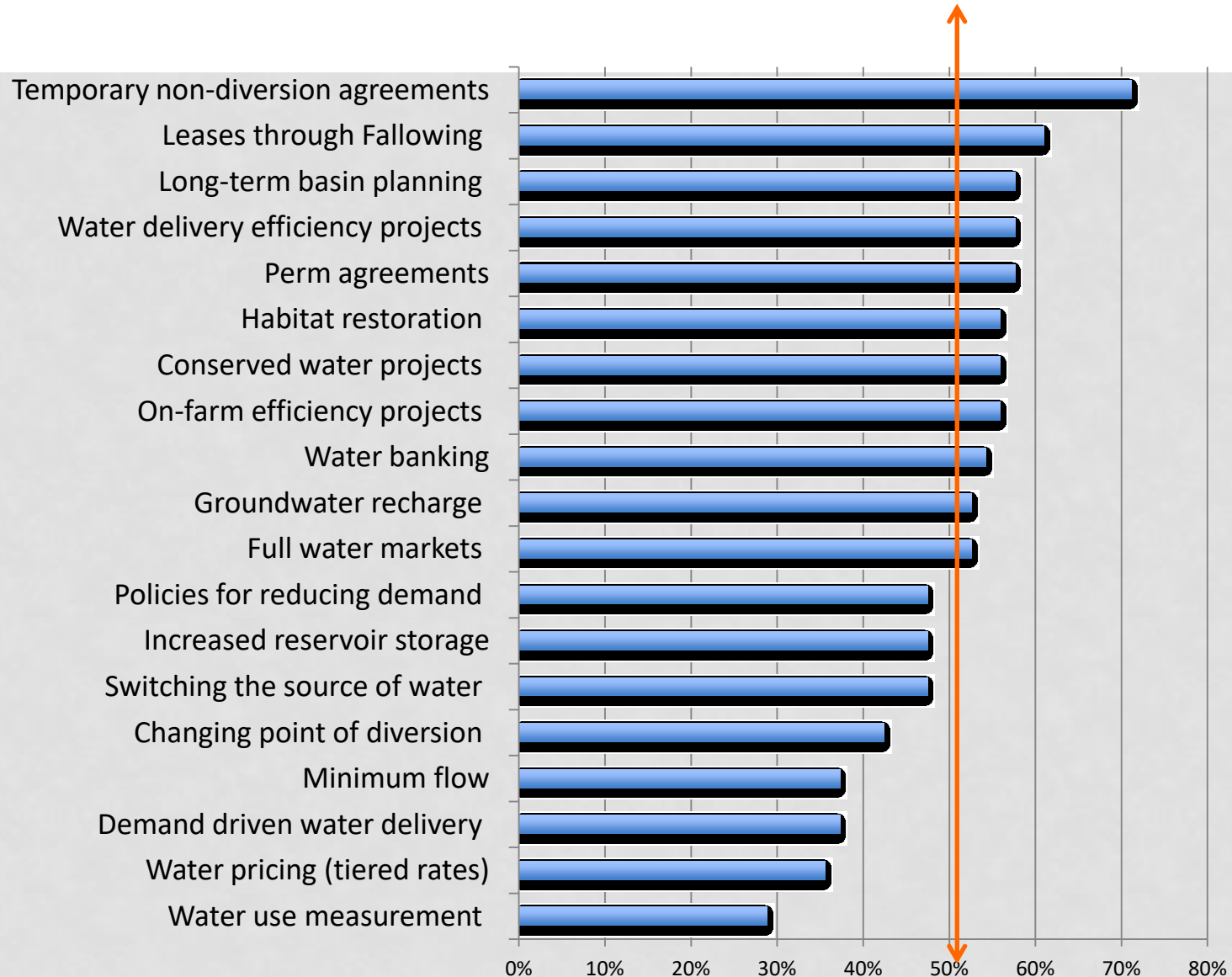
1. Goals highest in GW users
2. Overall the ability to adapt high
3. Innovation indicators generally high

WATER MGT. TOOLS

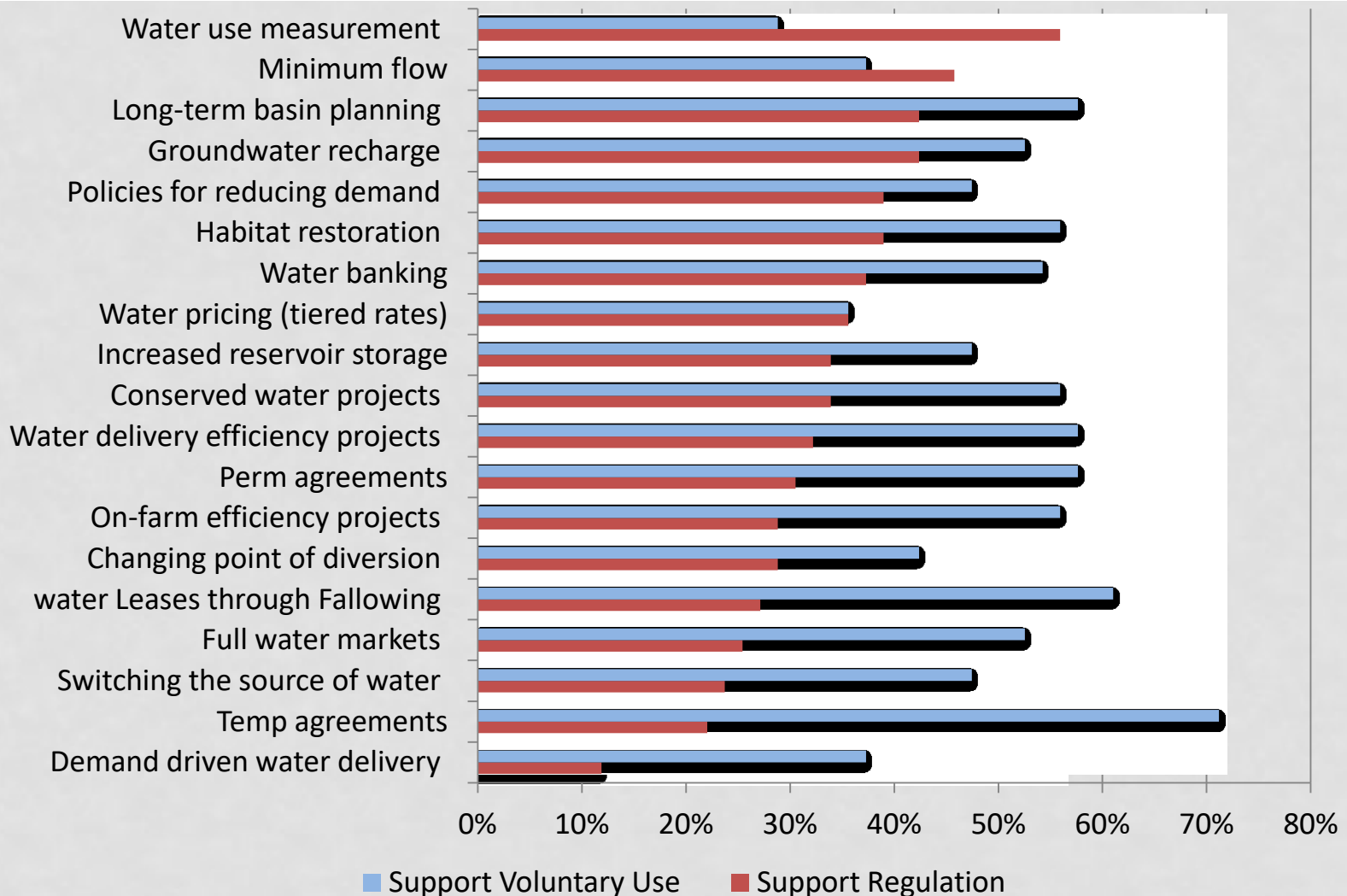
SUPPORTIVE OF REGULATORY USE



SUPPORTIVE OF VOLUNTARY USE



SUPPORT FOR TOOLS



DIFFERENCE BY STAKEHOLDER (REGULATORY)

	Surface water	Groundwater	Non- consumptive	Government	Resident, muni, HOA	Total
Demand driven water delivery (+)	0%	8%	33%	0%	6%	12%
Temp non-diversion agreements	25%	8%	33%	25%	22%	23%
Switching the source of water (+)	38%	33%	33%	0%	11%	25%
Full water markets (+)	13%	8%	47%	25%	28%	26%
Water leases through fallowing	25%	17%	40%	50%	22%	28%
On-farm efficiency projects (+)	13%	25%	53%	25%	22%	30%
Changing point of diversion (+)	13%	33%	53%	0%	22%	30%
Perm agreements	13%	25%	33%	50%	39%	32%
Water delivery efficiency projects (+)	13%	25%	53%	50%	28%	33%
Conserved water projects (* /+)	38%	8%	53%	75%	28%	35%
Increased reservoir storage	38%	50%	40%	0%	28%	35%
Water pricing (tiered rates) (* /+)	13%	25%	67%	50%	28%	37%
Water banking (* /+)	13%	17%	60%	25%	50%	39%
Habitat restoration (+)	25%	17%	60%	75%	39%	40%
Policies for reducing demand (* /+)	13%	17%	73%	50%	39%	40%
Groundwater recharge (+)	25%	50%	67%	25%	33%	44%
Long-term basin planning	25%	42%	53%	25%	50%	44%
Minimum flow requirements	50%	33%	53%	75%	44%	47%
Water use measurement (+)	25%	58%	73%	75%	56%	58%

DIFFERENCE BY STAKEHOLDER (VOLUNTARY)

	Surface water	Groundwater	Non-consumptive	Government	Resident, muni, HOA	Total
Water use measurement (* /+)	25%	0%	47%	25%	39%	30%
Water pricing (tiered rates)	63%	25%	40%	25%	33%	37%
Minimum flow requirements (* /+)	50%	8%	60%	25%	39%	39%
Demand driven water delivery (+)	38%	33%	40%	0%	50%	39%
Changing point of diversion	63%	42%	33%	25%	50%	44%
Increased reservoir storage (+)	75%	33%	53%	25%	50%	49%
Switching the source of water	50%	50%	53%	25%	50%	49%
Policies for reducing demand	50%	42%	40%	75%	56%	49%
Full water markets (* /+)	88%	33%	60%	100%	39%	54%
Groundwater recharge (+)	88%	42%	53%	50%	50%	54%
Water banking	50%	67%	53%	50%	56%	56%
Habitat restoration	63%	42%	60%	50%	67%	58%
Conserved water projects (+)	75%	75%	60%	25%	44%	58%
On-farm efficiency projects (+)	50%	33%	53%	50%	83%	58%
Perm agreements (* /+)	88%	25%	67%	75%	61%	60%
Water delivery efficiency projects	63%	67%	53%	50%	61%	60%
Long-term basin planning (+)	88%	67%	53%	50%	50%	60%
Water leases through fallowing	88%	58%	53%	50%	67%	63%
Temp non-diversion agreements	88%	67%	80%	50%	72%	74%

TOOLS- TOP 5

		Surface	Ground	Non- consumptive	Government	Municipal
Water use measurement (+)						
Minimum flow requirements				3		
Long-term basin planning		1	2		3	
Groundwater recharge (+)		1			3	
Policies for reducing demand (* /+)					2	
Water leases through fallowing		1			3	3
Water delivery efficiency projects			2		3	4
Conserved water projects (+)			1	3		
Water banking			2		3	
Habitat restoration				3	3	3
On-farm efficiency projects (+)					3	1

OVERALL SUMMARY

Barriers

1. Lack of common vision and meeting needs of stakeholders
2. Leadership not trusted and low trust overall
3. Have not prioritized water values
4. Goals and their use lacking
5. Low belief in ability to capitalize on change

Opportunities

1. High motivation
2. Leadership present
3. Need for regulatory change
4. High sense of reciprocity
5. High belief in sustainable outcome
6. High belief ability to adapt (except GW and SW users)
7. Multiple management tools have voluntary support

QUESTIONS?



Contact information

- Anna Pakenham Stevenson
- pakenhaa@oregonstate.edu
- 541-272-9911

SPACE



GOVERNANCE BY STAKEHOLDER

	Stakeholders (% agree)						χ ²	p-value
	SW	GW	Non-consum	Gov.	Resident	Total		
Authority	86	67	59	80	48	61	4.83	0.31
Senior water rights	100	92	65	80	44	67	15.55	0.00
GW/SW	71	25	59	60	33	45	7.16	0.13
Opportunity	71	75	53	100	40	58	9.20	0.06
Meaningful role	100	58	53	25	20	47	18.59	0.00
Motivated	100	83	67	100	58	74	10.53	0.03
Brings people together	29	83	60	75	44	57	7.88	0.10
Trusted	29	58	69	75	28	48	8.29	0.08
Creativity	43	75	62	75	22	50	10.91	0.03
Common vision	43	58	45	20	24	38	5.48	0.24
Meet water needs	29	42	18	80	40	36	7.32	0.12
Regulatory changes	29	50	13	25	19	24	4.87	0.30

SOCIAL CAPITAL BY STAKEHOLDER

	Stakeholders (% agree)						x ²	p-value
	SW	GW	Non-consum	Gov.	Resident	Total		
Share information	67	67	33	67	44	51	3.97	0.41
Supportive of each other	50	83	31	50	25	45	11.49	0.02
Willing to work together	50	82	57	100	38	59	10.06	0.04
Willing sacrifice	33	50	8	50	6	24	11.30	0.02
Trust water management	60	55	25	67	13	35	8.46	0.08
Others keep my needs	33	55	23	25	18	29	4.61	0.33
Personal obligation	100	92	79	75	82	85	3.21	0.52
Responsibility to educate	100	92	79	75	81	85	3.28	0.51
My behaviors impact others	100	100	79	100	82	89	7.04	0.13
Do more to find solutions	100	100	79	50	77	83	9.65	0.05

HFP CAPITAL BY STAKEHOLDER

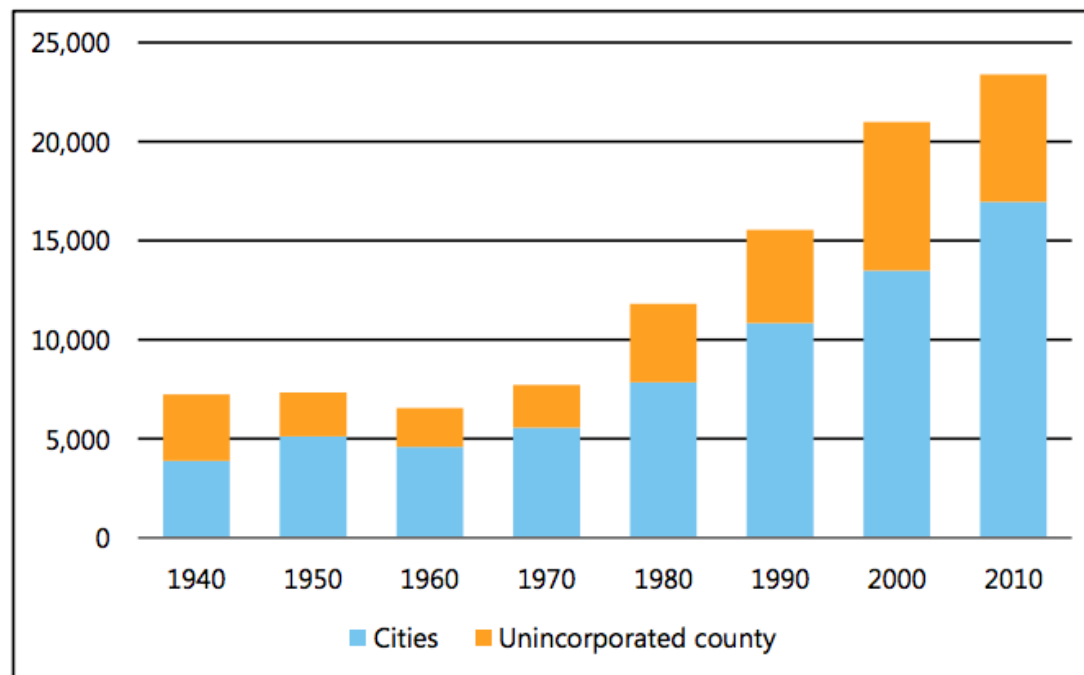
	Stakeholders (% agree)						χ ²	p-value	
	SW	GW	Non-consum	Gov.	Resident	Total			
Aware of bio-physical impacts	100	75	86	100	75	82	4.56	0.34	
Aware of human impacts	83	75	100	67	67	80	7.77	0.10	
Aware of economic impacts	83	75	79	100	56	73	4.56	0.34	
Scientific Info	67	64	69	67	38	57	3.83	0.43	
Technical expertise	33	82	77	100	40	63	11.21	0.02	
Capacity- meetings and outreach	33	82	71	100	31	58	13.33	0.01	
Capacity -report on outcomes	50	73	57	67	50	58	1.70	0.79	
Capacity- analyze mgt. outcomes	50	82	79	67	44	64	6.30	0.18	
financial resources available	0	33	42	0	53	35	10.09	0.04	0.39
necessary infrastructure	17	8	17	0	13	13	1.015	0.907	0.13

MGT. TOOLS & STRATEGIES BY STAKEHOLDER

	Stakeholders (% agree)						χ^2	p-value
	SW	GW	Non-consum	Gov.	Resident	Total		
Willing to try new things	40	67	39	100	25	45	10.09	0.04
Technology is important	83	83	100	100	77	87	6.60	0.16
My group is innovative	100	67	79	100	50	71	9.79	0.04
Technologies to share.	67	64	57	67	20	49	7.90	0.10
Measurable goals	33	60	25	33	8	30	7.95	0.09
Progress evaluate by goals	17	40	17	0	8	19	4.59	0.33
Goals reflect needs	20	60	25	33	8	28	8.09	0.09
Ability to adapt	33	33	69	67	77	59	7.77	0.10
Capitalize on change	50	33	36	33	44	40	0.68	0.95

0.12

Chart 1: Historical Population 1940 to 2010: Cities and Unincorporated Areas



Source: U.S. Census Bureau, Population Division