Integrating Social Science for Adaptive Management in CBP

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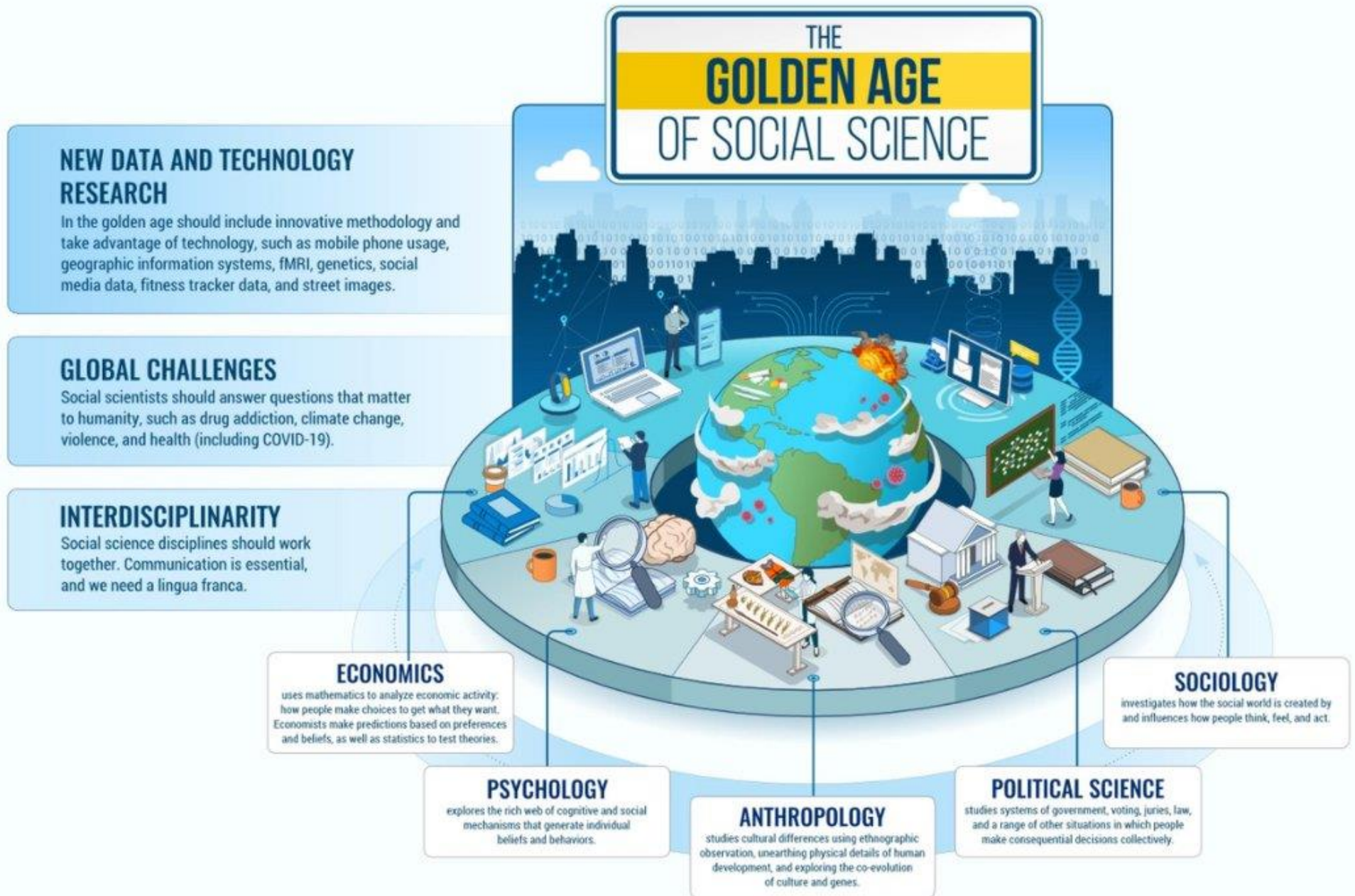
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Credit: Camerer Group/99designs (Manuel Noriega)

Why integrate social science?

THE GOLDEN AGE OF SOCIAL SCIENCE

NEW DATA AND TECHNOLOGY RESEARCH
In the golden age should include innovative methodology and take advantage of technology, such as mobile phone usage, geographic information systems, fMRI, genetics, social media data, fitness tracker data, and street images.

GLOBAL CHALLENGES
Social scientists should answer questions that matter to humanity, such as drug addiction, climate change, violence, and health (including COVID-19).

INTERDISCIPLINARITY
Social science disciplines should work together. Communication is essential, and we need a lingua franca.

ECONOMICS
uses mathematics to analyze economic activity: how people make choices to get what they want. Economists make predictions based on preferences and beliefs, as well as statistics to test theories.

PSYCHOLOGY
explores the rich web of cognitive and social mechanisms that generate individual beliefs and behaviors.

ANTHROPOLOGY
studies cultural differences using ethnographic observation, unearthing physical details of human development, and exploring the co-evolution of culture and genes.

POLITICAL SCIENCE
studies systems of government, voting, juries, law, and a range of other situations in which people make consequential decisions collectively.

SOCIOLOGY
investigates how the social world is created by and influences how people think, feel, and act.

Credit: Camerer Group/99designs (Manuel Noriega) & CalTech

Project Goals

Evaluate use of and attitudes towards social science application in CBP

Increase understanding of SS theories and interventions and the evidence for their effectiveness

Advance a dialogue about strategies to enhance social science capacity

Methods

Current CBP use of SS: Review reports and other information produced by the partnership

Evidence of what is working: Literature review & synthesis of behavioral interventions (individuals + policy actors)

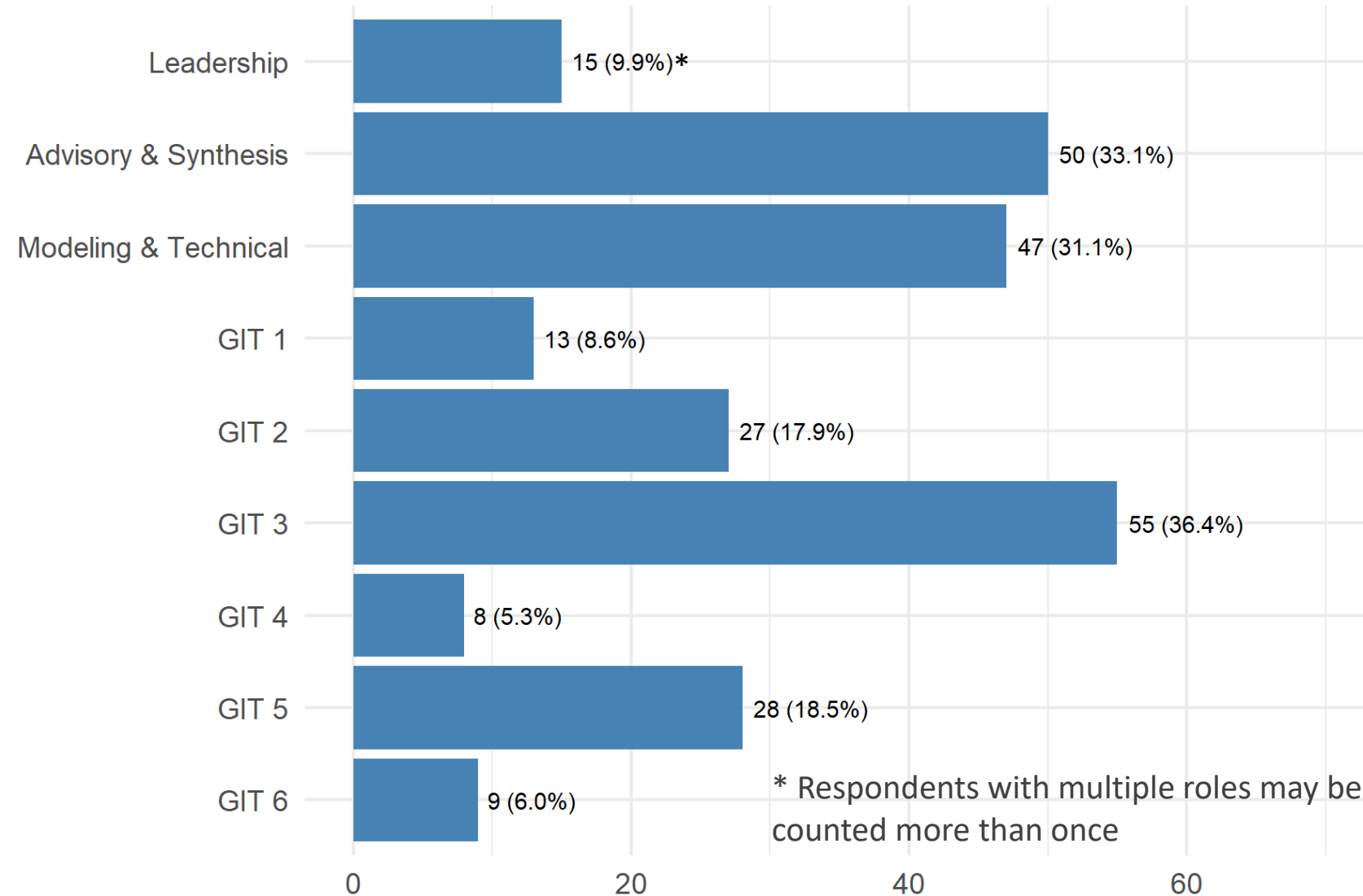**Partnership priorities and decision context:** Questionnaire and interviews

Recommendations for building capacity: Synthesize results and compare to recommendations for similar institutions

Questionnaire and Interview Representation

151 respondents (10% response rate)

Category	Value
Leadership	15 (9.9%)*
Advisory & Synthesis	50 (33.1%)
Modeling & Technical	47 (31.1%)
GIT 1	13 (8.6%)
GIT 2	27 (17.9%)
GIT 3	55 (36.4%)
GIT 4	8 (5.3%)
GIT 5	28 (18.5%)
GIT 6	9 (6.0%)

* Respondents with multiple roles may be counted more than once

30 interviews

- 20 self-selected
- 10 key informants identified by project managers

Key strengths of existing social science application

Governance structure embeds many recommended practices

Strategy Review System (SRS) reported to be effective in focusing effort in some groups

Behavioral practitioners frequently using groundwork and adaptive management (best practices)

Finding 1. Broad support for, but incomplete understanding of, social science

Finding 1. Social science seen as important, but limited understanding of its uses

The lack of engagement with social science expertise in policy-making is a key reason why many of the Bay agreement goals have not been met

Group	Strongly disagree / Disagree	Neutral	Agree / Strongly agree
Local govt	38%	38%	24%
State govt	10%	45%	45%
Fed/CBPO only	12%	38%	50%
Other	16%	29%	55%
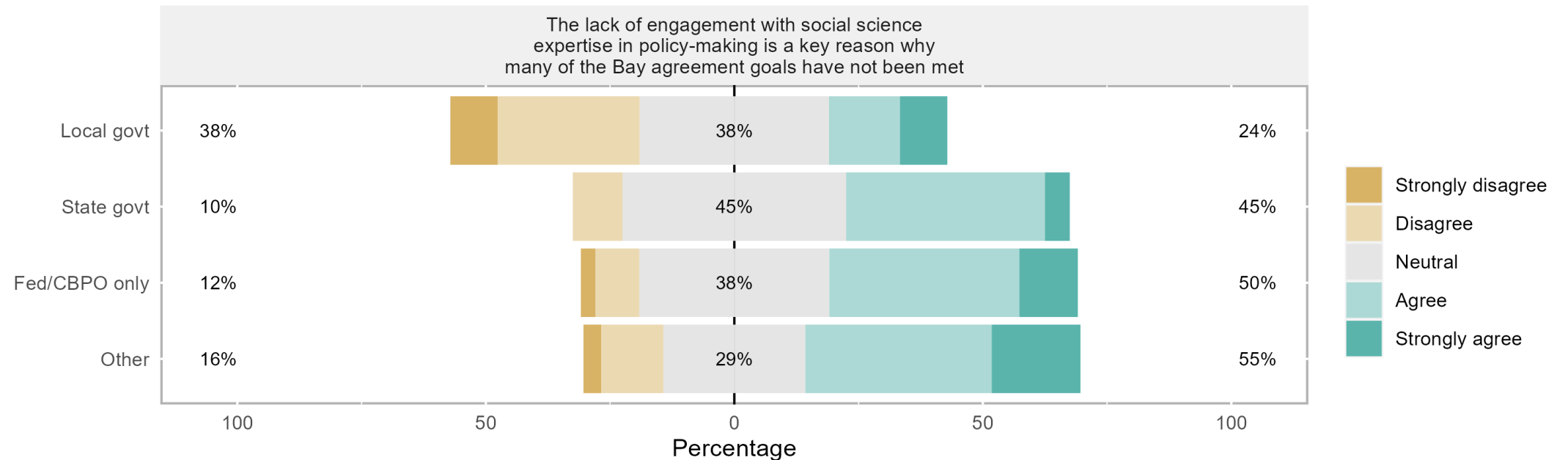
Questionnaire respondents (QR)

"Behavior change is key to success."

vs

"Social Science information should be a guidance tool … to use to understand the problems the public faces, … If the program addressed local society needs, you could have a better following and support for CBP goals."

Recommendation 1
Build social science literacy and capacity

FINDING 1
Broad support for,
but incomplete
understanding of,
social science

- Share knowledge through webinars, short courses, workshops
  - Identify impact pathways & magnitudes (applied theory)

- Invest in internal social scientist positions to promote informal learning & diffusion of ideas
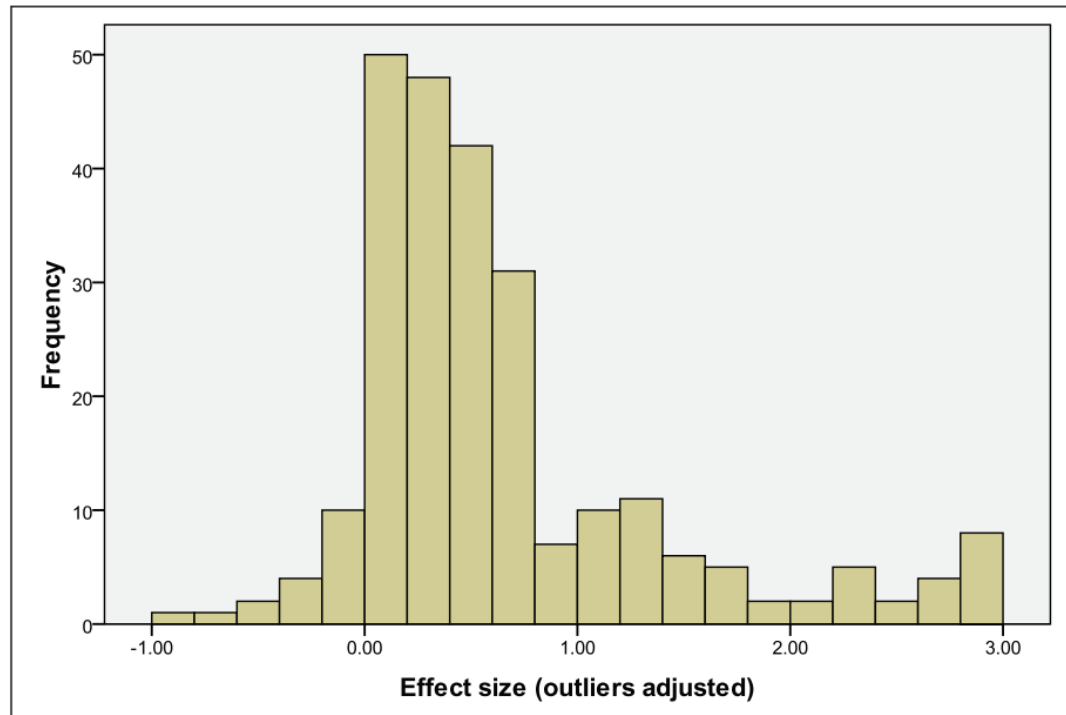- Develop a community of practice to support internal social scientists

Easier

Harder

Finding 2.Uneven use of behavioral social science evidence and performance tracking

# Finding 2. Behavioral intervention effectiveness is often small

Standard deviation of treatment group relative to control

Osbaldiston and Schott (2012)

- The majority of behavioral interventions have small effect sizes
- Efforts to transfer the approaches with high effect sizes often fail to replicate initial success
- Behavior change intervention effectiveness is context-dependent

Finding 2. Uneven use of behavioral social science evidence and performance tracking in CBP

Results of past CBP social science efforts
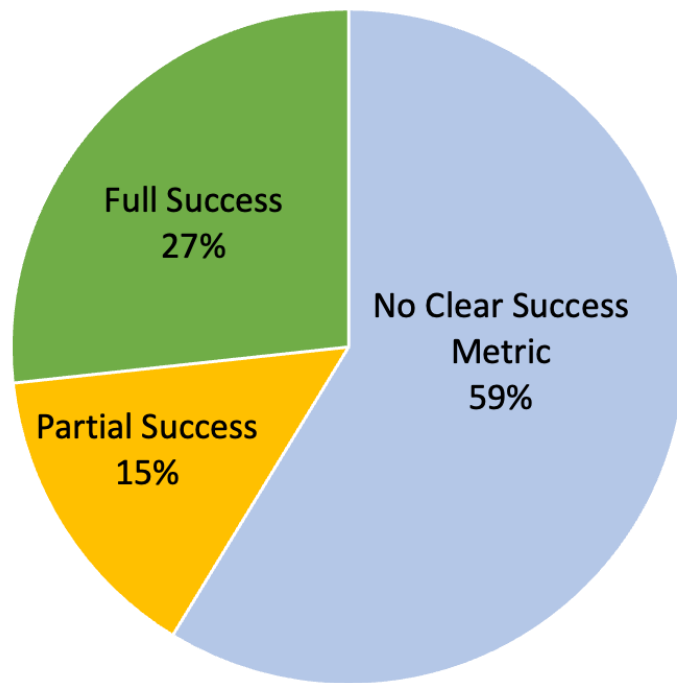
- CBP project outcomes
  - 27% reported success
  - No intervention type is consistently effective
- Most interventions
  - Did not measure outcomes
  - Did not identify a behavioral theory
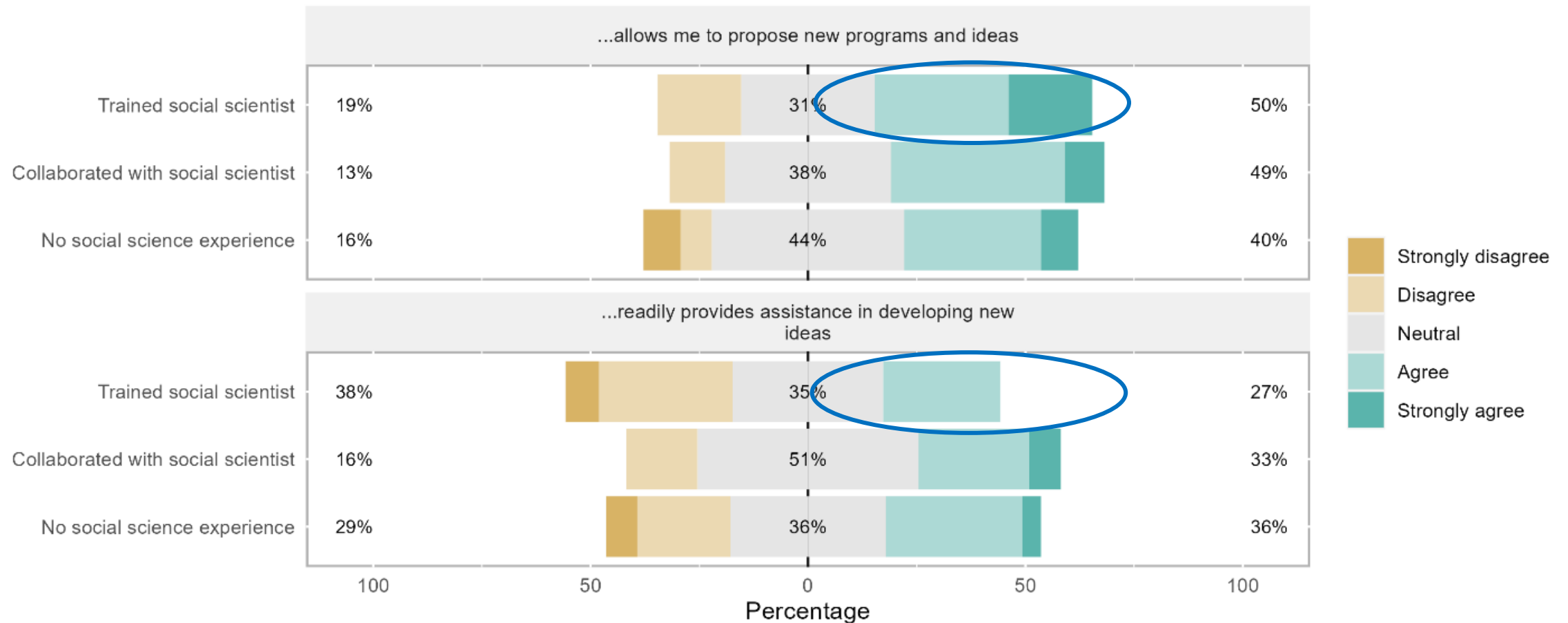
Recommendation 2
Enhance the practice of behavioral social science

FINDING 2: Uneven use of behavioral social science evidence and performance tracking

- Continue to fund projects that apply and test theory
- Evaluate opportunities for unused but promising techniques, e.g., descriptive norms and defaults
- Expand the audience beyond homeowners to business owners and policy actors to increase impact
- Design interventions as experiments to improve effectiveness over time

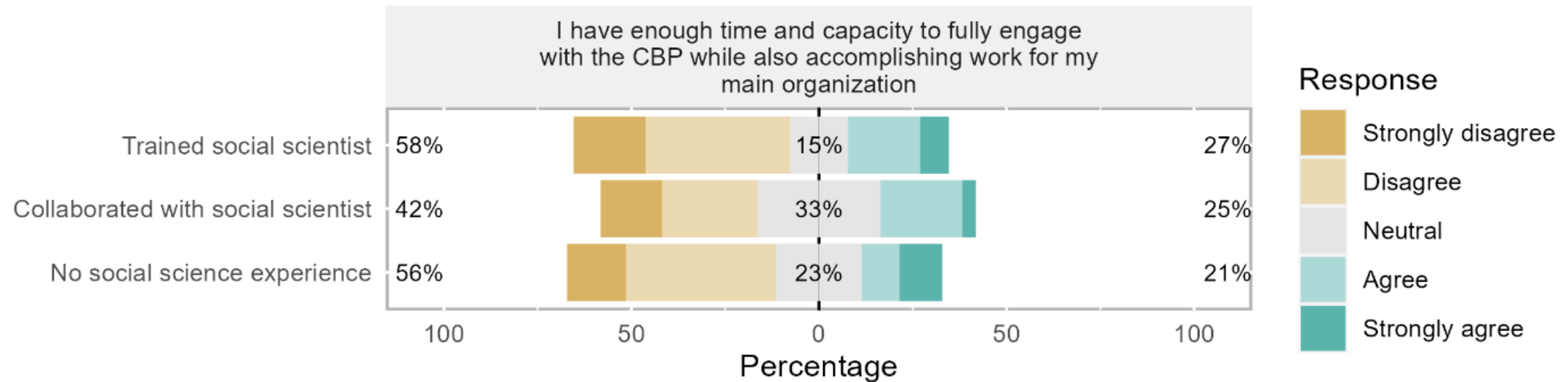- Develop funding sources for rigorous experiments that increase the evidence base

Finding 3. Missed opportunities for social science in adaptive management

Finding 3. Social science ideas supported, but resources lacking to follow through

...allows me to propose new programs and ideas

	Disagree	Neutral	Agree
Trained social scientist	19%	31%	50%
Collaborated with social scientist	13%	38%	49%
No social science experience	16%	44%	40%

...readily provides assistance in developing new ideas

	Disagree	Neutral	Agree
Trained social scientist	38%	35%	27%
Collaborated with social scientist	16%	51%	33%
No social science experience	29%	36%	36%

Legend: Strongly disagree, Disagree, Neutral, Agree, Strongly agree

Percentage

"Bottom line is social science is not required so it becomes a lower priority to mandatory...elements"– (QR)

Finding 3. Social scientists in the partnership lack capacity to conduct the needed work

I have enough time and capacity to fully engage with the CBP while also accomplishing work for my main organization

	Strongly disagree/Disagree	Neutral	Agree/Strongly agree
Trained social scientist	58%	15%	27%
Collaborated with social scientist	42%	33%	25%
No social science experience	56%	23%	21%

Response
- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

"The biggest obstacle to incorporating more social science into our work is the lack of dedicated resources to conduct this work." –(QR)

Finding 3. Underuse of social science knowledge as part of *programmatic* adaptive management

- "Social science can help to understand why certain practices or recommendations did not yield desired results and distill lessons learned that can be applied … to adaptively manage our efforts" (QR)

- "Managers may assume that they know what motivates people and may develop research products based on those assumptions, rather than getting to know the customer" (QR)

- "I feel like we get talked to a lot, and not necessarily listened to a lot." (I)

Finding 3. Underuse of social science knowledge as part of *institutional* adaptive management

"...The WIPs and the TMDL just take up so much energy that it's really hard to get the Management Board to care or do something about all the other outcomes that have been identified as priorities." (I)

"It would be great if social science could provide insights on institutional and governance structures or incentives that could motivate more action on the part of the Management Board." (I)

Recommendation 3
Use social science in adaptive management

FINDING 3: Missed opportunities to apply social science in adaptive management

- Develop co-design processes with communities where critical watershed goals are lagging
- Adapt institutional processes where barriers have been identified

- Use institutional science to explore options to improve partnership function, particularly with local and regional stakeholders
- Improve incentives for goals other than water quality using policy drivers and performance indicators

Other goals in report on adapting to climate change

Finding 4. Lack of strategic planning for social science application

Finding 4. Effort is opportunistic rather than strategic

"People have their favorite 'tool' - and are reticent to put time/energy into doing it differently - despite the evidence of the same outcomes in response to the same types of outreach." (agriculture example) (QR)

"I feel we get random acts of restoration, as opposed to taking a step back and seeing where our effort would have the greatest impact." (I)

"Evaluation science can be practical for developing strategic program frameworks, engaging appropriate stakeholders, and other things, but rarely do people want to pay for it." (I)

Example of insights from institutional science
NOAA Regional Integrated Sciences and Assessments (RISA)

- RISAs tend to reach mainly high-capacity [and local] information users, leaving large segments of society underserved

- Usable climate science is expanding faster than the RISA program can grow to meet it

- …RISAs could be more effective by facilitating extended networks among existing local bridging organizations rather than acting as centralized bridging organizations themselves

Brugger and Crimmins (2015)
http://doi.org/10.1175/WCAS-D-13-00036.1

Recommendation 4
Foster institutions that strategically apply social science

FINDING 4: Lack of strategic planning for social science application

- Develop a detailed strategic plan to enhance the impact of social science funding
- Create an organizational structure that effectively implements a social science strategy

- Create a process to periodically update and adapt the social science strategic plan

Additional recommendations in report

Some potential priorities

1. **Initial steps towards social science integration**
   - Learning opportunities
   - Strategic planning

2. **Increase social science effectiveness**
   - Specific and evidence-based advice for program design
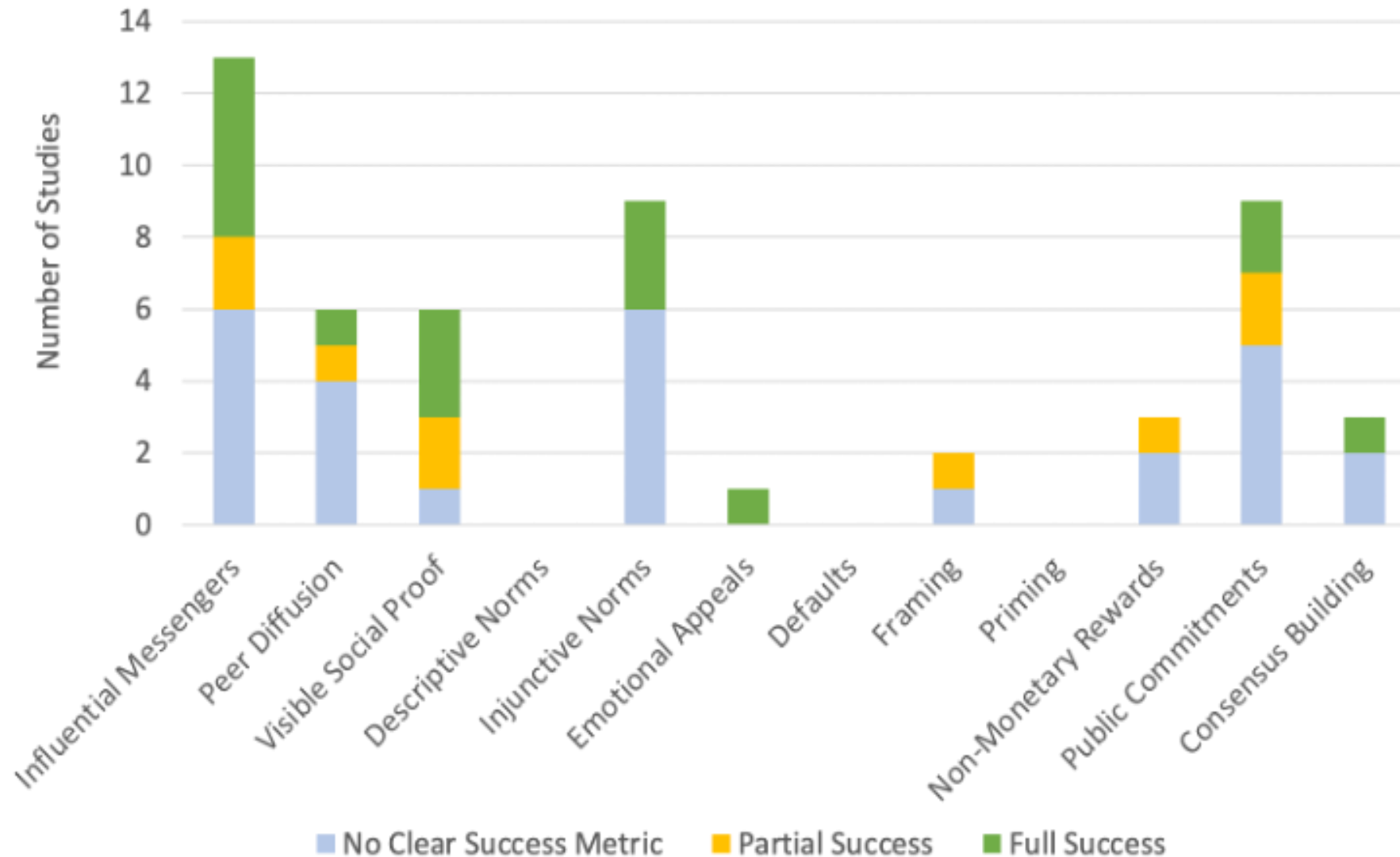   - Design interventions as experiments

3. **Social science contributes to adaptive management**
   - Co-development of objectives and methods with communities
   - Leverage networks

Detailed slides
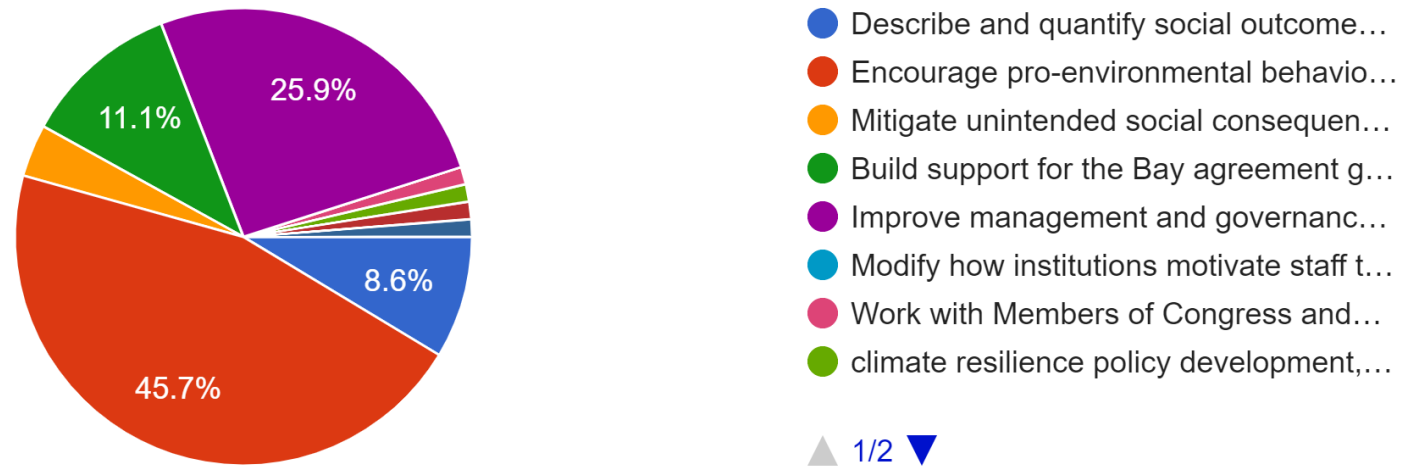
G-ITM Model of Behavior Change
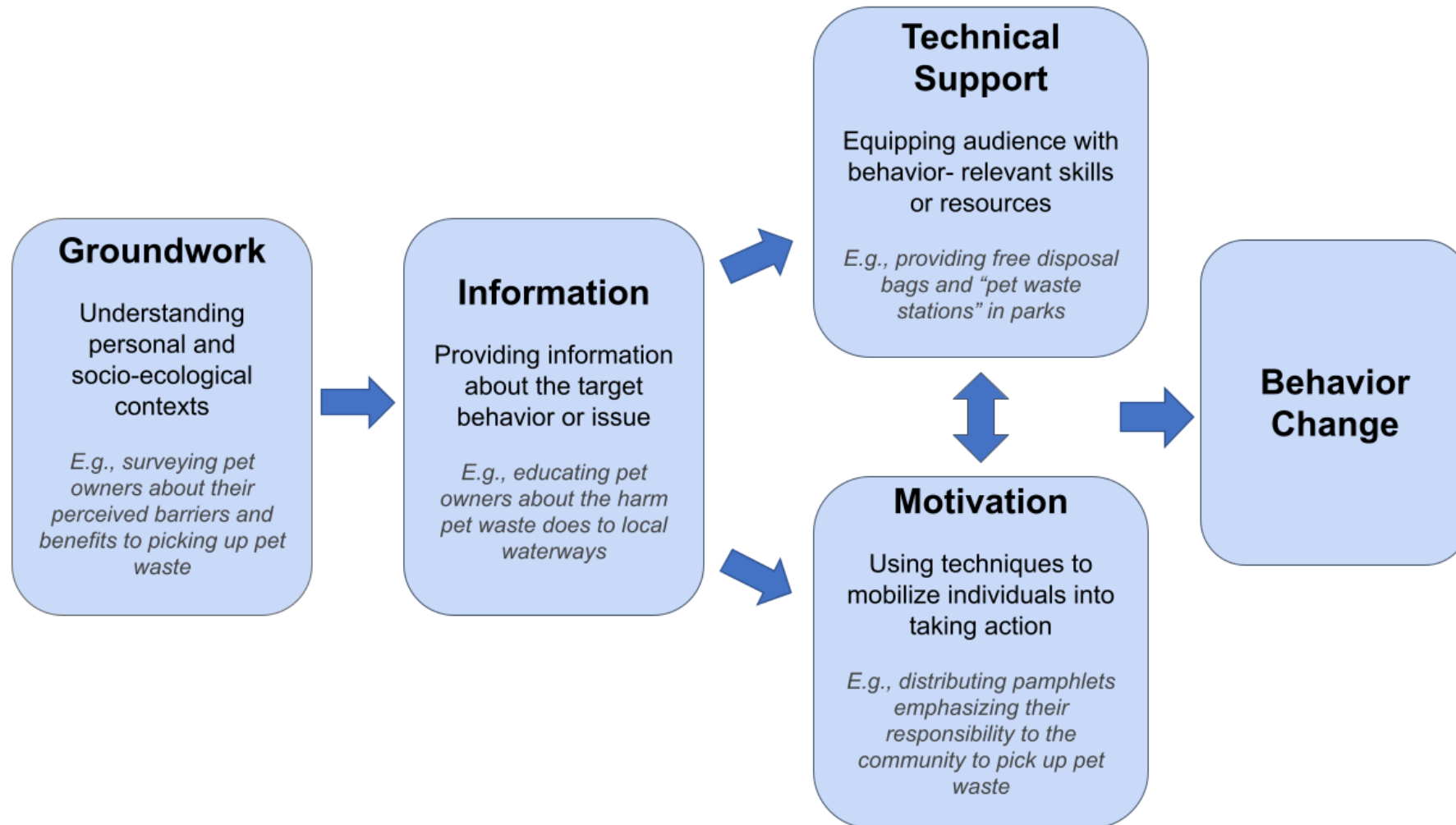
Finding #2. Past SS Efforts

Social science being used in the CBP

10. Which of the following best describes the goal of your experience using social science?

81 responses

- Describe and quantify social outcome…
- Encourage pro-environmental behavio…
- Mitigate unintended social consequen…
- Build support for the Bay agreement g…
- Improve management and governanc…
- Modify how institutions motivate staff t…
- Work with Members of Congress and…
- climate resilience policy development,…

1/2

"Behavior change is key to success." Questionnaire Response (QR)

vs

"Social Science information should be a guidance tool … to use to understand the problems the public faces, … If the program is focused with local society needs addressed, you could have a better following and support for CBP goals." (QR)

Finding 3. Local governments feel the least empowered to adapt and innovate