TERAA: Teamwork for Effective Research Action in the Americas

The following survey has been designed as part of the seed-grand project Strengthening Teamwork to Confront Socio-Ecological Challenges: Generating New Knowledge for Effective Action in the Americas, funded by the Inter-American Institute for Global Change (IAI). The purpose of this survey is to learn more about your perspectives regarding interdisciplinary (ID) and transdisciplinary (TD) research and teamwork process. For more details about this project or for any inquiries or concerns about the questions included in this survey please contact the P.I., Lily House-Peters, at lilyhp@email.arizona.edu. Thank you for your time.

We have asked you to answer this survey because you are/have been part of an ID/TD IAI project. Please answer this survey based on your experience in that project.

DEMOGRAPHIC QUESTIONS:

1. Please select the IAI funded project you were involved with and on which you will be basing your answers.

2. Gender:
A. Male
B. Female

3. Range of years in which you were born:
A. 1940-1950
B. 1951-1960
C. 1961-1970
D. 1971-1980
E. 1981-1990

4. Write the number of years involved in ID/TD research.

5. Select the languages you are fluent in:
A. English
B. Spanish
C. Portuguese
D. French
E. Other (Please add the language)

SECTION I: ADDRESSING THE SCIENCE_POLICY GAP AND EFFECTIVE ACTION

In this section of the survey we focus on obtaining information regarding the use of knowledge for effective action. We are interested in obtaining relevant information, which will help identify the barriers of effectively translating science production into policy action.

Justification: Effective action is adapted from the frameworks presented in Olsen et al. (1997) and Olsen (2003), the three orders of outcomes allow us to measure

and distinguish among different levels of team performance, based on the success of the outcome in translating science for SES policy solutions (i.e. science production; policy integration; visible solutions).

1. Please select one or more of the following categories in relation to your participation in your corresponding ID/TD project (research scientist or policy maker) and select the option that best describes your position.

Research scientist	Policy Maker
¿What is your position in the chain of command of your institution	¿What is your position in the chain of command in your institution
□ Senior □ Middle □ Junior □ Student	□ High-Level official *(e.g. Minister, Mayor)* □ Medium-Level official *(Director of your division)* □ Low-level official *(Technical assistance, professional)*

Please rank the factors below based on their importance to your team's success in three types of outcomes: scientific impact, policy impact, and social-ecological system (SES) management impact.

	Team Outcomes		
Item	Scientific Impact (priority 1-12)	Policy Impact (priority 1-12)	SES Impact (priority 1-12)
1. Previous experience with the team members			
2. Face to face interaction			
3. Joint training activities			
4. Trust			
5. Strong leadership from the PI			
6. Strong leadership shared by the PI and Co-PIs			
7. Presence of a mix of physical scientists, social scientists, and engineers, on the team			
8. Presence of practitioners and stakeholders on the team			

9. Academic incentives			
10. Policy incentives			
11. Prestige of the team			
12. Openness of team members to take risks			

1. What is your level of interest in the project?

□ Very high □ High □ Medium □ Low □ Very low

2. Did your project team produce any of the following deliverables or are any of the following listed as as goals in your project?

	Yes	No
Technical meetings to extend scientific knowledge for stakeholders and decision makers.	□	□
By incorporating the knowledge resulting from the findings of the project, resource management has been impacted.	□	□
As a result of the knowledge created in the project, new public policies have been created and implemented.	□	□
As a result of the knowledge generated as a result of the research project, solutions to ground-level problems have been useful for sectors within the region where the project was located.	□	□

3. Could you estimate the percentage of items that have been produced by the research/resulted from the project or are listed as goals in your project?

	0-20%	20-40%	40-60%	60-80%	80-100%
Published articles in public media outlets	□	□	□	□	□
Published articles in peer-reviewed academic journals	□	□	□	□	□
Books and book chapters					
Publications for decision makers	□	□	□	□	□
Publications for stakeholders	□	□	□	□	□
MSc and PhD Thesis	□	□	□	□	□
GIS Maps	□	□	□	□	□
Databases	□	□	□	□	□
Public Communications	□	□	□	□	□
Outreach Products	□	□	□	□	□

4. Of the following reasons why a scientist might work on a research project, to what degree was each a factor in your choice to work on your IAI project?. Please select the degree of motivation and/interests to work on the project.

	High	Medium	Low	No

Develop tools for decision makers and interested parties to solve issues associated to global change	☐	☐	☐	☐
To contribute to solving environmental projects				
To work in an international team				
To work in an ID/TD team				
Opportunity to travel internationally	☐	☐	☐	☐
Building knowledge networks	☐	☐	☐	☐
Opportunity to publish	☐	☐	☐	☐
Tenure, promotion or raises	☐	☐	☐	☐
Personal economic benefits	☐	☐	☐	☐
Research interest in the subject	☐	☐	☐	☐
Intellectual challenge of the research	☐	☐	☐	☐
Desire to make changes in institutional, legal, and political frameworks	☐	☐	☐	☐
Other:				

SECTION II: Teamwork

In this section we assess the cognitive, conative and affective dimensions of teamwork both from an individual and a collective perspective.

Justification: In this section we assess the cognitive, conative, and affective dimensions of teamwork both from an individual and a collective perspective. The cognitive dimension is defined as a person's preferred way of gathering, processing and evaluating information The attributes for the cognitive dimension that we include here are: 1) mental models which we understand as the mechanisms whereby humans are able to generate descriptions of systems, explanations of system functioning and predictions of future system states and, 2) decision-making which we understand as the individual's and team's strategies used to surmount obstacles and produce successful outcomes. For assessing the conative dimension, we evaluate as an attribute: the mental process that activate and/or direct behavior and action. We attempt to measure both motivation and intention. Finally, for the affective dimension, we rely on two attributes: trust and supportive behavior. The former attribute measures affective links between members of teams and the latter assesses team member's support for task completion.

Questions 1-15 in this section are based on a scale from 1-5, where:

1	Strongly Disagree
2	Disagree
3	Undecided
4	Agree
5	Strongly Agree

Please check the box that best represents your opinion.

	1	2	3	4	5
1. ID/TD research is necessary.	☐	☐	☐	☐	☐
2. ID/TD projects can be successful only if all team members actively participate.	☐	☐	☐	☐	☐
3. It is important to know the responsibilities of others in the project.	☐	☐	☐	☐	☐
4. I know the responsibilities of others in my project.	☐	☐	☐	☐	☐
5. If coming from different backgrounds, members should adjust their disciplinary tools or learn new ones.	☐	☐	☐	☐	☐
6. As a result of working on this team , I have learned about tools that other team members use.	☐	☐	☐	☐	☐
7. In-person communications with other members of the team are essential.	☐	☐	☐	☐	☐
8. Decisions about the project are better when made exclusively by the P.I.	☐	☐	☐	☐	☐
9. Decisions about the project often conflict with my own work schedule.	☐	☐	☐	☐	☐
10. I try to organize my schedule to be present for every meeting and important session of this project.	☐	☐	☐	☐	☐
11. I enjoy working on the project and often spend extra-time thinking about the project	☐	☐	☐	☐	☐
12. The team meets at least once a month to discuss the project	☐	☐	☐	☐	☐
13. I often ask team members for assistance (ex. resources, overcome obstacles to completing tasks)	☐	☐	☐	☐	☐
14. I have learned new skills as a result of being a part of an ID/TD team.	☐	☐	☐	☐	☐
15. My perspective on how to solve problems has changed in a positive way following this teamwork experience.	☐	☐	☐	☐	☐

SECTION III: SCENARIOS

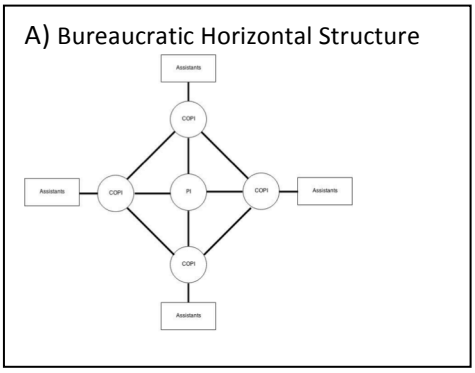
Justification: We employ a model that uses 'scenarios' as a stimulus for authentic activity (real-world situations). The use of scenarios is rooted in the epistemological principles of constructivism and situated cognition (Naidu, 2007; Jonassen, 2011; Koh, 2013). We draw from literature on educational assessment to develop scenarios and self-appraisal examples to explore how participants will respond to manufactured situations (Naidu, 2007). Our choice for scenarios was

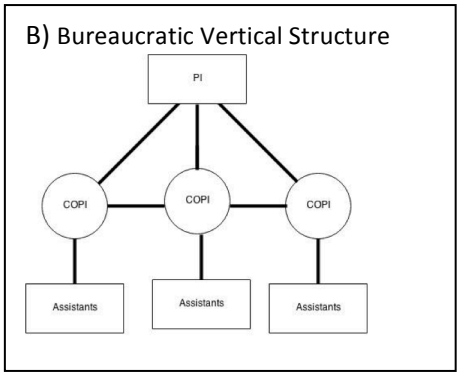
motivated by our desire to foreground the centrality of responses based on and grounded in hypothetical situations.

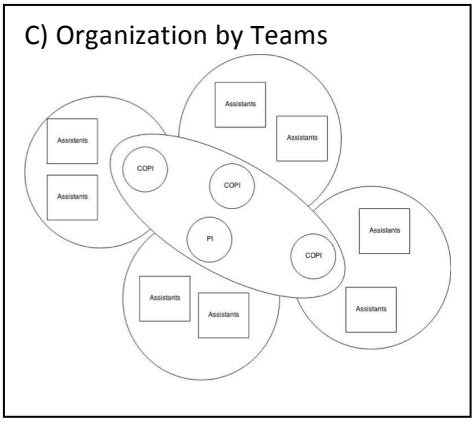
In contrast to traditional models, this approach to collecting information gathers data by exposing the participant to real-world environments and assessing problem solving skills and action-responses. The innovation we are developing through this approach is to incorporate these types of questions as a way to analyze team dynamics in a survey format. Scenarios allow us to obtain information about the dynamic follow-through of a participant's ongoing decisions to address issues in teamwork including: leadership style, problem-solving approaches, team performance, and conflict resolution.

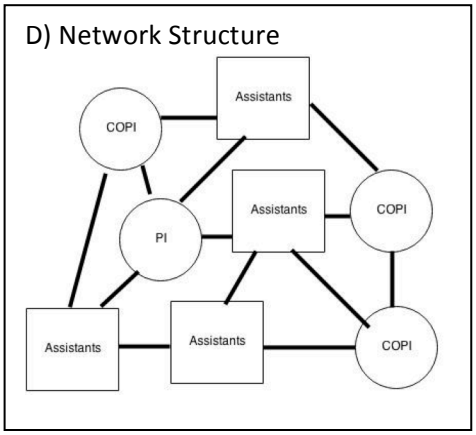
For questions in this section, please choose the alternative "other" ONLY in case none of the previous alternatives matches the way you would proceed.

1. Please select the team structure that best describes the leadership style of your current project:









2. You have been working with a research team for two years, you know most of the people from before this experience and you are all finding the project very interesting and appealing. A deadline is coming up but not all the team members have the same time availability to work on the products, how would you approach the problem:

A. I do not see this situation as a problem.

B. I would wait until the PI decides what to do and follow the PI's approach to the issue.

C. I would tackle the products that directly involve my discipline and responsibility and wait and see what the others do.

D. I would tackle the products that directly involve my discipline and responsibility and assist the team members that have no time to do theirs.

E. I would suggest having a team meeting to talk this over and redistribute tasks according to time availability.

F. Other:

3. You are part of a research team that is working on putting a proposal together for a research grant. For this proposal you have been called to join the team only one week before the submission deadline. You have never worked with any of the members before and feel that it's hard to generate agreements in the team and you feel the deadlines are making everyone very irritable. How would you approach this issue?

A. I think the rest of the team should figure out how to solve the problem since I was called to join at the last minute.

B. I would bring this topic up in the next meeting and try to understand how the rest of the team feels about this.

C. I lack sufficient time to get involved in a way that would solve this situation, and given the problems I would rather leave the project.

D. I would talk to the PI in a private meeting and let him/her know how I feel and try to work something out.

E. I would try to figure out the reason why the team is having a hard time reaching a consensus in hope of being able to bring the team members together.

F. Other:

4. You are a scientist on a TD research team that is working with local stakeholders in a community in a foreign country. In the process of generating a common framework you have decided to include the stakeholders but the discussion is leading nowhere because the stakeholders are having significant difficulties understanding scientific concepts. How would you proceed?:

A. I think it is not my role to integrate stakeholders in research activities.

B. I think social scientists are the ones who should lead these kind of processes.

C. I would take the time to develop a one-day seminar to explain the concepts in a simple and accessible way for stakeholders.

D. I would wait for the PI to make a decision.

E. I would bring the issue up in a group discussion and try to find a solution with all the participants.

F. Other:

5. You are participating in an ID research project and the funding agency requires of your team a series of scientific and non-scientific products such as: papers, MSc Thesis, PhD Thesis, GIS maps, databases, public communications, outreach, and policy impacts. You have suffered a major setback in the research and have realized with the rest of the group that you will not be able to deliver all of the promised products. After the negotiation with the funding agency, your group was asked to write a prioritized list of products and work towards getting as much done as possible. How would you prioritize the following deliverables?:

Item	Priority number (1 to 9)
1. Scientific publications for public distribution	
2. Scientific publications in academic journals, books and book chapters	
3. Technical publications for decision-makers	
4. MSc and PhD Thesis	
5. GIS Maps	
6. Databases	
7. Public communications	
8. Outreach products	
9. Policy-oriented products	

6. You are analyzing whether you should join a new research group that will be funded by an international research organization. Rank the following aspects you would consider in order of importance for your decision to either accept or decline joining the group:

Item	Priority number (1 to10)
1. Previous experience with the team members	
2. Incentive of receiving personal benefits for tenure and promotion, election to office or raises	
3. Interest in the issue to be researched	
4. Challenge of the research	
5. Possibility of generating positive change in socio-ecological systems.	
6. Possibility of generating changes in institutional, legal, and political frameworks	
7. Developing tools for use by decision-makers and interested parties to solve global change problems	
8. Opportunity for international travel	
9. To generate knowledge networks	
10. Professional growth	

Thanks for your time! Please add any other comments or observations regarding the survey.