Supplemental 2.

**Section I – background & consent**

**Q1**

The purpose of this study is to document the applications of satellite-based early warning and alert systems and the barriers to their use. The results of this study will include a set of recommendations to improve access and facilitate the use of these systems for sustainable land management.

This survey should take you less than 15 minutes to complete.

Your participation in this study is voluntary. There is a less-than-minimal risk of participating in this study as the collected information is not sensitive. The researchers will follow best practices to secure the confidentiality of the participants and their responses. The information will remain confidential and will not have any identifying information associated with it. You may skip any questions that you do not want to answer. If you decide to take part, you are free to withdraw at any time, and your information will not be used in the study.

**Q2**

Please give your consent to participate in this study by checking the boxes after the statements below.

* I have been informed that my participation in this research study is voluntary.
* I understand that any information learned and collected from this study in which I might be identified will remain confidential and will be disclosed ONLY if I give permission.
* **I agree to participate in this study.** Consenting to participate in this research also indicates my agreement that all information collected from me individually may be used by current and future researchers in such a fashion that my identity will be protected. Such use will include presentations at scientific or professional meetings, publishing in scientific journals, and sharing anonymous information with other researchers to check the accuracy of study findings and for future approved research that has the potential to improve human knowledge.

**Q3**

This research complies with UMBC's Institutional Review Board. A representative of that Board, from the Office for Research Protections and Compliance, is available to discuss the review process or my rights as a research participant. The Office's contact information is +1 410- 455-2737 or compliance@umbc.edu.

**Section II – About participants**

**Q4**

This study investigates satellite-based early warning and alert systems for conservation applications. These systems monitor environmental change and rapidly disseminate alert information. The time frame for alert delivery can range from hours to several weeks. Please choose the answer that best fits your experiences using these systems.

**Q5**

Choose the country where you reside.

**Q6**

How would you describe your gender?

* Female
* Male
* Self-describe [ ]
* I prefer not to say

**Q7**

What is your ethnicity?

* Person of Indigenous descent [includes all peoples who self-identify as Indigenous, Aboriginal, Torres Straits Islander, Native Hawaiian, Pacific Islander, American Indian]
* Descendant of enslaved Africans
* African descent
* Asian descent
* European descent
* Mixed race
* Other
* I prefer not to say

**Q8**

Choose which sector best describes your profession below. [Select multiple]

* + Academia
  + Government
  + For-profit / Commercial
  + Not-for-Profit/ Non-Governmental Organization
  + Community Organizer/Member
  + Other [fill in]

**Q9**

How long have you been working in your profession?

* + Less than five years
  + Between five and ten years
  + More than ten years

**Q10**

Where is the domain of your work/research focused geographically?

* + Global
  + Regional
  + National or sub-national

**Q10a**

**[if the answer to Q10 is "Regional"]**

Which geographic region is the focus of your work?

* + Africa
  + Americas
  + Asia
  + Australia/Asia Pacific
  + Europe
  + Arctic
  + Other

**Q10b**

**[if the answer to Q10 is "Country select…"]**

Which country is the focus of your work?

**Q11**

In which biome is your work/research focused?

Never, Sometimes, Most of the time

* + Tropical forests/woodlands
  + Temperate forests/woodlands
  + Savannahs/grasslands
  + Steppe/high elevation
  + Wetlands
  + Coastal ecosystems
  + Boreal/artic

**Q12**

**[edits this question in the HTML View editor]**

<span title=" These tools use satellites to monitor ecosystem threats (fires, floods, deforestation ...) and disseminate alert information when threats are detected. The timeframe for the alerts can be within hours to several weeks for the incident."> Which of the following best describes your knowledge about satellite-based monitoring and alert systems?</span>

* Expert
  + Very familiar
  + Somewhat familiar
  + Not familiar

**Q13**

Which selection best describes your use of satellite-based early warning and alert systems?

* <span title=" A person who uses (or wants to use) these systems to directly mitigate and manage ecosystem threats or makes decisions about how to respond or who should respond "> User </span>
* <span title=" A person who generates data products and system platforms "> Product/system developer </span>
* <span title=" A person who trains people on how to use the systems ">Trainer/educator</span>
* <span title=" A person who studies these systems ">Researcher</span>
* <span title=" A person who supports the use of these tools through communications, financial support, or is simply enthusiastic about the systems ">Advocate</span>
* Other [fill in]

**Q14a**

**[if the answer to Q10 is "User"]**

As a user, which of the following best describes your role? Select all that apply.

* + Emergency responder
  + Farmer/landowner
  + Citizen
  + Law enforcement
  + Community liaison
  + Community monitor
  + Patroller
  + Incident command
  + Informant
  + Policymaker
  + Other [fill in]

**Q14b**

**[if the answer to Q10 is "Product/system developer"]**

As a product/system developer, which of the following best describes your role? Select all that apply.

* + Algorithm developer
  + System support technician
  + GIS technician
  + Platform/product developer
  + Platform/project manager
  + User engagement
  + Other []

**Q14c**

**[if the answer to Q10 is "Trainer/educator"]**

As a trainer/educator, which of the following best describes your role? Select all that apply.

* + Project/team manager
  + Educator
  + Trainer
  + Researcher
  + Other []

**Q14d**

**[if the answer to Q10 is "Researcher"]**

As a researcher, which of the following best describes your field? Select all that apply.

* Computer science
  + Remote sensing
  + Decision support
  + Ecology/conservation
  + Disaster risk reduction
  + Policy
  + Other [fill-in]

**Q14e**

**[If the answer to Q10 is "Advocate"]**

As an advocate, which of the following best describes your role? Select all that apply.

* + Academic/student
  + Policymaker
  + Program director/manager
  + Organization/Institution executive
  + Journalist
  + Social Media/blogger
  + Donor/funder
  + Enthusiast
  + Other []

**Q15**

Please write in the satellite-based early warning and alert systems that you use or develop. If you don't use any, just write "NA."

For example,

Queimadas, SATFRIO, DETER, GFW GLAD, FIRMS, Firecast, …

**Q16**

**["If the answer to Q10 is NOT "Product/system developer"]**

How were you introduced to the satellite-based early warning and alert systems you use? Select all that apply.

* + Training course/class
  + A colleague
  + News
  + Social media
  + <span title="website, internet search"> Internet </span>
  + <span title=" conference, workshop, webinar "> Meeting </span>
  + <span title=" report, scientific literature, white paper "> Publication </span>
  + Other [fill in]

**Section III – Decisions/actions**

**Q17a**

**["If the answer to Q10 is NOT "Product/system developer"]**

What are you monitoring/managing with satellite-based early warning and alert systems? [Select all that apply]

* + Forest clearing
  + Ecosystem degradation
  + Mining
  + Fires
  + Logging
  + Flooding
  + Landslides
  + Biodiversity
  + other [fill in]

**Q17b**

**["If the answer to Q10 is "Product/system developer"]**

What are users monitoring/managing with your satellite-based early warning and alert system(s)? [Select all that apply]

* Forest clearing
* Ecosystem degradation
  + Mining
  + Fires
  + Logging
  + Flooding
  + Landslides
  + Biodiversity
  + other [fill in]

**Q18a**

**["If the answer to Q10 is NOT "Product/system developer"]**

For what applications do you use satellite-based early warning and alert systems? [Select all that apply]

* + Informing land-use policies
  + Patrolling
  + Active fire management
  + Fire prevention
  + Law enforcement
  + Emergency response
  + Community engagement
  + Public awareness
  + Education
  + Community-based monitoring
  + Evidence of land use violations
  + Other:

**Q18b**

**["If the answer to Q10 is "Product/system developer"]**

What are the applications for your satellite-based early warning and alert system(s)? [Select all that apply]

* + Informing land-use policies
  + Patrolling
  + Active fire management
  + Fire prevention
  + Law enforcement
  + Emergency response
  + Community engagement
  + Public awareness
  + Education
  + Community-based monitoring
  + Evidence of land use violations
  + Other:

**Q19**

**["If the answer to Q10 is NOT "Product/system developer"]**

How would you describe the setting where you use satellite-based early warning and alert systems? [check all that apply]

* + Urban area
  + Rural community
  + Remote area
  + Other [fill in]

**Q20a**

**["If the answer to Q10 is NOT "Product/system developer"]**

How often do you respond to the information from satellite-based early warning and alert systems?

* + Multiple times a day
  + Daily
  + Weekly
  + Monthly
  + Rarely

**Q20b**

**["If the answer to Q10 is "Product/system developer"]**

On average, how often do you think your system's users respond to the information they receive?

* + Multiple times a day
  + Daily
  + Weekly
  + Monthly
  + Rarely
  + Not sure

**Q21**

When you receive alert information, what actions do you take with it?

* + [text box]

**Q22**

How critical is the following alert information to inform the actions you (or your system's users) take?

Not needed, Useful, Critical

* Extent of damage
* Cause
* Responsible Party
* Exact date of incident
* Exact time of the incident
* Satellite source
* Accuracy/confidence measure
* Other [write-in]

**Q23**

**["if the answer to Q10 is NOT "Product/system developer"]**

If you receive information and cannot act upon it. What are the reasons why?

* + I don't have the authority to act
  + I don't have the resources (equipment, personnel to act)
  + It's not my responsibility to act
  + I don't receive the data timely enough to act
  + The data are not reliable
  + The data is difficult to interpret
  + Other (please specify)
  + Not Applicable

**Q24**

What is the process for using the alert information to enforce land-use policies/laws, and who is responsible for carrying it out?

* + [write in]
  + I don't know
  + Not Applicable

**Q24b**

What do you notice are the challenges to effective enforcement procedures?

* + [text entry]

**Section IV – Evaluations**

**Q25**

Overall, how useful are satellite-based early warning and alert systems for informing land management decisions?

* Very useful
* Moderately useful
* Not useful at all
* Not sure

**Q26**

In general, how reliable is the alert delivery from the system you use (or operate)?

* + Extremely reliable
  + Moderately reliable
  + Not very reliable

**Q27**

In general, how accurate is the alert information from the system you use (or operate)?

* + Very accurate
  + Moderately accurate
  + Not very accurate

**Q28**

Overall, how "user-friendly" are the systems you use or operate?

* Easy - anyone can use the site
* Moderate – site requires practice to use
* Difficult – site requires training to use

**Q29**

**["if the answer to Q10 is NOT "Product/system developer"]**

Which of the reasons below may prevent you from acting upon the information received in alerts (select all that apply)

* + Connectivity (broadband or cellular)
  + Language of alert text
  + Alert information is not received in time to make decisions
  + Alert information delivery is not reliable
  + Alert information is not accurate
  + Alert information is not clear
  + Alert information is not detailed enough
  + You receive too many alerts
  + Other [write in]

**Q30**

How would you improve the alert information from satellite-based early warning and alert systems to make the information more useful for decision-making?

* + [text box]

**Q31**

How do you provide or solicit feedback to improve satellite-based early warning and alert systems? Check all the apply.

* + Direct feedback through email or other communications
  + Online survey
  + Workshop/capacity-building event
  + System/tool website
  + I have never provided or solicited feedback
  + Other [write in]

**Q32**

**["if the answer to Q10 is "Product/system developer"]**

Which metrics best capture the use of your system for conservation decision-making? Please add and rank the metrics that you use. [1 = most useful ]

* + Number of subscribers/users
  + Number of webpage views
  + Trending on social or news media
  + Number of people following or 'likes' on social media
  + Number of people trained
  + Number of new subscribers/users
  + Add metric here [fill in]
  + Add metric here [fill in]
  + Add metric here [fill in]
  + Add metric here [fill in]

**Q33**

FINAL Question :

What do you see are the most significant opportunities to apply satellite-based early warning and alert systems for conservation applications?

* + [fill in]

**Q34**

If you are willing to provide more information to inform this study, please enter your email address. Your email address will not be shared or used for any other purpose.

[text box]

Appendix C.

*Interview questions for Developers of CEAS*

**Opening**: Before we begin, I want to remind you that this interview is being audio recorded for research purposes. I just want to confirm with you that you have received and read the informed consent form and that you agree to participate in this study.

The purpose of this study is to understand the barriers decision-makers face in using satellite-based early warning and alert systems for conservation applications. This information will help inform strategies for increasing tool access and use and evaluating how the tool contributes to conservation outcomes. I appreciate how your experiences can help inform how to improve satellite-based monitoring and alert systems.

This interview is divided into **three** parts, and I expect the interview will last 30-45 minutes to complete.

**PART I.**

**With this first part, I’m going to ask some questions about you and your experiences operating a satellite-based monitoring tool to aid land management decisions in response to ecosystem threats. These threats can be natural disasters such as wildfires, landslides, droughts, and floods; or more human-induced pressures, such as fires, logging, land degradation, and deforestation.**

1. What is your current position within the organization where you work? How long have you worked with this organization - and in what other capacities?
2. What experiences or positions did you hold before working with this organization that prepared you for the work you do now?
3. What is the system you currently support, and how long has your organization had this system in place?
4. How large is the team that supports system operation?
5. Do you see any challenges to the long-term sustainability of your tool?
   1. Do you have long-term institutional support?
   2. How does the organization financially support the system?
6. If you feel there are challenges to the long-term sustainability of the tool, in which ways have you tried to address these challenges?

**PART II.**

**For Part Two, I’m going to ask you questions about how people use your tool and the types of decisions they make with them.**

1. Can you describe who uses your tool and in what type of work environment (office, field, community, urban, remote ...)?
2. What kinds of decisions do these users make with the information from your tool?
3. Can you describe a successful application of your tool?
   1. Which factors do you think made this particular case successful?
4. Can you describe any unexpected applications of your tool? And do you think these could be applied more broadly?

**PART III.**

**Now we are on to Part Three. I’m going to ask you questions about how you design your tool and make tool improvements.**

1. Can you describe some challenges your users may face in using your tool?
2. How do you engage your users to inform your tool design or improvements?
   1. Can you give examples of approaches that worked well?
   2. Can you give examples of approaches that did not work?
3. Can you identify approaches that may help users make better decisions with your tool?
   1. Which approaches are related to technology enhancements? These include enhancements to improve data & systems.
   2. Which approaches are not related to technology?
   3. What are the barriers or challenges to implementing these approaches?
4. I’ve finished with the questions I set out to ask. Is there something that I didn’t ask that you would like to talk about related to your tool or tool development more generally to improve decisions that can result in positive conservation outcomes?

Thank you for taking the time to participate in this study. I truly appreciate your contribution to this research.

*Interview questions for Users of CEAS*

Opening: Hi, [name]. Thank you for taking the time to meet with me today. Before we begin, I want to remind you that this interview is being audio recorded for research purposes. I just want to confirm with you that you have received and read the informed consent form and that you agree to participate in this study.

[wait for verbal agreement]

The purpose of this study is to understand the barriers decision-makers face in using satellite-based early warning and alert systems for conservation applications. This information will help inform strategies for increasing tool access and use and evaluating how the tool contributes to conservation outcomes. I appreciate how your experiences can help inform how to improve satellite-based monitoring and alert systems.

This interview is divided into **four** parts, and I expect the interview will take no more than one hour to complete.

**PART I.**

**With this first part, I’m going to ask some questions about you and your experiences using satellite-based monitoring tools to aid land management decisions in response to ecosystem threats. These threats can be natural disasters such as wildfires, landslides, droughts, and floods; or more human-induced pressures, such as fires, logging, land degradation, and deforestation.**

1. How long have you worked at your current organization? What is your current position in the organization? What prior positions have you held there?
2. Describe the type of training or work experience they had prior to coming to this organization that prepared them for their current position.
3. What country do you currently work in? What regions of the country?
4. Does your scope of work include other countries or regions?
5. Can you describe your work environment in terms of how many people you interact with routinely and your access to technology and the internet?

**PART II.**

**For Part Two, I’m going to ask you questions about how you make informed decisions for your current or previous roles.**

1. What kinds of decisions do you make as part of your current position that are related to land use management or policies?
2. How do you know when you need to make those decisions? (Or what happens that usually triggers the need to make decisions or take action?)
3. What actions do you then take?
4. Would you be able to describe for me an example situation of when this has happened in your current work?

**PART III.**

**Now we are on to Part Three. I’m going to ask you questions about how you or others in your organization use satellite-based monitoring and alert tools to inform decisions.**

1. What satellite-based monitoring tools do you currently use for monitoring? When did you and/or your organization start using these tools?
2. What types of training have you received to use these tools?
3. Why did your organization decide to use this particular set of tools?
4. What are the kinds of decisions or analyses that you use these tools for in your work?
5. How often would you say you make use of satellite-based monitoring tools in your day-to-day work? Has that frequency of use changed over time? How so?
6. Do other people in your organization or workplace also use these tools or other tools? If so, which tools do they use, and what decisions do they make?
7. Can you describe situations where the tools were helpful?
   1. Can you give an example to illustrate how they were helpful?
8. Can you describe situations where the tools were not helpful?
   1. Can you give an example of a situation where the tool was not helpful?
9. Do you think there are other situations or decisions where satellite-based monitoring tools are not being used but that these tools can help?
10. What other types of tools do you currently use for monitoring, and what decisions do you make with these tools? For example, drones, mobile devices, software, field reports...
    1. In which ways are these tools helpful?
    2. In which ways are they not helpful?

**PART IV.**

**We are now on the final part of our interview, Part Four. I’m going to ask you questions about how to improve the design and operation of satellite-based monitoring and alert tools.**

1. How can you use a monitoring tool more effectively for decision-making? What is preventing you from using the tool more?
2. Can you think of ways monitoring tools can be improved or enhanced to help you make informed management decisions?
3. Can you give an example of recommendations you have made to a tool developer?
   1. What was the feedback process, and how was your input received?
4. I’ve finished with the questions I set out to ask. Is there something that I didn’t ask that you would like to talk about related to your use of monitoring and alert tools and recommendations for improvements?
5. Based on what you have responded to in this interview, can you think of anyone else within your organization that I should talk with who could also share their experiences? Is there a colleague outside of your organization that you would recommend I speak with?

Thank you for taking the time to participate in this study. I truly appreciate your contribution to this research. Thank you for participating in this study.

**Section I – background & consent**

**Q1**

The purpose of this study is to document the applications of satellite-based early warning and alert systems and the barriers to their use. The results of this study will include a set of recommendations to improve access and facilitate the use of these systems for sustainable land management.

This survey should take you less than 15 minutes to complete.

Your participation in this study is voluntary. There is a less-than-minimal risk of participating in this study as the collected information is not sensitive. The researchers will follow best practices to secure the confidentiality of the participants and their responses. The information will remain confidential and will not have any identifying information associated with it. You may skip any questions that you do not want to answer. If you decide to take part, you are free to withdraw at any time, and your information will not be used in the study.

**Q2**

Please give your consent to participate in this study by checking the boxes after the statements below.

* I have been informed that my participation in this research study is voluntary.
* I understand that any information learned and collected from this study in which I might be identified will remain confidential and will be disclosed ONLY if I give permission.
* **I agree to participate in this study.** Consenting to participate in this research also indicates my agreement that all information collected from me individually may be used by current and future researchers in such a fashion that my identity will be protected. Such use will include presentations at scientific or professional meetings, publishing in scientific journals, and sharing anonymous information with other researchers to check the accuracy of study findings and for future approved research that has the potential to improve human knowledge.

**Q3**

This research complies with UMBC's Institutional Review Board. A representative of that Board, from the Office for Research Protections and Compliance, is available to discuss the review process or my rights as a research participant. The Office's contact information is +1 410- 455-2737 or compliance@umbc.edu.

**Section II – About participants**

**Q4**

This study investigates satellite-based early warning and alert systems for conservation applications. These systems monitor environmental change and rapidly disseminate alert information. The time frame for alert delivery can range from hours to several weeks. Please choose the answer that best fits your experiences using these systems.

**Q5**

Choose the country where you reside.

**Q6**

How would you describe your gender?

* Female
* Male
* Self-describe [ ]
* I prefer not to say

**Q7**

What is your ethnicity?

* Person of Indigenous descent [includes all peoples who self-identify as Indigenous, Aboriginal, Torres Straits Islander, Native Hawaiian, Pacific Islander, American Indian]
* Descendant of enslaved Africans
* African descent
* Asian descent
* European descent
* Mixed race
* Other
* I prefer not to say

**Q8**

Choose which sector best describes your profession below. [Select multiple]

* + Academia
  + Government
  + For-profit / Commercial
  + Not-for-Profit/ Non-Governmental Organization
  + Community Organizer/Member
  + Other [fill in]

**Q9**

How long have you been working in your profession?

* + Less than five years
  + Between five and ten years
  + More than ten years

**Q10**

Where is the domain of your work/research focused geographically?

* + Global
  + Regional
  + National or sub-national

**Q10a**

**[if the answer to Q10 is "Regional"]**

Which geographic region is the focus of your work?

* + Africa
  + Americas
  + Asia
  + Australia/Asia Pacific
  + Europe
  + Arctic
  + Other

**Q10b**

**[if the answer to Q10 is "Country select…"]**

Which country is the focus of your work?

**Q11**

In which biome is your work/research focused?

Never, Sometimes, Most of the time

* + Tropical forests/woodlands
  + Temperate forests/woodlands
  + Savannahs/grasslands
  + Steppe/high elevation
  + Wetlands
  + Coastal ecosystems
  + Boreal/artic

**Q12**

**[edits this question in the HTML View editor]**

<span title=" These tools use satellites to monitor ecosystem threats (fires, floods, deforestation ...) and disseminate alert information when threats are detected. The timeframe for the alerts can be within hours to several weeks for the incident."> Which of the following best describes your knowledge about satellite-based monitoring and alert systems?</span>

* Expert
  + Very familiar
  + Somewhat familiar
  + Not familiar

**Q13**

Which selection best describes your use of satellite-based early warning and alert systems?

* <span title=" A person who uses (or wants to use) these systems to directly mitigate and manage ecosystem threats or makes decisions about how to respond or who should respond "> User </span>
* <span title=" A person who generates data products and system platforms "> Product/system developer </span>
* <span title=" A person who trains people on how to use the systems ">Trainer/educator</span>
* <span title=" A person who studies these systems ">Researcher</span>
* <span title=" A person who supports the use of these tools through communications, financial support, or is simply enthusiastic about the systems ">Advocate</span>
* Other [fill in]

**Q14a**

**[if the answer to Q10 is "User"]**

As a user, which of the following best describes your role? Select all that apply.

* + Emergency responder
  + Farmer/landowner
  + Citizen
  + Law enforcement
  + Community liaison
  + Community monitor
  + Patroller
  + Incident command
  + Informant
  + Policymaker
  + Other [fill in]

**Q14b**

**[if the answer to Q10 is "Product/system developer"]**

As a product/system developer, which of the following best describes your role? Select all that apply.

* + Algorithm developer
  + System support technician
  + GIS technician
  + Platform/product developer
  + Platform/project manager
  + User engagement
  + Other []

**Q14c**

**[if the answer to Q10 is "Trainer/educator"]**

As a trainer/educator, which of the following best describes your role? Select all that apply.

* + Project/team manager
  + Educator
  + Trainer
  + Researcher
  + Other []

**Q14d**

**[if the answer to Q10 is "Researcher"]**

As a researcher, which of the following best describes your field? Select all that apply.

* Computer science
  + Remote sensing
  + Decision support
  + Ecology/conservation
  + Disaster risk reduction
  + Policy
  + Other [fill-in]

**Q14e**

**[If the answer to Q10 is "Advocate"]**

As an advocate, which of the following best describes your role? Select all that apply.

* + Academic/student
  + Policymaker
  + Program director/manager
  + Organization/Institution executive
  + Journalist
  + Social Media/blogger
  + Donor/funder
  + Enthusiast
  + Other []

**Q15**

Please write in the satellite-based early warning and alert systems that you use or develop. If you don't use any, just write "NA."

For example,

Queimadas, SATFRIO, DETER, GFW GLAD, FIRMS, Firecast, …

**Q16**

**["If the answer to Q10 is NOT "Product/system developer"]**

How were you introduced to the satellite-based early warning and alert systems you use? Select all that apply.

* + Training course/class
  + A colleague
  + News
  + Social media
  + <span title="website, internet search"> Internet </span>
  + <span title=" conference, workshop, webinar "> Meeting </span>
  + <span title=" report, scientific literature, white paper "> Publication </span>
  + Other [fill in]

**Section III – Decisions/actions**

**Q17a**

**["If the answer to Q10 is NOT "Product/system developer"]**

What are you monitoring/managing with satellite-based early warning and alert systems? [Select all that apply]

* + Forest clearing
  + Ecosystem degradation
  + Mining
  + Fires
  + Logging
  + Flooding
  + Landslides
  + Biodiversity
  + other [fill in]

**Q17b**

**["If the answer to Q10 is "Product/system developer"]**

What are users monitoring/managing with your satellite-based early warning and alert system(s)? [Select all that apply]

* Forest clearing
* Ecosystem degradation
  + Mining
  + Fires
  + Logging
  + Flooding
  + Landslides
  + Biodiversity
  + other [fill in]

**Q18a**

**["If the answer to Q10 is NOT "Product/system developer"]**

For what applications do you use satellite-based early warning and alert systems? [Select all that apply]

* + Informing land-use policies
  + Patrolling
  + Active fire management
  + Fire prevention
  + Law enforcement
  + Emergency response
  + Community engagement
  + Public awareness
  + Education
  + Community-based monitoring
  + Evidence of land use violations
  + Other:

**Q18b**

**["If the answer to Q10 is "Product/system developer"]**

What are the applications for your satellite-based early warning and alert system(s)? [Select all that apply]

* + Informing land-use policies
  + Patrolling
  + Active fire management
  + Fire prevention
  + Law enforcement
  + Emergency response
  + Community engagement
  + Public awareness
  + Education
  + Community-based monitoring
  + Evidence of land use violations
  + Other:

**Q19**

**["If the answer to Q10 is NOT "Product/system developer"]**

How would you describe the setting where you use satellite-based early warning and alert systems? [check all that apply]

* + Urban area
  + Rural community
  + Remote area
  + Other [fill in]

**Q20a**

**["If the answer to Q10 is NOT "Product/system developer"]**

How often do you respond to the information from satellite-based early warning and alert systems?

* + Multiple times a day
  + Daily
  + Weekly
  + Monthly
  + Rarely

**Q20b**

**["If the answer to Q10 is "Product/system developer"]**

On average, how often do you think your system's users respond to the information they receive?

* + Multiple times a day
  + Daily
  + Weekly
  + Monthly
  + Rarely
  + Not sure

**Q21**

When you receive alert information, what actions do you take with it?

* + [text box]

**Q22**

How critical is the following alert information to inform the actions you (or your system's users) take?

Not needed, Useful, Critical

* Extent of damage
* Cause
* Responsible Party
* Exact date of incident
* Exact time of the incident
* Satellite source
* Accuracy/confidence measure
* Other [write-in]

**Q23**

**["if the answer to Q10 is NOT "Product/system developer"]**

If you receive information and cannot act upon it. What are the reasons why?

* + I don't have the authority to act
  + I don't have the resources (equipment, personnel to act)
  + It's not my responsibility to act
  + I don't receive the data timely enough to act
  + The data are not reliable
  + The data is difficult to interpret
  + Other (please specify)
  + Not Applicable

**Q24**

What is the process for using the alert information to enforce land-use policies/laws, and who is responsible for carrying it out?

* + [write in]
  + I don't know
  + Not Applicable

**Q24b**

What do you notice are the challenges to effective enforcement procedures?

* + [text entry]

**Section IV – Evaluations**

**Q25**

Overall, how useful are satellite-based early warning and alert systems for informing land management decisions?

* Very useful
* Moderately useful
* Not useful at all
* Not sure

**Q26**

In general, how reliable is the alert delivery from the system you use (or operate)?

* + Extremely reliable
  + Moderately reliable
  + Not very reliable

**Q27**

In general, how accurate is the alert information from the system you use (or operate)?

* + Very accurate
  + Moderately accurate
  + Not very accurate

**Q28**

Overall, how "user-friendly" are the systems you use or operate?

* Easy - anyone can use the site
* Moderate – site requires practice to use
* Difficult – site requires training to use

**Q29**

**["if the answer to Q10 is NOT "Product/system developer"]**

Which of the reasons below may prevent you from acting upon the information received in alerts (select all that apply)

* + Connectivity (broadband or cellular)
  + Language of alert text
  + Alert information is not received in time to make decisions
  + Alert information delivery is not reliable
  + Alert information is not accurate
  + Alert information is not clear
  + Alert information is not detailed enough
  + You receive too many alerts
  + Other [write in]

**Q30**

How would you improve the alert information from satellite-based early warning and alert systems to make the information more useful for decision-making?

* + [text box]

**Q31**

How do you provide or solicit feedback to improve satellite-based early warning and alert systems? Check all the apply.

* + Direct feedback through email or other communications
  + Online survey
  + Workshop/capacity-building event
  + System/tool website
  + I have never provided or solicited feedback
  + Other [write in]

**Q32**

**["if the answer to Q10 is "Product/system developer"]**

Which metrics best capture the use of your system for conservation decision-making? Please add and rank the metrics that you use. [1 = most useful ]

* + Number of subscribers/users
  + Number of webpage views
  + Trending on social or news media
  + Number of people following or 'likes' on social media
  + Number of people trained
  + Number of new subscribers/users
  + Add metric here [fill in]
  + Add metric here [fill in]
  + Add metric here [fill in]
  + Add metric here [fill in]

**Q33**

FINAL Question :

What do you see are the most significant opportunities to apply satellite-based early warning and alert systems for conservation applications?

* + [fill in]

**Q34**

If you are willing to provide more information to inform this study, please enter your email address. Your email address will not be shared or used for any other purpose.

[text box]