

**Climate Change in Iquitos, Peru: Describing Governmental Organizational
Readiness for Change**

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Abstract:

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Background. Iquitos, the largest city in the Peruvian Amazon, is vulnerable to climate change health risks due to factors inherent to its location, its reliance on climate-sensitive resources, and its existing vulnerable populations. Its population is exposed to the health risks posed by climate change, and current mitigation and adaptation measures are being undermined by specific barriers.

Objectives. This study aims to explore how governmental stakeholders characterize the change commitment and change efficacy constructs as described by Weiner in climate change action in Iquitos, Peru, and the contextual factors shaping them.

Methods. A qualitative, exploratory-descriptive design was employed to perform a secondary data analysis of a subset of seven transcripts from semi-structured interviews of key stakeholders conducted in Iquitos during June 2025 in Iquitos, Peru. Data were analysed thematically with the Weiners' Organizational Readiness for Change framework to frame the study, analyse data, and interpret results.

Results. Stakeholders' change commitment is shaped by their perception of the benefits that climate change activities could bring to their organization. In this context, uneven climate change knowledge and misinformation may explain why these activities are not prioritized, as they are not seen as relevant on their own for organizational productivity. Regarding change efficacy, stakeholders demonstrated high confidence in their ability to participate in collaboration opportunities. In addition, they describe contextual factors acting as barriers that are addressed through regional-level intergovernmental collaboration, demonstrating a high level of collective trust. Stigma and misinformation regarding vulnerable populations suggest that these social perceptions may influence ORC as a contextual factor related to community participation and responsiveness.

Conclusion. Stakeholders in Iquitos' readiness perceptions are shaped by their unique views of the regional needs of Loreto and their organization. These findings underscore the necessity to contextualize ORC assessments not only to reflect their local organizational environment but also social biases and perceptions as well.

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1. Introduction.

1.1. Health risk of climate change impacts.

According to the World Health Organization, approximately 40% of the world's population lives in areas highly susceptible to climate change impacts such as extreme weather events, heatwaves, droughts, storms and floods.¹ The combination of these impacts affects livelihoods and interrupts public health delivery services and social support structures, increasing the global burden of heat stress, as well as infectious and non-communicable diseases.^{1,2} Nevertheless, across the world, vulnerable regions are not only more susceptible but also have less adaptation capability to these health risks.^{1,2} This is the case of Iquitos, Peru, one of the most vulnerable cities in the country.

1.2 Iquitos.

With a population of half a million, Iquitos is the largest city in the Peruvian Amazon.^{3,4,5} It is located in Loreto, Peru's most isolated and remote region. Surrounded by rivers and forests, transportation is limited to air travel and river travel.^{6,7} The city serves as a logistics hub for the trade of local agricultural products, which constitute the residents' primary food supply.^{6, 8} The region experiences two main seasons based on river levels: a high-water season and a low-water season.^{3,9} Because water levels fluctuate by up to 13 meters between seasons, they have shaped life in the city, from the availability of resources to transportation.^{3,9} Agricultural activity takes place on riverbanks during the low-water season; fishing productivity is higher during

high-water; floating communities adapt according to the season, and mobility is directly related to river levels.^{3,7,9} Furthermore, according to Peru's Center for Strategic Planning, the region has the highest multidimensional vulnerability index in the country.⁴ Among the groups experiencing greatest vulnerabilities are the 120,000 people living in floating communities along riverbanks, who are affected by unsafe housing, high levels of poverty, and a lack of sanitation, health care, and drainage services.^{3,4}

In these communities, a variety of health impacts have been documented after severe floodings during 2012, 2015, and 2025, such as acute respiratory, gastrointestinal, and skin illnesses, and an increase in infectious diseases and mental health disorders.¹⁰ These unique characteristics inherent to Iquitos' location, the vulnerability in which communities live, and the dependence on climate-sensitive resources make the city of Iquitos extremely vulnerable to climate change impacts by exacerbating susceptibility, exposure, and adaptive capacity.^{3,4,11,12} Due to the frequency of these flooding events, and their increase accelerated by climate change, emergency response services are the most highly developed climate change-related action in the city and region.^{3,10,11}

1.3 Current Climate Change mitigation and adaptation activities in the city.

Moreover, implementing these interventions is a complex task in Iquitos due to a lack of interinstitutional coordination and capacity, financing, risk communication, and vulnerability related to poverty.^{3,4,11} The Loreto Regional Climate Change Strategy (ERCCL, by its acronym in Spanish) is the primary climate action instrument that records, monitors, and coordinates current

resources and interventions; however, a lack of support and financial resources hinders its effectiveness and delays updates.⁴ Although these barriers to climate change action in Iquitos have been documented among organizations, there is a knowledge gap regarding the organizational readiness to implement change.

1.4 Organizational readiness for change (ORC) and Organizational readiness for implementing change (ORIC).

ORC is a multidimensional concept that focuses on the supra-individual levels of analysis, in which “organizational members” share a psychological and behavioral readiness to implement change, determining if they can translate intention into coordinated action.¹³ It is frequently used to offer a possible explanation for the results of implementing new practices and comprises change commitment and efficacy.^{13,14} Change commitment is described as the shared resolve to implement the change, and it is mainly determined by the perceived value of the change.¹³ Change efficacy is conceptualized as the sense of collective confidence of their capacity to implement the change, and is mainly determined by their informal assessment of task demands, resource availability, and situational factors.¹³ ORIC is an instrument that assesses Weiner's ORC.¹⁵ Although prior adaptations and validations have adjusted terminology, implementation language, and contextual references to fit local organizational realities, there is limited context-specific evidence on how ORC is perceived in climate change governance in global south settings, highlighting the need to generate structured knowledge that may support future ORIC adaptations in the global south.¹⁶⁻¹⁸

1.5 Aims:

This study aims to: explore how governmental stakeholders characterize change commitment and change efficacy constructs, as described by Weiner, in climate change action in Iquitos, Peru; describe contextual factors that are shaping these perceptions; and generate knowledge that may inform future contextualization of assessment tools such as ORIC in similar settings.

2. Methods:

2.1 Study design:

A qualitative descriptive exploratory study was used for a secondary analysis (SA) to characterize organizational readiness for change constructs on a subset of seven transcripts of 12 semi-structured interviews we collected for a previous project in June of 2025.¹⁹⁻²¹ Use of the interviews for this study was feasible because the answers were relevant to the topic and provided substantial and culturally rich information.^{19,23} A secondary supplementary analysis was performed to explore an aspect of the primary data that was partially addressed.^{19,23} A key advantage of SA in this study was the maximization of the use of existing data, particularly valuable when there are funding or time constraints.^{19,20,23} The primary study used a qualitative descriptive methodology, with a broader objective aimed to identify and describe current efforts regarding climate change and their public health impacts, as well as assess potential synergies with the project “Ciudad Medio Ambiente y Salud (Ciudad MAS), a local project that promotes environmental action to address "One Health," including climate change-related priorities among

stakeholders in Iquitos.²⁰ A subset of seven interview transcripts from the original study were included in this analysis, which were administered to regional government stakeholders.

2.2 Study setting and population.

The primary study was conducted in Iquitos, a complex city administered by national, regional, municipal, and district levels. Each of these levels have specific characteristics that impact resource perceptions, allocations, and priorities according to their jurisdictional boundaries.^{4,6,8,24}

In the primary study, key stakeholders from governmental organizations in management positions were identified through a narrative review of the regional administrative levels in the public health or climate change-related fields (such as emergency response, environmental resources administration, among others) in Iquitos.²⁰

Eligibility criteria included representatives from organizations for which information was available regarding direct or anticipated involvement in actions or health impacts related to climate change mitigation, adaptation, and awareness-raising.²⁰ Representatives were recruited using a combination of purposive homogeneous sampling and convenience sampling strategies.²⁰ From the beginning, purposive sampling was used to ensure a similar number of key stakeholders from each type of organization participated, aiming to address the research questions from a variety of perspectives.²⁰ Convenience sampling was used based on the participants' availability.²⁰ This approach allowed the capture of socioculturally rich and relevant data, but limited generalisability.²⁰ The final sample consisted of 12 stakeholders, including seven from the regional government, three from NGOs, and two from civil society groups in Iquitos.²⁰

2.3 Data collection:

No new instruments were created for this secondary analysis. In the primary study, a semistructured in-depth interview guide was used, with flexible follow-up questions. All interviews were conducted in Spanish (participants' native language), delivered both face-to-face and virtually, and audio-recorded with consent. Interviews were conducted in Iquitos between June 2025 and July 2025, ranged from 20 to 40 min in length, and were transcribed verbatim.²⁰ For this, SA transcripts were de-identified and stored in a folder on the researcher's cloud. Transcripts were then uploaded and stored in Dedoose software version 10.0.34. This study used a subset of 7 interview transcripts from the primary study that corresponded to those conducted with stakeholders from the regional government.²⁰

2.4 Data Analysis.

The transcribed interviews were analyzed in Spanish to improve understanding of the sociocultural characteristics of the stakeholders' context.²⁵ Interviews were analyzed with a thematic analysis approach according to procedures outlined by Braun and Clarke.²⁶ All transcripts from the parent study were examined to confirm which were relevant to the SA.^{21,22} One interview was discarded from the analysis as it did not provide information relevant for the study. Transcripts were re-read to familiarize and reflect on potential codes.^{26,27} Dedoose software version 10.0.34 was used to facilitate coding.

2.4.1 Codebook development

For this study, a deductive codebook was first generated based on Weiner's Organizational Readiness for Change theoretical framework.^{26,28}

2.4.2 Coding process.

Following the analytical process, transcripts were coded once during the first round, and data from the stakeholders' perspectives that were not captured by our initial codes were considered.^{26,28} For example, consistent mention of negative environmental behaviour and the necessity for the community to be part of interventions in the city informed the creation of inductive codes such as “local_mentality” and “community_involvement”.²⁷ Inductive codes were added in an iterative procedure, and four overall rounds of coding were required to achieve data saturation.^{26,28,30} Once the coding was complete, the co-occurrences and code fragments from all the transcripts were exported into an Excel spreadsheet, allowing identification of similarities, matches, and patterns of occurrence. Using mind and conceptual maps, features belonging to the two main constructs of the ORCh framework—change commitment and change efficacy—were identified. This process was carried out iteratively, comparing the theory with information obtained from the transcripts, which allowed for the creation of potential themes to characterize concepts.^{26,28,29}

2.4.3 Trustworthiness and Rigor.

Trustworthiness of the findings were strengthened through triangulation across interview transcripts, peer debriefing during codebook development and interpretation of results, as well as

the maintenance of an audit trail, including analytic memos, coding notes, and documentation of methodological decisions.^{25,26,28}

3. Ethical considerations.

The primary project did not need IRB review; nevertheless, verbal consent was provided before each interview with each participant.²⁰ For this SQA, we did not ask the stakeholders for their consent, but we de-identified participants in the transcripts and results.

4. Results.

This section begins with an overview of the participants, followed by a presentation of seven key themes grouped into three domains.

4.1 Sociodemographics.

We used seven transcripts corresponding to key stakeholders from the government performing climate change action in Iquitos, Peru. All stakeholders were in management positions in seven regional departments.

Table 1.

<i>Participants' sociodemographic characteristics.</i>		
Interview (I_):	Organization name (acronyms in Spanish):	Level of government:
1	Regional Emergency Operations Center (COER)	Loreto Region

<i>Participants' sociodemographic characteristics.</i>		
2	Regional Environmental Management (GRAM)	Loreto Region
3	Environmental Health Directorate (DESA)	Loreto Region
4	National Meteorology and Hydrology Service of Peru (SENAMHI)	Loreto Region
5	National Institute of Civil Defense (INDECI)	Loreto Region
6	Regional Management of Agrarian Development and Irrigation (GERDAGRI)	Loreto region
7	Local Water Authority (ALA)	Loreto Region

4.2 Themes:

This section is divided into seven key themes, grouped into three domains: two for the constructs of the ORC framework and one for contextual factors that were consistently mentioned by participants. Domain one is called “Stakeholders' motivations for change commitment to current activities and change valence of climate change-related activities”, two “Efficacy judgments of current activities” and “Characteristics of the sociocultural context of Iquitos highlighted by stakeholders acting as influencing factors on readiness perceptions”.

4.2.1 Domain 1. Stakeholders' motivations for change commitment to current activities and change valence of climate change-related activities

This domain captures stakeholders' understanding of climate change and related national policies, their commitment motivations towards climate change action and value for CiudadMAS. Rather than prioritizing these policies, they incline towards organizational productivity. These beliefs portray how organizational policies and framework understanding impact change commitment and change valence.

4.2.1.1 Theme 1. Stakeholders' change commitment motivations to past and current climate change-related activities are related to the prioritization of their productivity goals

All stakeholders reported policies within their National Ministries that aligned with their organizational goals towards climate change adaptation and mitigation. In response, most described performing climate change related activities, such as protocols for responding to and adapting to environmental challenges

I_7: *“about what ALA does in terms of mitigating climate change or contributing to efforts to mitigate it? It’s something complementary, so to speak, to what could be considered a related benefit linked to water resources, right? Climate change, right? [...] a technical reference sheet—that’s why we have to be quite careful, as I said, about the roles each of us plays, right? [...] So, that technical reference sheet doesn’t allow you to implement it, right? Instead, I give you a reference, and it’s up to the implementers to carry it out, right? To implement it.”*
(Stakeholder from the ALA)

I_6: *Here, I don't know if you're understanding, we only handle the production, here it is, livestock and agriculture, right? A little bit about how we can improve production for human consumption, right? And the rest, of course, is linked to the macro picture of climate change; all of us are focused on that, right? It's not just agriculture—it's all of us.* (Stakeholder from the GERDAGRI)

Even though they know their policies, stakeholders have diverse perceptions of climate change drivers, impacts, and misinformation

I_5: *“So, the conclusion I've come to is that we're seeing the change. Because we're from here, right? [...] The problem is when you coordinate, and they ask about the studies, and what I see is that there aren't any studies that actually tell you there's climate change. We talk about climate change, but they say, hey, is there a study—at least I haven't found one? And that's even though we coordinate with SENAMHI. Because we see that change more at the hydrological and meteorological levels, in the climate, right? In the temperatures. And they say, no, there isn't. And there isn't anyone or any study that's actually linked to consequences that really tells you: OK, this is because of climate change, scientifically.”* (Stakeholder from the INDECI)

In this context, stakeholders shared their motivations to commit to current climate change related action. Most of them perceive them as a requirement to be able to do their current tasks or secondary to their main organizational goals

I_1: *“Yes, all of this is being adapted, because here in Loreto, the climate used to be very pronounced, with two distinct seasons: summer and winter. [...] But since the climate has changed, in summer—when there's supposed to be no rain—it rains almost every single day. So the climate has changed quite a bit here in Loreto, and there are days in summer that are so hot*

that even someone who's used to the heat can't stand it, and it's really intense outside."(Stakeholder from the COER)

Others commit because of the consequences they anticipate facing if they avoid or ignore them

I_3: *"An increase in diseases. A direct increase in diseases. That is one of the causes we're facing. An increase in ARF. An increase in cases of malaria, dengue, and leptospirosis. These are closely related to these changes. They cause shifts in the behavior patterns of vectors. We have to adapt to this. And if we don't adapt or turn a blind eye to these changes in the environment, we won't adapt, and we're going to have problems."* (Stakeholder from the DESA)

And some others because they want to achieve change behavior of the local population

I_4: *"Well, there's already plenty of evidence of climate change here. One example is the increase in extreme weather events. [...] And when I talk about water supply, poor sanitation, disease—a series of triggers that are happening and will continue to happen— We're still working toward that shift in mindset. Things have improved significantly over the past 10 years, but we believe the end user can improve their behavior. If you tell him there's going to be a storm tomorrow, they should know what to do."* (Stakeholder from the SENAMHI)

4.2.1.2 Theme 2. Stakeholders change valence variability for CiudadMAS

Change valence was recognized when stakeholders were asked about the alignment of their organization with CiudadMAS. We found there were mostly change valence discrepancies, driven by their perception of the benefits it would bring to their organization

I_3: *“And it would fit in quite well because, in one way or another, having green spaces in an area helps you, it improves your quality of life, provides better air quality, offers shade, and gives you a place to relax. In one way or another, it also helps reduce noise. So it does help quite a bit.”* (Stakeholder from the DESA)

I_5: *“Well, I do think it’s important for me, from our perspective, and I see it as a problem, that people become more aware of the spaces they have to occupy. To be responsible for the space they occupy to live. Then, I think this project can help with that, right? And it’s like I’m saying, and I see that often our people leave, yes, I know there are people who get used to it, human beings get comfortable, but I say, we shouldn’t get used to something that in the end won’t be sustainable, right? [...] And that’s a bit—I mean, that’s where I think this project could contribute and address the issue of raising awareness, right?”* (Stakeholder from the INDECI)

Or, because they would like to use the resources to impact another sector

I_4: *“No, I think they would actually complement each other. We can advise them on what we consider to be some priority actions from our point of view. Another sector might see it from a different perspective, and from there we can determine which one is the highest priority.”* (Stakeholder from the SENAMHI)

4.2.2 Domain 2. Efficacy judgments for current activities

This domain captures stakeholders’ descriptions of the resources that have enabled them to implement climate change action in past and present experiences. And how, despite the existence of barriers, they manage to overcome them through adaptation and conjoint action with other organizations, thereby expressing confidence in their collective capabilities.

4.2.2.1 Theme 3. Stakeholders' present and past experiences positively affected efficacy judgments

The stakeholders described current and past activities within their organizations and the resources needed to implement them. Data management, capacity building, and project planning and execution were among the most frequently mentioned activities. From this assessment, they expressed confidence in their organizational capacity to execute their activities and participate in others' projects

I_4: *“Usually, the projects aren’t the ones we’re developing. Whenever they come to ask for information, we tell them: ‘We can provide information, but we can also help interpret those variables.’ That’s when they bring us in.”*(Stakeholder from the SENAMHI)

Two of the outlined barriers to implementing these activities in their local context were the disruption of their processes due to unusual environmental events and a lack of financial and informational resources. Among them, short-term adaptations and conjoint action emerged as popular solutions and facilitators

I_5: *“The health department has response teams; it has a health system that’s prepared. So, everyone plays their part, right? Yes. When there’s an emergency, the idea is to coordinate. This system works because everyone does their part.”* (Stakeholder from the INDECI)

Short-term adaptations are motivated by unusual environmental events and emergencies that affect their operational processes. The most named events were increased frequency and

intensity of cold fronts, extreme heat waves, and anomalies in high- and low-water season patterns

I_6: *“For example, if we look at the historical data—as I’ve mentioned before—we expected the low water level in May, but now it’s July, and that’s never happened before, which is quite shocking to us, isn’t it? Because we have to, we have to change things, mainly the planting schedule for farmers; for example, they were already expecting the alluvial soils in May, from May to June, but now it’s July, and the muddy areas are just starting to appear—the fields where they’re going to plant—so in light of that, we have to adapt as well, and the manager is a bit worried because there’s a huge change”* (Stakeholder from the GERDAGRI)

There were also two who mentioned long-term changes, either to attract the attention of potential funders or to improve their data management systems. Both of them were motivated by climate change action

I_4: *“Something that has been developing for several years now is the interrelation with other disciplines, because we have seen that simply conducting research in hydrology and meteorology alone does not have much effect on our funders. So now we are basing our work on impacts. Consequently, our projects are now focused on minimizing those impacts and getting the information to the end user.”* (Stakeholder from the SENAMHI)

In addition, those stakeholders who expressed a lack of confidence in their own capacity to align with the project, showed a consistent belief that another part of their regional department would

I_1: *“Yes. There’s the Environmental Management Department. The regional government runs that department. It’s a very active department with many other offices under it. There’s also the department of.. . It focuses on forestry. I can’t remember its name. But next year, it will*

become part of the Environmental Management Department. And there are many people there who could contribute and also help with the project.” (Stakeholder from the COER)

4.2.2.2 Theme 4. Shared confidence in collective capabilities.

The “articulación” (conjoint action) was shared as the main solution to make up for the lack of financial, equipment, and informational resources, sometimes giving them long-term assets in exchange. Past and current collaborations give them confidence in their collective capabilities to achieve successful implementations

I_3: *“So we have partners, yes, we have two key partners: Cayetano Heredia, through INNOVALAD, which will eventually hand over its early warning platform to us—one of their goals—so that we can use the data we enter to understand and monitor environmental fluctuations.”* (Stakeholder from the DESA)

Regional governmental departments were described as ongoing interdependent collaborators. While municipal, nongovernmental organizations, and academic institutions are involved in specific short and long-term projects

I_6: *“Yes, we work in coordination with the institutions; we don’t have good information centers, like meteorology. We rely on the Navy, we rely on SENAMHI, and we also rely, for example, on ENAPU—they’re the ones who manage it—and our agencies also coordinate with them, because we don’t have direct meteorological information in the different agencies or in the provinces.”* (Stakeholder from the GERDAGRI)

I_5: *“Yes, for example, there are NGOs that support us, that are involved in risk management, and have projects here. And what we try to do is say, “Okay, you have projects”, we want the municipality to get involved so that they provide sustainability, because it seems interesting to us, doesn’t it?. So, there’s funding. Municipalities often don’t have that. It’s one of the things that limits them.”* (Stakeholder from the INDECI)

4.2.2.3 Theme 5. Interrelationship between change commitment and change efficacy from the stakeholders' perspective.

Similarly, stakeholders mentioned barriers they encounter during the collaborative processes. The most frequently cited barriers were the lack of involved coordination and leadership among organizations, resulting in fragmented, delayed, and/or incomplete activities. For example, this stakeholder talking about other authorities not meeting their part in risk communication

I_4: *“Things have improved significantly over the past 10 years, but we believe that end users could do more. If you tell them there’s going to be a storm tomorrow, they should know what to do. But there’s very little we can do here. The institutions aren’t communicating what actions are going to be taken.”*(Stakeholder from the SENAMHI)

Nevertheless, high collective confidence persisted supported by past experiences and their efficacy confidence

I_6: *“What we’d like is for some agency to, well, take the lead on this. To take the lead so we can build on that foundation, right? The Department of Agriculture, for example, is ready to get to work. We have an agricultural agency, Maynas. We aren’t making the most of it. They have professionals who are qualified to do, to spread the word. But what’s missing is someone to take*

the lead, to steer things, who has the drive, who is committed to this.” (Stakeholder from the GERDAGRI)

Committed leadership and coordination were pointed out as solutions

I_3: *“Sometimes what’s missing is just sitting down together. I’ve mentioned this before in some sessions. We’re all doing the same thing. And sometimes we duplicate efforts. And sometimes we do get together to do things—to do activities together. We could make a single intervention, going all at once. And sometimes we don’t optimize the state’s resources. And that’s perhaps because there’s a divorce. Or a heavy workload. Because I know I have to do that. But... And I’ll get it done. And I don’t have that connection with them. Maybe they... I want a date. They can’t because they have other activities. So, it’s like we’re not really on the same page there. But yeah... There are times when... We have synergy and can get more done.”* (Stakeholder from the DESA)

4.2.3 Domain 3. Characteristics of the sociocultural context of Iquitos highlighted by stakeholders acting as influencing factors on readiness perceptions

4.2.3.1 Theme 6. Identification of mindsets and cultural practices that exacerbate climate change and increase vulnerability to its impacts. Change behaviour strategies described by stakeholders.

Stakeholders repeatedly noted that an existing “*mentalidad*” (mindset) and “*costumbres*” (cultural practices) among city residents exacerbate climate change and increase already vulnerable groups to its impacts. River pollution from household and pedestrian waste, land-use change, and occupancy of flood risk areas were the most mentioned. Residents experiencing low

socioeconomic status (SES) were described to have more tendency to litter and occupy flood-prone areas

I_2: “Land-use change in the region, deforestation—whether due to road construction, the development of new settlements, agriculture, or forestry topics. Land-use change has been a major contributor to regional greenhouse gas emissions...” (Stakeholder from the GRAM)

I_4: “It depends on the timeframe. I don’t know if this is a short-term, medium-term, or long-term project. Because to change habits even a little bit, you need a long-term approach. And you need to work with the younger generations. So it’s very difficult to change the approach to the city’s overcrowding. [...] But the mindset is different. It’s different here; just half an hour away, it’s already different. You start to see a different mindset. But we have to start working on it now.” (Stakeholder from the SENAMHI)

Stakeholders noted that the downstream consequences of these behaviours exacerbate existing health issues and disproportionately affect vulnerable populations living in informal settlements in flood-prone areas with low resources. Mentioned downstream consequences include the spread of infectious diseases due to contamination of drinking water and the expansion of vector habitats

I_4: Remember, river rises, flooding. River recedes, trash along the riverbanks. Leptospirosis. Well, the humidity also brings dengue, malaria, mosquitoes. “N” diseases that get triggered when the river rises and when it recedes. So, that’s what we’re focusing on now, right? Right now we’re very interested—well, the population is very interested in what the next Bastiante season will be like. Because for the last two years we’ve had problems with river traffic, right? So, in some cases, education has actually come to a standstill here. Because teachers couldn’t leave, and people couldn’t get there. So, that’s something that really impacts us here in the region, isn’t it?” (Stakeholder from the SENAMHI)

In this context, changing this mindset was emphasized as essential to combating climate change. This shift in mindset was envisioned through education, with expected results including: population awareness and appropriate behavior during abnormal hydrological events (floods and droughts); increased interest in climate change and its impacts; improved waste management; improved maintenance of green spaces in the city; and increased occupancy of safe areas

I_1: "Yes, I think we should work with women and children. Train them, teach them why we shouldn't cut down trees—because trees give life. And plant more trees. Teach the children to protect the trees. And the mothers, too. Also, make sure they don't throw trash on the street. Because that also causes pollution in another way. [...] So also make sure that settlements don't encroach on the riverbanks. They shouldn't invade that area. Why? Rivers have their own territory up to where they flood. And there's vegetation there. And that vegetation—if those river areas are invaded—if they're invaded, people cut down all that vegetation. And that vegetation acts as a filter so that trash and other things don't get into the river. But when they cut it down, all that protection is lost, and all the trash ends up in the river."(Stakeholder from the COER)

Stakeholders noted that “younger generations” should be given priority in efforts to change mindsets, arguing that they are more likely to embrace change and have greater potential to influence the general population

I_6: “So that we can also pass on to future generations, above all, what is being done, right? And what might happen later. How to communicate this to people, to the public, by giving them a beautiful, ecological park, right? We're already passing this on, even to young people, to children, aren't we? So that they, too, can follow suit and say, “This must continue,” but no. I don't see it that way. I really see that more concrete is being poured than trees are being planted.” (Stakeholder from the GERDAGRI)

Efforts are being made to foster the change in mindset via workshops in the community, mainly in schools; however, the expected results have not been achieved. Some of the barriers to achieve them were lack of community engagement due to the mentioned “*mentalidades*”, and short period of implementations

*I_3: “83% knew what they needed to do at home to prevent dengue. But the problem was that the home environment was already at risk. [...] In other words, they know what to do, but they don’t put it into practice. So, the focus needs to shift toward children. Toward children. Young people, children, adolescents. Because parents—and I started thinking about this a bit—have other priorities. [...] And when you go to the home of a child who has died from leptospirosis, for example, you see that the living conditions are deplorable, very unsanitary. [...] General poverty—so-called poverty—is a chain that keeps passing on. So, there’s no change in attitude. And if I were to leave right now, **unintelligible** they’d tell me it might be to get rid of the leptospirosis. Because we also hold sessions in communities, in schools. They’ll tell you that. But you go to their house and you see... I’ve been failing.”* (Stakeholder from the DESA)

4.2.3.2 Theme 7. Transportation as a barrier to implementing activities

Stakeholders acknowledge that the communities most vulnerable to the impacts of extreme weather events in the region are those living in riverine areas

I_1: “The municipality conducts its own census and registration, and they know which communities are most affected. But we also have that record. For example, in Ucayali there is a large population that is very poor. Well, along almost the entire riverbank. They don’t even have sanitation services. They go into the woods to relieve themselves. Honestly, many things haven’t improved yet; it seems like they’re still living like primitives.” (Stakeholder from the COER)

Loreto's vast territory and the lack of transportation resources hinder mobility to those areas and throughout the entire region

I_6: "Even the work being done in Loreto—given its sheer size, because Loreto covers such a vast area, I don't know if you've realized this—sometimes the economy just doesn't allow for it; we simply don't have the resources. The regional government—we depend on the regional government—is making efforts, but we can't reach all the river basins, because Loreto, in terms of population, is small, but territorially it's immense—it's immense. So, we as management, in this case the agriculture department, try to do the impossible, right? In all the provinces." (Stakeholder from the GERDAGRI)

This has increased in recent years due to local environmental anomalies, further increasing the vulnerability of populations that are already vulnerable. On top of that, they aren't being prioritized

I_4: "Look, we're talking about the weather, climate change, but here the most striking thing is the changes in the hydrological situation. Right? [...] Last year, up until September—which was the last drought we had—there were 23 deaths due to a lack of maternal and child care. I mean, pregnant women couldn't get to the health center here. Right? That's shocking. If this happened in Lima, it would be a disaster. If there are protests over three people dying in Lima, what's going on here? A lot of people are dying here, but we need to become more aware of these kinds of events. I mean, there's a certain centralism here. So they think Iquitos is Loreto, and in reality, that's not the case. There are our brothers and sisters who are abandoned, isolated, unable to transport their produce, with nothing to eat, and no water in the streams either. A series of triggers that occur every time there are these extreme changes in the hydrological system." (Stakeholder from the SENAMHI)

Despite this barrier, efforts are being made to increase resources through collaboration in order to serve the entire region

I_2: *“But we want to have strategic partners so that we can expand our reach, right? At the regional level. As you may have noticed, moving around the region isn’t exactly easy, is it? We’ve mostly been getting around by river. Yes. So, we can’t reach many municipalities. We’re in Requena, and we’re heading to Nauta, which is also nearby, but from there we actually want to reach all the municipalities.”* (Stakeholder from the GRAM)

5. Discussion.

This study offers an in-depth description of how key governmental stakeholders in Iquitos, Peru, perceive organizational readiness for climate change action.

5.1 Key Findings:

5.1.1 Commitment motivations are highly influenced by upstream contextual factors and past experiences.

We found stakeholders to be mainly motivated by the anticipated benefits of climate change action for their organizations. This finding aligns with the literature on how, in contexts where financial restrictions are perceived as a main barrier to implementation, local authorities are forced to reduce their scope in climate change action and prioritize short-term legal obligations.³¹ A lack of multilevel climate change governance and centralized leadership to set specific targets and support local authorities could be catalyzing these financial restrictions and misalignment with national policies.^{31,33} In relation to the mentioned misalignment, stakeholders showed variation in climate change knowledge, uncertainty, and misinformation, which are also contributing factors to valuing the need for action and commitment to change, while creating

ambiguity towards their efficacy perceptions.^{13,32,33} Uncertainty and misinformation also limit more systemic or reflexive thinking by diminishing the role of their organization in national policies regarding climate change action. In Iquitos, misalignment of climate change governance is affecting readiness perceptions of these decision makers, impacting in how they perceive the need for their organizations to prioritize mitigation and adaptation activities.^{31,33,-34}

5.1.2 Levels of action and conjoint action perceptions

Stakeholders understand efficacy perceptions through collaboration at the individual organizational level and the supra-individual level, including regional and municipal governmental and non-governmental organizations. This challenges Weiner's conceptualization of a collective measurement; nevertheless, other studies have measured ORC using one representative per workplace, showing it is feasible.¹⁷ Collaboration from past experiences acted as a facilitator of implementation, which impacted change efficacy perceptions in the stakeholders who expressed confidence in their collective capabilities.¹³ Despite sharing implementation barriers in past collaborations, stakeholders optimistically expressed high change efficacy towards CiudadMAS. Moreover, because of the limited information provided regarding the program, these results may be an overestimation of change efficacy arising from a lack of understanding of the intervention's requirements and the actual capacity of other departments.¹³ Barriers mentioned, such as a lack of leadership and coordination, have been shown to negatively impact local-level interventions and periodically diminish individual efforts through fragmenting action and weakening results.^{13,33} These barriers in Loreto are already creating conflicts among

the 53 municipalities and the regional government regarding environmental resource management.³⁵

5.1.3 Contextual characteristics affecting readiness perceptions.

This study found that stakeholders emphasized mindsets and cultural practices that were harmful to the environment and expressed the need to address them through education, which not only reflects a common motivation for change through shared disagreement but might also increase their value for climate change action.^{13,36}

Furthermore, we found that they associated vulnerable communities with *cultural practices* such as littering and the decision to occupy flood-prone areas. This perspective may reflect stigmatizing behaviours towards communities experiencing low socioeconomic status and ignores detrimental determinants affecting these groups' decisions and way of living, such as access to Water, Sanitation and Hygiene (WASH) systems and safe housing, longstanding problems of floating communities in Iquitos.^{2,7} Limited access and capacity to participate in adaptation and mitigation initiatives largely explain why climate change disproportionately affects these communities, which are highly influenced by decision-makers' sociocultural perceptions.^{31,34,37-39} In Iquitos, stakeholders' stigma might be influencing commitment motivations to climate change action by having a preconceived perception of failure in these communities, as expressed in the stakeholders.^{13,31,34,37} This could have a larger impact due to the fact that they hold management positions, amplifying existing inequalities.³⁹

5.2 Limitations.

A small, purposive sample composed of regional-level authorities in management positions in a single city limits generalizability. However, qualitative analysis does not seek statistical representativeness but to provide insights; in this study, the applied ORC framework in the analysis was designed to produce transferable and credible knowledge for future local assessments.^{23,40} A characteristic limitation of SQDA is that inadequate “fit” between the data and the research question can hinder the true answer to the research question.⁴¹ That is why the review of an existing dataset was an important first step to ensure the primary data fit the questions proposed in this thesis. Even though including the researcher in charge of data collection for the primary study increases the likelihood of correct interpretation of transcripts with correct contextual understanding, confirmation biases could be a barrier.^{23,42}

5.3 Recommendations.

An ORC assessment must address context-specific characteristics such as the organization’s motivations regarding perceived benefits of change, climate change knowledge and the level at which they’re expressing change efficacy. By taking actions to address these findings, researchers may increase the assessments’ ability to capture real ORC perceptions in this context. For instance, even though the motivations regarding climate change may differ, they could nonetheless drive a level of behavioral change just as significant as that observed in cases

involving shared motivations—and this is something that could be addressed by applying the tool.^{13,43}

Stigma and misinformation regarding vulnerable populations have implications for equitable implementation of climate change action, as well as for the equitable perception of readiness for change. Future efforts to measure ORC and interventions should incorporate approaches that address social biases in decision-makers, particularly when carried out in communities perceived as vulnerable.

Capacity-building efforts need to move beyond policy dissemination toward strategies that facilitate operational integration, multi-level collaboration, and prioritization of climate-related action within organizational practices. Strengthening organizational conditions that influence change commitment and change efficacy include climate change evidence-based knowledge, leadership capacity, leveraging current collaboration structures, coordinating processes, and financial support.

6. Conclusions:

This study contributes to the understanding of perceptions of readiness for climate change action and influencing factors from the perspective of key government stakeholders in Iquitos, Peru, through the ORC framework. This contributes to the expansion of knowledge regarding the theoretical framework in Latin America regarding these types of activities. In this context, barriers and facilitators of implementation from past experiences and sociocultural perceptions play an important role in stakeholders' commitment to change and their perceived change

efficacy. We found that a lack of communication between different levels of governance—from the national to the municipal level—is a possible explanation for implementation barriers at the local level, such as a lack of funding and leadership. This directly affects the level of knowledge about climate change and the direction of actions, influencing their ORC by undervaluing the importance of their individual participation within the broader context of national policies and prioritizing organizational productivity.

Despite this, factors were identified that improved ORC in this context, such as confidence in collective capabilities, experience with severe impacts from abnormal climate changes, and faith in younger generations by increasing perceptions of readiness.

Furthermore, the perception of readiness extended beyond the boundaries of a single organization to include collaboration with multiple government stakeholders. Ultimately, discrepancies in the values regarding change commitment and collective confidence capabilities for change efficacy have been recognized as the main modifiers of the perception of readiness in this context. Highlighting the importance of understanding perceptions to accurately interpret organizational readiness in complex contexts to contribute to future contextualization of tools based on the ORC framework for application in similar settings.

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