



Adaptation Research Alliance

Project UPGRADE: Geotechnical Research and Development for the Urban Poor



Objective

With sea level rise, there is a greater risk for more flooding occurrences especially in major cities like Metro Manila. Informal settlements are the most vulnerable due to their low-quality housing structures with limited or no risk-reducing features and a limited capacity to cope. It is then important to take resilience into account when site planning and during site development to mitigate disaster risks.

Though many urban poor communities have developed their own adaptive capacities, it can be further enhanced by partnering with external institutions such as local government units (LGUs) and national key shelter agencies (KSAs).

Project UPGRADE aims to:

- Assess the existing environmental conditions of an urban poor communities in Valenzuela City and Davao City experiencing multiple vulnerabilities to climate change;
- Propose geotechnical solutions on the locally-led site development and house upgrading initiatives of the community in order to mitigate and adapt to the changing environment; and
- Demonstrate the feasibility of co-creating a resilient community through climate-adaptive architecture combined with strong social networks.

Key Lessons:

- Geotechnical Research is really a complex study and expensive given the situation of the DRCNAI Community that is submerged to water. This research will be a big factor in the consideration of their site development and house design
- Partnering with academic institution such as the University of the Philippines Institute of Civil Engineering for their expertise in Geotechnical research
- Incorporating this initiatives to other project like LIRLAP (Linking Disaster Risk Governance and Land-use Planning) with researcher from University of the Philippines-School of Urban and Regional Planning, Technical University of Dortmund and University of Stuttgart
- Focusing on the priority needs of the SAJUSSA community the protection of their Urban garden and mangrove seedlings for coastal protection, given that the community is bounded by huge government project such as the coastal road and drainage upgrading but they will still continue for the "Peoples Plan Process"
- Incorporating the result of University of the Philippines National Service Training Program-Civic Welfare Training Services of School of Economics and College of Architecture student proposal for the SAJUSSA community



03 Project Updates



Adaptation Research for Impact Principles

Research is needs-driven, solutions-oriented and leads to a positive impact on the lives of those at risk from climate change.
[Who or what is the research for?]

Research is transdisciplinary and co-produced with users
[How should research be carried out?]

Research emphasises societal impact.
[How is research valued?]

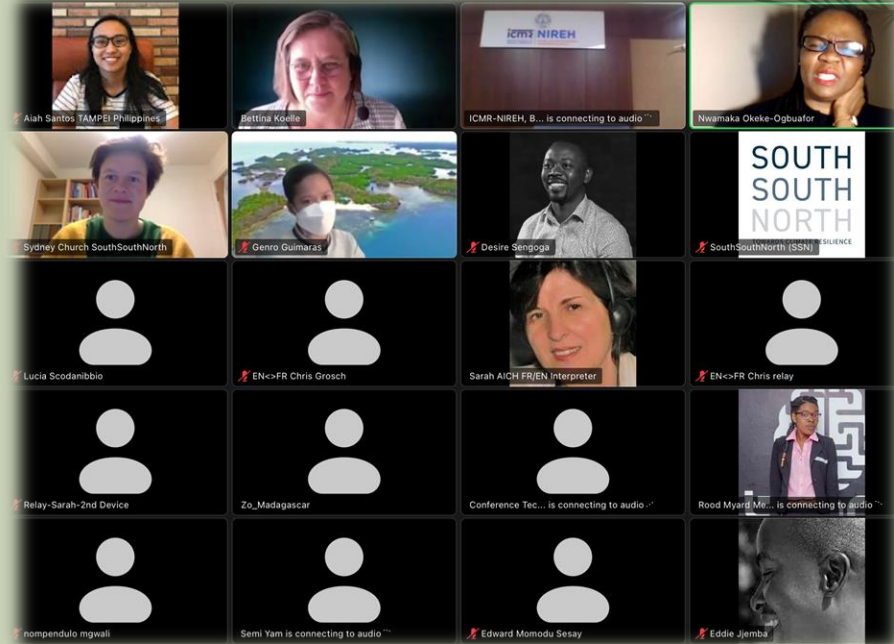
Research builds capacity and empowers actors for the long-term
[What can research enable?]

Research processes address structural inequities that lead to increased vulnerability and reduced adaptive capacity of those at risk.
[How can research address root causes of risk?]

Learning-while-doing enables adaptation action to be evidence-based and increasingly effective.
[How can research-action links be strengthened?]



Catalysing action research for high impact adaptation and resilience



January 20, 2022: TAMPEI team attended the first ARA Global Workshop

Together with TAMPEI were representatives from the community of Del Rosario Compound Neighborhood Association, Inc. (DRCNAI) in Valenzuela City and San Juan Seaside Settlers Association, Inc (SAJUSSA) in Davao City

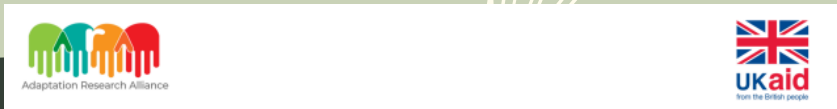




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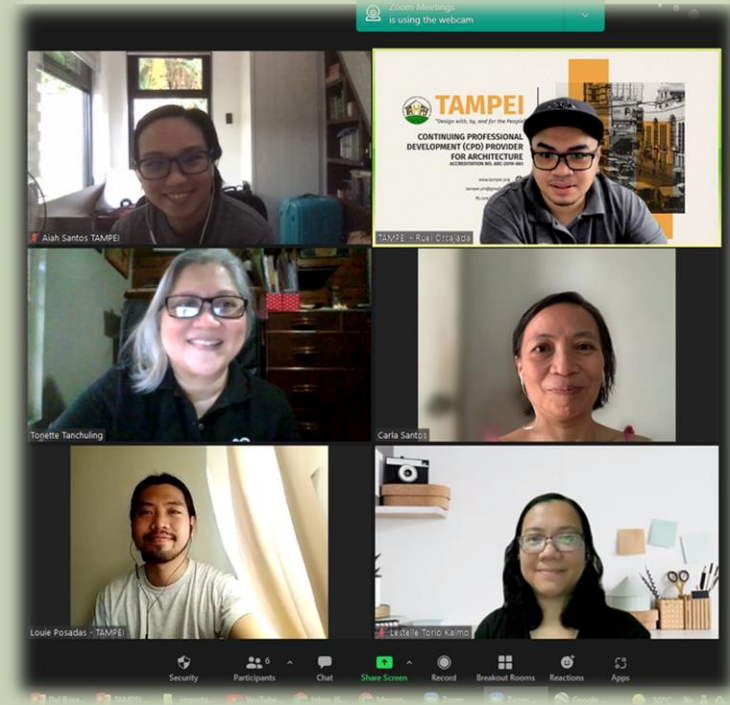


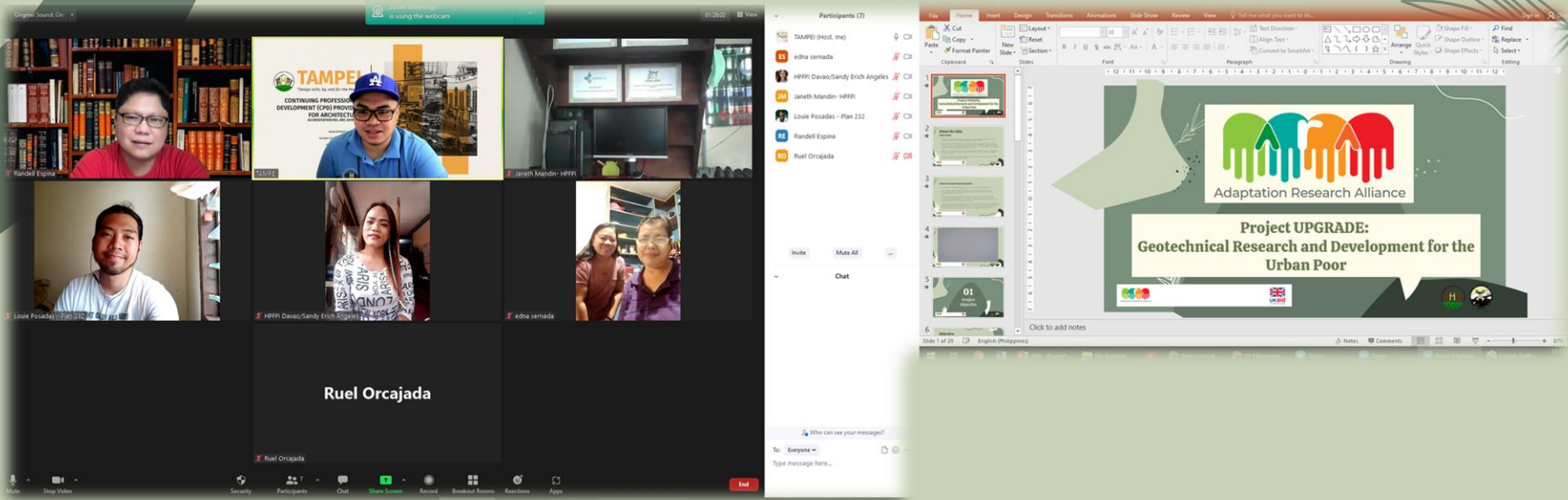
**January 28, 2022: Community Orientations done
with the leaders from both DRCNAI and SAJUSSA**



February 8, 2022: Meeting with engineers from the University of the Philippines Institute of Civil Engineering (UP ICE) attended by two of their faculty members.

- Discussed about the projects and situation of DRCNAI and they suggested getting a drilling company for the soil test.
- The result of the soil test will be the basis for their recommendation of structural design of the houses, given the situation of DRCNAI whose houses are submerged under water.





February 22, 2022: Courtesy meeting and discussion with the Dean of School of Engineering and Architecture of Ateneo de Davao University (AdDU-SEA)

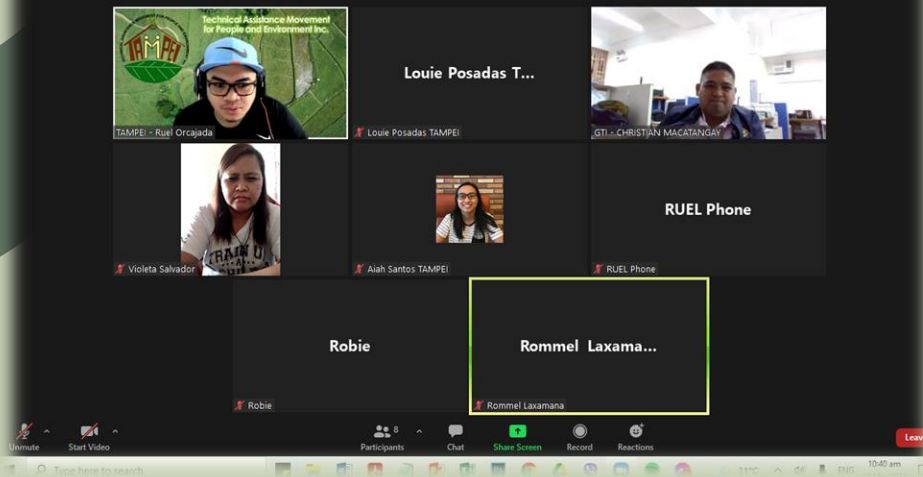
- Presented an overview of the ARA project
- Presented the situation of SAJUSSA community
- Action point: The dean will discuss the proposal with his colleagues especially since SAJUSSA needs a more comprehensive approach focusing on structural and engineering solutions



March 08, 2022 Meeting with Prof.Lestelle and Prof. Helli of U.P ICE.

- They will give advice on the drilling company we will choose by Thursday March 10, 2022.
- Next is to contact the drilling company after they gave their advice by Friday March 11, 2022.
- They will forward the email of TAMPEI as a recommended company for internship for their students.
- They suggested to seek advice from a Hydrologist regarding the flooding situation of the community.
- Added them in the loop thread of email with the drilling company, so that they will be able to ask some information such as photos and they could start their recommendations.





March 18, 2022 Meeting with Geoscience Technologies through Eng. Christian Macatangay

POSSIBLE TIMEFRAME:

- April 11-12 = mobilization (entry to community) + setting up of offshore drilling platforms, etc.
- April 13 = start of drilling operations (2-3 days per borehole x 3 boreholes = max of 9 days)
- 7 days for laboratory tests
- Total of 1 month (estimated turn-over of results by May 13)
- Final dates and availability of machines to be confirmed by Engr by next week Tues Mar 22

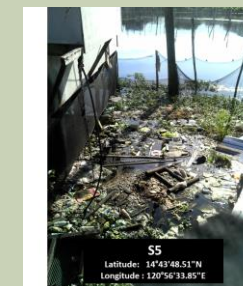
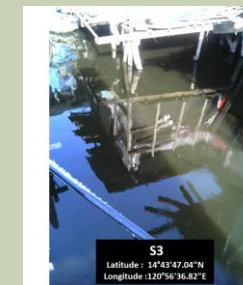
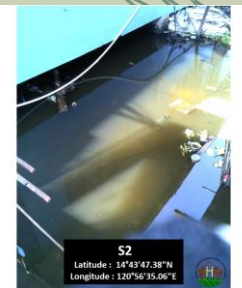
COSTS/QUOTATION:

- 30m depth = mas mabuti nang malalim kesa mababaw ang drill kasi dating farmland and submerged underwater ang area so malaking tendency na malambot eto
- Rate only = may be availed but not included in the basic package
- Bangka service = literal na bangka na gagamitin in transferring the drilling platform from one location to another (dahil walang malalawak na road networks in DRCNAI)
- Send 30% downpayment (P105k) one week before date of mobilization; target is before Apr 8 (deadline of finance reports to ARA)

NEEDS:

- approval/coordination/participation of community
- road/parking space for truck
- location of boreholes (take GPS coordinates and pictures during site visit next week Wed Mar 23); requirement is some space na magkakasya ang drilling platform (3x3m to 4x4m in size)

Possible Location of holes for Soil test



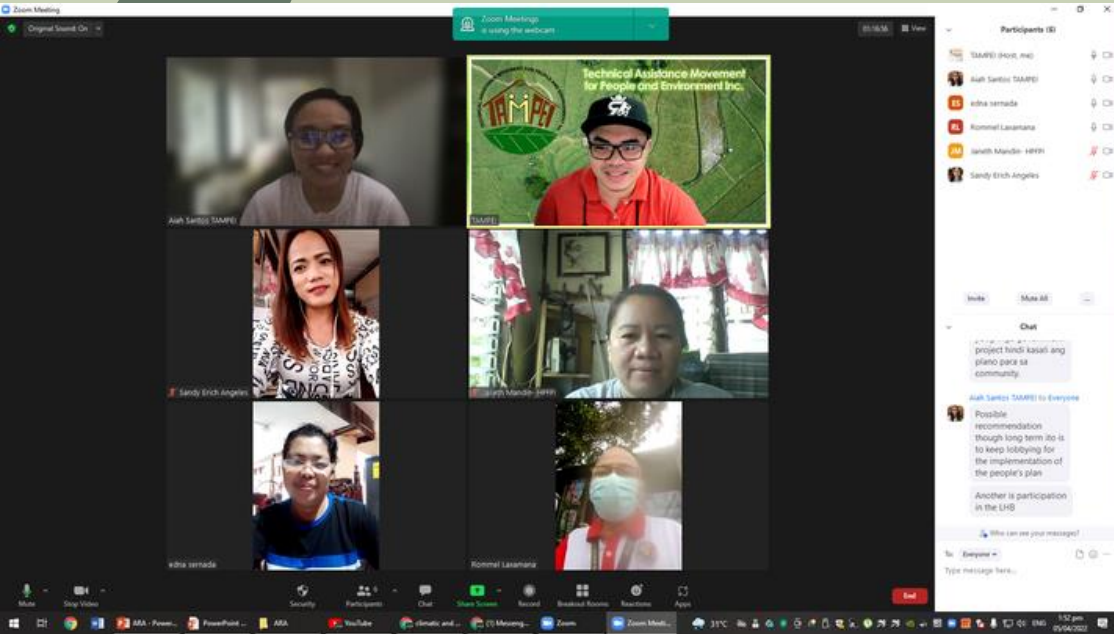
March 23, 2022 Site Visit

- Discussed with leaders about the soil test activity under the ARA Project
- Pin point of the GPS device the 6 possible location of bore hole for soil test as suggested by the drilling company
- Took up some footages of the site for the ARA Video



March 23, 2022 Site Visit with LIRLAP Team

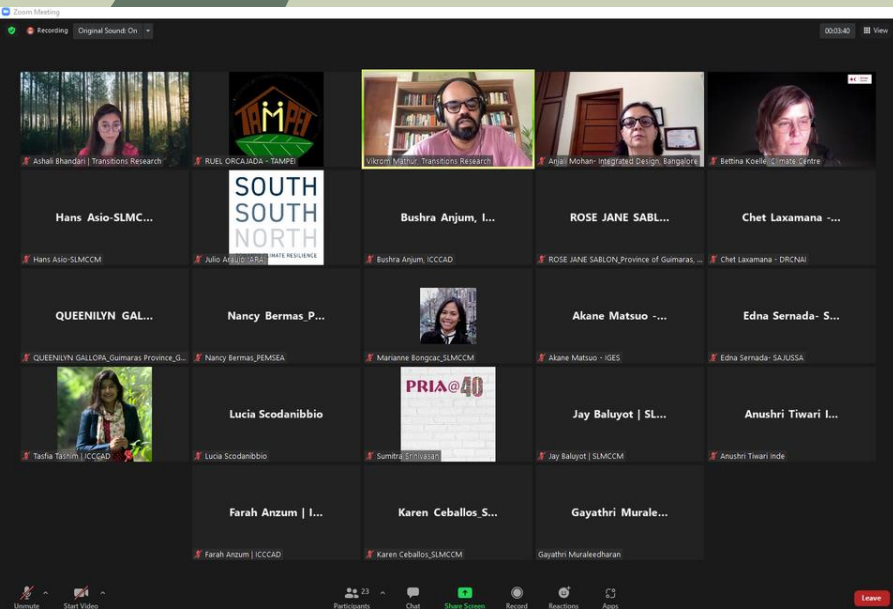
- Discussed with leaders about the LIRLAP Project (Linking Disaster Risk Governance and Land-use Planning) with researcher from UP SURP, Technical University of Dortmund and University of Stuttgart
- The possibility of linking this project to the ARA by means of their expertise about hydrology.



April 05, 2022 Preparatory meeting for ARA Internal Workshop

- TAMPEI facilitated the preparatory discussion for the incoming ARA Internal Workshop, attended by representatives from DRCNAI and SAJUSSA





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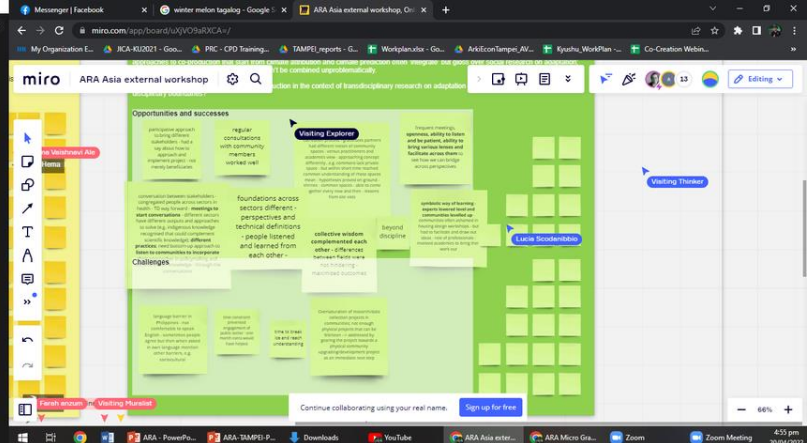
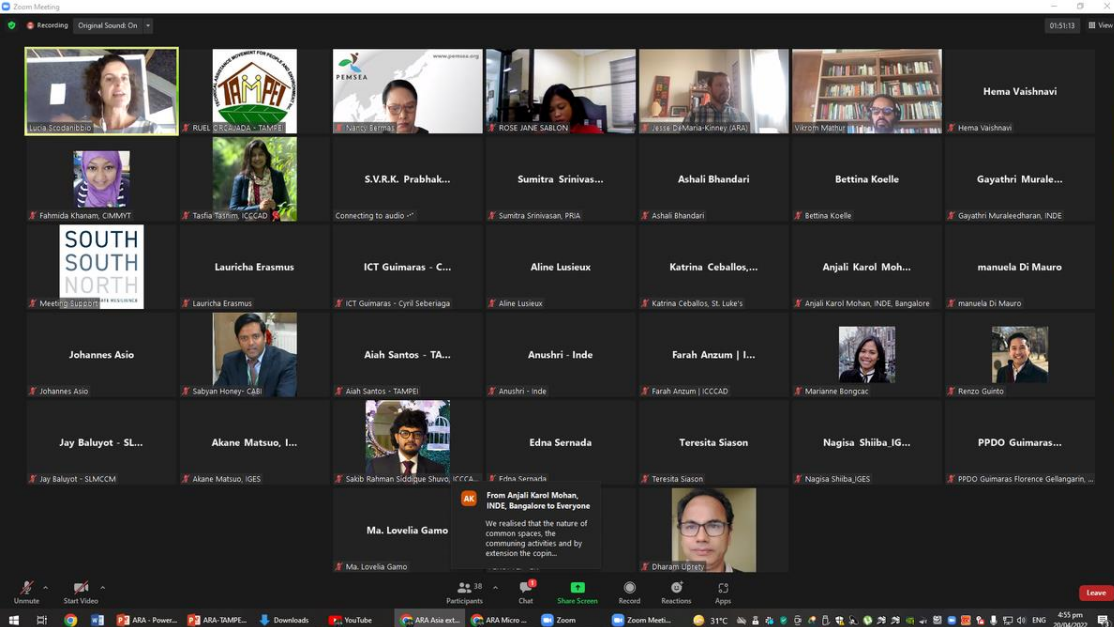
Logos: TAMPEI, UKaid, PEMSEA, and a logo for the Technical Assistance Movement for People and Environment Inc.

Technical Assistance Movement for People and Environment Inc.

www.pemsea.org

April 05, 2022 ARA Micro Grants Internal Workshop

- TAMPEI together with representative from DRCNAI and SAJUSSA attended the workshop.



April 20, 2022 ARA Micro Grants ASIA External Workshop

- TAMPEI together with representative from DRCNAI and SAJUSSA attended the workshop.
- TAMPEI presented and discussed and presented what are the success of the project and what would we change, the next activity is the break out room were the team was included on the Transdisciplinary group





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April 26, 2022 Start of Soil test

- The drilling company started the delivery of the platform for the drilling machine together with the 3 staff of the company
- TAMPEI coordinated the concerns of the community to the drilling company about the utilities and the accommodation of the staff that will work on the drilling





April 27, 2022 to May 24, 2022

- Geoscience Technology did the 3 holes for the soil boring test for the community.
- 3 separate holes drilled for the test, located on the north side of the community
- Upon the discussion with the soil drilling company the start of the hardest part is within the 17 meters depth.
- May 25 the equipment pull-out on the community



- Images of the on-going soil test

1. How does your project engage with these any of these four sites of co-production?



- 1a) How do we value local, indigenous, experiential knowledge - so kwento more about how we incorporate existing community systems in place
- We always value the participation and initiatives of the community, respecting their views, incorporating their ideas. Levelling of ideas from their views and expert view, translating and explaining technical terms that they will understand
 - DRCNAI- we always value the existing initiative and plans of the community such as the landfilling plan
 - SAJUSSA- Existing initiatives such as the urban gardening
- 1b) How do we do transdisciplinary adaptation research - oks na iyong explanation on the involvement of experts from various fields thru academic linkages
 - DRCNAI- U.P Institute of Civil Engineering, LIRLAP Project (Linking Disaster Risk Governance and Land-use Planning) with researcher from University of the Philippines-School of Urban and Regional Planning, Technical University of Dortmund and University of Stuttgart
 - SAJUSSA- University of the Philippines Civic Welfare Training Services of School of Economics and College of Architecture
- 1c) Knowledge, adaptation policies and planning - dito tayo medyo lacking; we have the knowledge pero we cant translate/penetrate the govt language of crafting policies; so need eto tutukan



1d) Knowledge ecosystem - parang same na eto ng lahat? hahaha summary of previous answers how we deal with the "ecosystem", meaning coordination with various stakeholders



2. What challenges have you faced while engaging with these sites?


- 2a indigenous knowledge - say since "not scientific" minsan hindi pinaniniwalaan ng other parties
- 2b transdisciplinary - ok na iyong explanation on UP ICE and AdDU-SEA + other partners
 - DRCNAI – Late start of the soil test/boring test cause the result will be the basis of the recommendations from the U.P Institute of Civil Engineers for the site development and housing design
 - SAJUSSA – We tried to have a partnership with Ateneo de Davao School of Engineering and Architecture but they are not ready yet ready to take part on this research, that's why we think of incorporating the result of the proposals of the student from U.P CWTS-Arki and Econ
- 2c policies - ayun, still not widely accepted, but somehow gaining recognition na rin naman ang CB-DRRM (as cited in RA 10121 DRRM Act of 2010, may specific provision doon about community participation) -- relate to ICORE training lessons
- 2d ecosystem - need ng equal treatment for co-production of knowledge; na hindi na lang topdown but more bottom up hahaha knows nyo na yarn iexplain HAHAAAAHA

3. How have you overcome these challenges? What support do you need to address them?

- SAJUSSA – We incorporate the proposal of the student from the U.P CWTS
- The issue of the community terms of the government project "Build,build,build" that will have a huge effect on their community they will still continue to lobby for the "Peoples Plan Approach" through the City Local Housing Board
- DRCNAI – We have some delays in terms of finding the right company/contractor for the soil test, we need also to take the advice from our partner U.P ICE to whom we will choose. But we still manage to get the right contractor and work start on April 28,due to the bulk of infrastructure project here in metro manila specifically the Subway.
- siguro yung mismong model house after the Geotech research and site planning
- #3 question mej di ko nasubaybayan in detail ang project progress, but yeah, explain lang ano mga naging interventions natin sa delays, etc. and baka sa "support" need ielaborate next phases, hahaha baka may additional funding


What were the two biggest successes of your project?



- Through the results of the geotechnical engineering research, the DRCNAI community will finally be able to integrate appropriate structural design solutions to their proposed housing units along with proper site planning and development strategies in the context of climate change adaptation.
 - Aside from the commissioned geotechnical research component of the project, TAMPEI was able to tap free academic consultancy from the University of the Philippines Institute of Civil Engineering (UP ICE). As an offshoot of the partnership, the two institutions will be collaborating for an upcoming student internship program where UP ICE will extend technical assistance to TAMPEI and its partner communities.
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What would you change or do differently next time



- We will proactively looking for more responsive partners instead of focusing more on the local university, this the case that we experienced in Davao City
 - We will much more pro-active in dealing with the soil testing company due to the delays of start of the testing
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Maraming Salamat



