Report

From Power to Foresight: Reimagining Pathways of Land Use and Water Governance Futures

Heidi D. Mendoza[1],[*], Shermon O. Cruz[2]

[1]*Institute for Environmental Studies, Vrije Universiteit Amsterdam ,De Boelelaan 1105, 1081 HV Amsterdam*
[2]*Center for Engaged Foresight, Philippines*

Abstract

How might futures of land and water governance systems emerge from foresight processes? This paper explores how a multi-stakeholder group used foresight processes to reimagine landscape governance in the Philippines. Landscape governance as a natural resource management framework is not at all new, but it is gaining attention and momentum especially in developing countries. In 2018, alliances of Civil Society Organizations (CSOs) in the Philippines embarked on a landscape governance effort to influence policy and decision-making processes both at a landscape and national level. However, the alliance acknowledged that to better influence policy processes, the alliance has to tap and harness collective intelligence, and maximize their collective foresight. This case study focuses on exploring foresight methods, questioning underlying assumptions, reimagining future scenarios, and rethinking pathways to the futures of Philippine land use and water governance as two critical aspects of landscape governance. The emerging scenarios for land use posit the alliances' aspirations for community-powered agricultural transformations for the next 50 years, and transformations that can promote human-conscious artificial intelligence, and biosphere-led ecosystems. On the other hand, the emerging scenarios for water governance detailed an eco-efficient, indigenous-centric, multi-purpose and cooperative-led water infrastructure, distribution and access systems. The foresight process revealed that diverse worldviews and narratives challenge and reframe default ways of knowing and embodying land use and water governance. Ultimately, the foresight process challenges how current landscape governance planning, and visioning provide power for the alliance to influence policy and decision-making processes in longer-time horizons.

Futures Literacy and Building Alternative Future Environments

Futures thinking is not about crystal ball gazing or prophesying to predict the future. Futures thinking is a rational, creative, reflective, and contemplative process of engaging citizens to be aware of and to question their ways of knowing the future to create contingencies, alternatives, strategies to innovate, and transform today. As a process, it invites participants to know that our worldviews and contexts create value (Cruz, 2020). The goal in futures thinking is to make sense of thinking and meaning in questioning and disturbing the way people anticipate the future. The values and the stories that we create and share with others, personal or collective, create futures (Inayatullah, 2017).

Using the future to innovate the present requires the understanding and application of a spectrum of futures literacies (i.e. knowledge of futures theories, concepts, tools and techniques, games, applied futures). It is the same with history where we focus the study or analysis of the origins and implications of the past to the present and extrapolate this into the future, futures thinking utilizes our capacity to anticipate and imagine plural possibilities to transform strategies in the present. As a skill set, futures literacy, such as reading and computer literacies, it is the ability to use imagination to anticipate and create the future in different ways. Futures literacy is a capability, a

* *Corresponding author.*
 E-mail address: h.d.mendoza@vu.nl

competency that employs and builds on human beings' natural capacity to foresee and imagine the unknown unknowns to innovate the present. Futures literacy is the ability to anticipate and create invisible stuff – the future – through improvisation, experimentation, and invention (Miller, 2018). Futures literacy uses collective intelligence and through a futures literacy laboratory process, futures literacy workshops unpack and make obvious an otherwise dormant assumptions of the future. Futures Literacy laboratories are spaces where participants learn and experience the different ways of using the future and the different kinds of futures (Miller, 2018).

This paper explores how foresight processes can enhance futures literacy, focusing on reimagining futures for land use and water governance in the Philippines. In the next section, the research rationale is provided, together with an overview of the Philippine land and water governance situation. The following sections will then discuss about the stakeholders involved in the process, and the detailed methodology. The results section will provide the results of the foresight processes, and the backcasted strategies for each scenario. In the end, the paper leaves prompts for engaging in critical foresight research and for foresight practitioners.

Land and Water Governance: The Philippine Context

According to the 2014 land classification report of the Forest Management Bureau (FMB) of the Department of Environment and Natural Resources (DENR), the Philippines has 14.1M hectares (47.3%) of certified alienable and disposable land; and 15.8M hectares (52.7%) forestlands (Wagan, 2020). In 2018, the National Mapping and Resource Information Authority (NAMRIA) released that the country only has 7M hectares of forest cover; 2M hectares (28.9%), 4.6M hectares (66.8%), and 303,373 (4.3%) hectares for closed, open, and mangrove forests, respectively. While the FMB reported an increase of almost 175,000 hectares from 2010 to 2015, the Philippine forests are still under pressure from deforestation, and degradation. The key drivers of deforestation, and forest degradation, as reported by the FMB, include forest products extraction, agricultural expansion, and infrastructure expansion.

On the other hand, the Japan International Cooperation Agency (JICA) and National Water Resources Board (NWRB), estimated available water in 2018 to be at 54,556 MCM/year, as compared to the projected water demand of 91,432 MCM/year (Abaño, 2020). Projections for 2025 also show a gap between demand and availability; estimated water supply is at 60,586 MCM/year, while water demand is at 85,401 MCM/year. Looking at the competing sectors for water resource, NWRB data showed that agriculture sector accounts for almost 80% of the total water use in the country. Moreover, average irrigation water use efficiency is less than 40%, and in predominantly rice-based cropping systems, water use efficiency is even lesser (Luyun, 2020).

Both land, and water resources are under pressure from anthropogenic demands and pressures; at the same time, conflicting governance measures. Land resources still need to be properly identified, and accounted for, as critical inputs to land governance and management. For water resources, there are 38 water-related agencies with weak collaboration frameworks (Abaño, 2019).

Land and Water Governance in a COVID-19 World: Reimagining Futures in a Disruptive Time

At the onset of the pandemic in March 2020, one of the critical questions that countries had to answer was how a novel coronavirus came about. Recent epidemiological studies released statements that SARS-CoV-2 likely originated from bats, and suggested exposure to humans in a wet market in Wuhan, China (Liu et al., 2020). This finding implies that a stronger natural ecosystems-human systems frameworks, and governance mechanisms must be put in place to prevent further epidemics, and pandemics from happening.

Before COVID-19 closed borders, and disrupted ways of doing, the environment sector was on one of its utmost momentum in years. In March 2019, the United Nations (UN) General Assembly declared 2021 to 2030 as the "UN Decade of Ecosystem Restoration" (UN, 2019)[5]. The decade of restoration is designed to prevent, halt, and reverse the degradation of land and water ecosystems.

In the Philippines, before COVID-19, some of the major environmental issues include the pending construction of Kaliwa Dam in Southern Sierra Madre, affecting three provinces namely Quezon, Rizal, and Tanay. In Palawan, stakeholders have ongoing discussions whether dividing the province into three provinces can bring about more meaningful local development to communities. Persistent land use and water issues brought about by uncontrolled,

and unmonitored agricultural expansion to forest areas also emerge as critically important landscape issues.

Issues on land and water governance cut across other thematic issues including halting deforestation, addressing land tenure, improving food security, improving water quality, and addressing impending water shortages in certain parts of the country. While most of the sectors are fully tuned in to addressing challenges in public health, soon enough sectors will have to address how to work better in a new normal. Sectors will have to ask questions on what paradigms, and directions to take to ensure that systems are resilient in the light of a new disruption.

Specifically, COVID-19 puts land governance in a light where it must reimagine how to ensure food security, while also maintaining the integrity of ecosystems. What kinds of practices, and technologies must be put in place to increase farmers' yield, while also keeping in mind the possible tradeoffs to the ecosystem. Looking at land use, and food security as also an issue of logistics, COVID-19 has placed heavy pressure on the system - with the quarantines, and strict mobility requirements in place. COVID-19 has highlighted the importance of local, and small-holder farmers in the value chain, and how farmers can directly benefit from their produce (Gregorio, and Ancog, 2020)[6].

COVID-19 also highlights the need for a more collaborative water governance framework. In a presentation, Republic Act No. 11469 (R.A. 11469) or the Bayanihan to Heal as One Act, the National Water Regulatory Board (NWRB) was emphasized to highlight its function to conserve, and regulate water use considering the pandemic (Abaño, presentation, 2020). On top of this, the water sector also faces impending challenges brought about by climate variability.

Futures literacy in a disruptive time - when complexities of issues arise and go out of their usual boundaries - offer opportunities for people and institutions to anticipate and to rethink the kinds of futures that they can have and want.

Setting the Tone for Philippine Landscapes: Why Do We Need to Talk about Futures?

During 2018, select landscapes in the Philippines – Sierra Madre, Palawan, Misamis Oriental, and Bukidnon – embarked on a Sustainable and Inclusive Landscape Governance (SILG) journey. SILG is a three-year project implemented by Forest Foundation Philippines, and funded by Tropenbos International. The project aimed to introduce the concept and elements of landscape governance; facilitate multi-stakeholder, multi-level dialogues directed towards identifying good practices, and policy recommendations; and influence decision-making processes in the landscapes in terms of improving landscape governance.

Since 2018, the project has been facilitating iterative, and participatory landscape and national level dialogues. One of the emerging challenges for stakeholders was to envision futures, and how to strategize towards building their preferred futures. In this light, a six-session online foresight capacity development program was developed for the dialogue participants. The program focused on two major landscape elements – land, and water governance. The sessions took on several insights and highlight points from the dialogues. Some of these include working within uncertain policy spaces; anticipating drivers of, and actual changes; identifying who plays a bigger role in building futures; and rethinking current strategies both at organizational, and alliance levels.

Focus and Scope

The multi-stakeholder group was capacitated on the basics and practical applications of foresight for continuing, and reimagining environmental governance work. Overall, the workshop was designed to introduce futures thinking and learn by doing anticipatory tools and techniques to explore water and landscape governance futures. Specifically, the capacity building sessions sought to provide:
- ● overview of how foresight plays an integral role in initiating and continuing plans, programs, and networks;
- ● enable participants ideate on possible, probable and preferable futures for their individual organization, and the existing multi-stakeholder network;
- ● equip participants with the skills to apply basic principles of foresight in their regular environment work.

The theme of the foresight capacity-building is *"Continuing landscape governance work amid and post COVID-*

19" with sub-themes of land conversion: reimagining sustainable practices; water governance: reimagining water uses, and practices; landscape approaches: reimagining Philippine landscapes.

Ultimately, the foresight capacity development sessions aimed to bring together the stakeholders to co-create their preferred futures. Specifically, the sessions were designed to: introduce the concept of futures thinking; give participants quick hands-on experiences on foresight methods, and tools; and imagine preferred future scenarios and identify immediate action points that participants can do within their organizations.

The sessions were attended by 24 participants; majority from Civil Society Organizations (CSOs) from Sierra Madre, National Capital Region (NCR), Palawan, Misamis Oriental, and Bukidnon, and minimal participation of Local Government Unit (LGU) representatives from Sierra Madre. Sessions were conducted through Zoom, and the hands-on activities were augmented by using Mural, Miro, and Menti.

Methodology

The workshop was sub-divided into three phases: Reveal tacit to explicit assumptions of the future; Reframe anticipatory assumptions of the future; and Rethink, Reflect, and Discern.

Phase 1 involved activities that allowed participants to reveal or make obvious their initial assumptions, perceptions, and imaginations of water and landscape governance futures using the futures triangle. From the emerging themes in Phase 1, participants then underwent a learning process of reframing by playing their assumptions using the dreams and disruptions game and building preferred futures scenarios. Phase 2 was designed both to introduce foundational but powerful anticipatory tools and processes; and to provide a hand-on experience on using these methodologies. Lastly, Phase 3 was designed to help participants make sense of their earlier workshop experiences, and discern from the future to create meaningful, novel, and even radical strategies to achieve the long-term futures envisioned. This phase drew from the participants' experiences, outputs and insights from the previous sessions by using backcasting, guided-visioning, and intimate futures.

Workshop Results

This section provides an overview of the results of the session on Futures Triangle. The Futures Triangle puts forward three key dimensions of the future. The group was divided into three, where each group was tasked to map the pushes, pulls, and weights of land and water governance futures in the Philippines.

Pulls of the Future

The participants mapped what they believed were low-hanging fruits for the future; and also the compelling futures for land and water governance in the country. The group's pulls of the future map emerging themes on community engagement, development plans and technological innovation, and reframing narratives. Some of the specific pulls on community empowerment include transitioning from empowerment to emancipation; promoting more meaningful participation, and inclusion; designing alternative livelihoods that can enhance forest protection, and rights; and formalizing safe avenues for advocacy and dissent.

Emerging themes on technological innovation are also anchored on improving community engagement through supporting society-centric technologies; community-driven national and local development plans; improved access to technologies; biological solutions to land-related issues; and harnessing biosphere technologies for increased resilience. The participants also identified that futures should have more heterogeneous preservation and conservation narratives.

Pushes of the Present

When asked to map the pushes of the present, the participants' highlighted the following themes: international agreements, improper implementation of policies, short-term strategies for long-term issues, and tapping the potential of big data and scientific breakthroughs. The participants identified the Paris Agreement, and the Sustainable Development Goals (SGDs), among many others, as critical elements of the present that transcend to

the future. They also identified how current strategies of addressing long-term development issues are usually insufficient, and non-systematic in nature. Moreover, they agreed that the current data and information ecosystem is key to increasing the country's capacity to innovate, connect, and improve learning opportunities.

Weights of History

This dimension of the future, as depicted by the participants, seemed to be the most value laden. The weights of history point primarily to corrupt values and systems such as nepotism; political dynasties; corruption; culture of impunity; high dependence and fascination with western knowledge and science; prejudice and disrespect to Indigenous knowledge and systems; and sexism and discrimination.

The participants also identified long-standing systems of unabated deforestation; low support for technology development and deployment; reactionary, and poor urban planning; homogenous and binary narratives on development and conservation; and poor land and water management and governance systems.
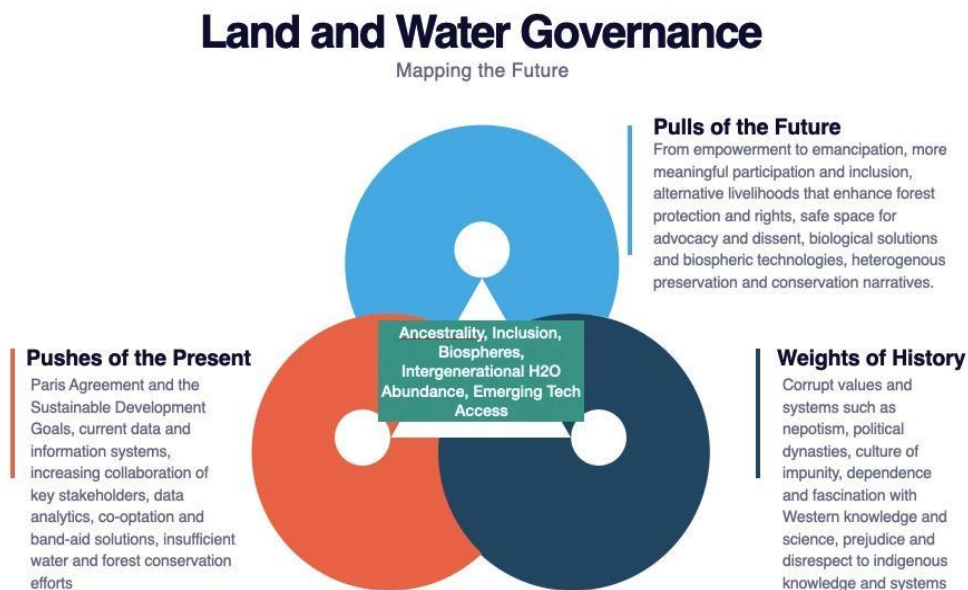

Fig. 1: Land and water governance plausible futures

This session opened conversations on revisiting assumptions and values and rethinking the individual's preferred futures. With a more holistic visualization and understanding of how the dimensions of future both shape, and unmold the futures, the participants were able to distance themselves from their long-standing perceptions of time. The resulting emerging themes play a critical role in the participants' scenario development processes.

Preferred Futures for Land, and Water Governance

This section describes the resulting preferred futures of the groups. The participants were divided into two groups, and each underwent the above-mentioned processes to arrive at their preferred futures. Each group had a maximum of 12 participants, and a mix of Civil Society Organizations, and Local Government Unit representatives.

Land Governance in 2070
Agriculture 7.0: Biosphere, Indigenous Regeneration, and Humanized Artificial Intelligence (AI)

In 2070, the Philippines had already reached Agriculture 7.0. It has undergone several agricultural revolutions – from the industrial revolution (Agriculture 2.0). The major drivers of change and inspirations of revolutions include perpetuating social injustice, and observable degradation of the environment. On the other end, the country was also inspired to advance its agricultural paradigm, because there has been a massive increase in technological advances, coupled with smallholder farmers' clamor to reframe their narratives, and roles in the society.

A normal day in 2070 paints a picture of a then marginalized smallholder farmer, to being an empowered, and self-actualized farm owner. Farmers are no longer tied to their farming activities; but they also have opportunities to do other passion projects such as arts, business, technology development, among many others.

This scenario is made possible by years of harnessing a culture of interdisciplinary work among national and local government agencies such as the Department of Agriculture (DA), Department of Environment and Natural Resources (DENR), Department of Science and Technology (DOST), Department of Trade and Industry (DTI); state universities and colleges (SUCs); CSOs; private sector; and individuals. This interdisciplinary culture of working together has helped the country assemble an open central database that provides real-time datasets, and information on land cover, land use, and zoning. The envisioned database is maximized by all stakeholders, especially that of the government as they improve local development plans, and long-term national plans.

On top of a working monitoring system, and an open database, the government also provides full support to Indigenous Peoples by recognizing their rights and granting them land titles. All these elements in place enable local and Indigenous farmers to take over the market, such that consumers know where their food supplies come from; and that farmers are driven by the demands of markets.

The agriculture sector has also advanced greatly by using AI technology in helping farmers prepare their farms, and make their farming systems climate-smart, and data-driven. While there were difficulties in pushing for AI-enhanced agriculture, the country was able to overcome it by emphasizing on building humanized technologies designed to help humans improve their social roles, and decision-making skills, instead of eliminating these processes.

Furthermore, Agriculture 7.0 in 2050 is supported by national laws that stipulate, and mandate LGUs to establish their own local biospheres. These biospheres are used for both research and development and actual biospheric ecosystems. The biospheres are used as controlled environments for agricultural areas; as well as immediate rescue and relief stations pre-, during, and post-calamity situations.

Backcasted Strategy

To pave pathways towards Agriculture 7.0 in 2070, the participants employed a backcasting strategy. They subdivided the timeline into four major phases: 2020, 2030, 2050, and 2065. Participants identified available resources, policies, and other enabling mechanisms for land governance in 2020. Some of these include the country's existing Freedom of Information (FOI) for government projects; access to financial resources for planned urban agriculture; green technologies; operationalizing integrated ecosystems; Philippine Space Agency; framework for vertical farming; and grassroots planning processes. All of these were identified as critical steppingstones to steer the present to the group's preferred futures.

During 2030, the group identified possible outcomes, and new emerging enabling mechanisms which include the country's ability to harness nanotechnology for soil science; promotion of indigenous vegetable varieties; diversified staple grains; land use act enforced; increased financial support for agricultural research, technology, and development. With a 20-year gap, the group envisioned that the country will be celebrating the fifth agricultural revolution called Agriculture 5.0. This new revolution was envisioned to be made possible by positive agents of change. These change agents then provide opportunities for the improvement of cadastral land system; creation and implementation of roadmaps for non-timber forest products, nature-based solutions; development of 10 biosphere reserves, and new economic and food models. 2050 was seen to be a pivotal moment for the country as it will be able to harness research, and technology for the agriculture sector, and communities. Fifteen years later, in 2065, the group envisioned the sixth agricultural revolution. Agriculture 6.0 was envisioned to be the hallmark of rising humanized artificial intelligence for local communities and Indigenous Peoples; borderless land systems;

implementation of saltwater farming; and localized implementation and operation of biospheres for both production, and research purposes. During 2065, they key element will be humanized technologies for development.

Ultimately, the group's backcasted strategy outlined critical enabling mechanisms, tipping points, and drivers of change that lead towards the actualization of the seventh agricultural revolution - Agriculture 7.0 - where self-actualized local and indignous farmers take over markets, maximize land productivity with the use of humanized AIs, and adapt their farming systems to changing climate using local biosphere reserves.
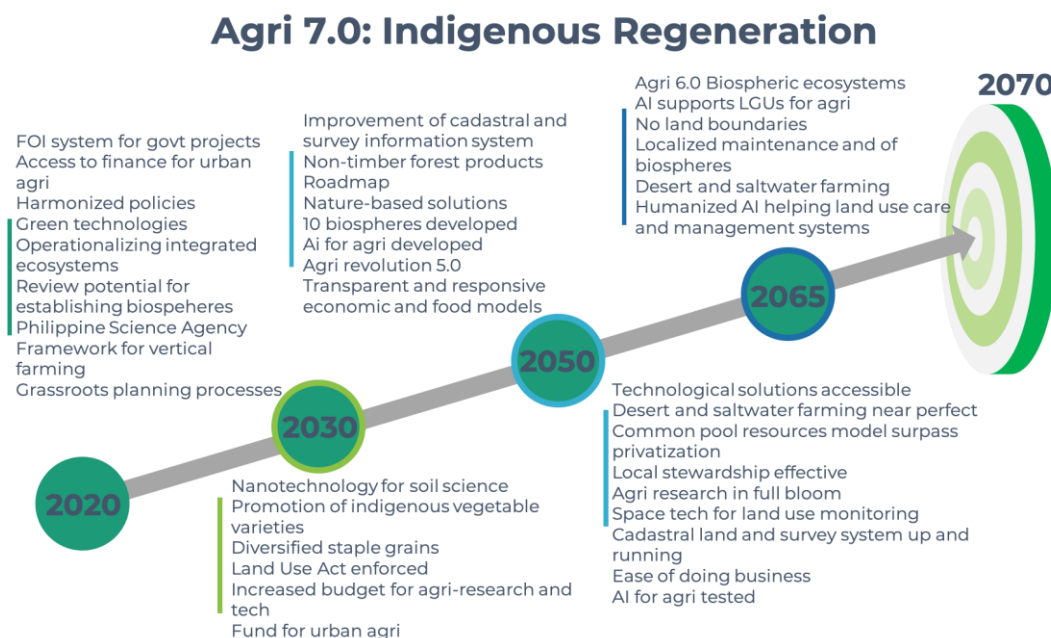
Agri 7.0: Indigenous Regeneration

2020

2030
Nanotechnology for soil science
Promotion of indigenous vegetable varieties
Diversified staple grains
Land Use Act enforced
Increased budget for agri-research and tech
Fund for urban agri

FOI system for govt projects
Access to finance for urban agri
Harmonized policies
Green technologies
Operationalizing integrated ecosystems
Review potential for establishing biospeheres
Philippine Science Agency
Framework for vertical farming
Grassroots planning processes

Improvement of cadastral and survey information system
Non-timber forest products Roadmap
Nature-based solutions
10 biospheres developed
Ai for agri developed
Agri revolution 5.0
Transparent and responsive economic and food models

2050

2065
Technological solutions accessible
Desert and saltwater farming near perfect
Common pool resources model surpass privatization
Local stewardship effective
Agri research in full bloom
Space tech for land use monitoring
Cadastral land and survey system up and running
Ease of doing business
AI for agri tested

Agri 6.0 Biospheric ecosystems
AI supports LGUs for agri
No land boundaries
Localized maintenance and of biospheres
Desert and saltwater farming
Humanized AI helping land use care and management systems

2070

Fig. 2: Backcasted strategy for land governance

Water Governance in 2030
Philippines as a Pioneer Exporter of Freshwater

During 2030, from a once highly vulnerable country, the Philippines can pivot this weakness to an enterprising strength – it is now the pioneer exporter of freshwater in the ASEAN region. Before reaching this state, the country underwent a series of massive policy revision, and restructuring frameworks for water use and supply. One of the major contributors to making this possible is the implementation of a country-wide decentralized watershed system. Back in the 90s, and early 20s, the country tried to harness community-based approaches for watershed management but proved to be of little value to improving ecosystem services. However, with a strong clamor from different sectors, the government focused on improving the strategy, and became successful by fully respecting the rights and responsibilities given to LGUs.

The Philippines is now featured in 2030 as a country with a water-literate population, and the most notable aspect is that even eight-year-old children are aware of where they source their water supply from, and how they are responsible for conserving water. Water-literacy is also one of the major drivers of improving the economic, social, and technological state of the country. As individuals become more concerned, and aware, they also changed their consumption patterns, which in turn encouraged private sector – especially those with power over water supply – to invest in more eco-efficient technologies, and structures. Some of these technologies, and structures include small-scale, and multi-purpose water harvester systems. These set-ups are available for both domestic, and industrial uses.

Having these technologies in place helped the country decrease their water usage and inspired the government

to design a water export framework. The water exporting mechanism benefits not only the consumer regions, but more so, the communities who conserve water, and protect their forests. The incentive mechanisms are directed towards incentivizing communities through communal monetary gains, and investing in improving education systems, and more local-level technologies.

Backcasted Strategy

The group identified pivotal moments for governance leading up to their envisioned water governance scenario for 2030. They identified critical enabling mechanisms in 2020 which included pending bills such as the National Land Use Act; pending legislation of a Department of Water; and other instrumental efforts such as Information, Education, and Communication (IEC) to improve the population's water literacy. During 2020, the group identified several changes in current systems which include integrating Indigenous knowledge in water management systems; investing in water literacy; rebranding Payment for Ecosystem Services; and increasing representation of local communities, and Indigenous Peoples in watershed management councils.

Three years after the identified changes, the group envisioned major breakthroughs during 2025. These breakthroughs include the country's capacity to position itself as the global leader in hard and soft technologies for water, specifically those of desalination technologies, sustainable packaging and filters, and water innovation prototypes. Moreover, the country has also mitigated effects of deforestation, and land conversion.

During 2028, the group outlined instrumental policies that can pave way for their preferred future. These policies support local and Indigenous communities; national and community levels of water control; creation of cooperatives where Indigenous communities can partner with private sector, and where they can collectively set up sustainable water farms; technologies to harness water use and supply. These technologies were envisioned to focus on harnessing weather control from space, and large-scale operations of transforming deserts or barren lands to forest areas.

Fig. 3: Backcasted strategy for water governance

Considerations for Preferred Futures

The discussions on preferred futures are not conflict-free; but they are always value-laden, and each participant is struck with personal questions, and the dilemma of what kinds of futures to imagine. It is important to note that the composition of the group is highly diverse and provides various views, sentiments, and values of CSO

representatives. Both groups considered the following elements to be critical aspects of both the scenario-development process, and preferred futures: inclusivity; sustainability; human empowerment; and science as guide for policies.

Inclusivity in the context of futures thinking entails and requires a careful and mindful planning of the representatives to be included in the discussions; after all, the future should be a time, and space when, and where everyone can relate, and contribute to. The group emphasizes on including local communities, Indigenous Peoples, and other marginalized sectors in the conversations, and exercises to ensure that their values, culture, and aspirations are taken into consideration. Sustainability refers to taking into consideration not only needs of humans, but also, the capacities of ecosystems to sustain life on earth. This sustainability framework entails questioning current ways of thinking and doing.

Human empowerment as a consideration for preferred futures highlights humans' innate longing to overcome shocks, and uncertainties that might put human life in danger. This empowerment framework entails taking into consideration what emerging needs, and what existing gaps need to be addressed to capacitate people to keep building futures.

Lastly, the group emphasized using science as a guide for policies as one of the major considerations in drawing out their preferred futures. The group posits the need to better understand the world from a quantitative perspective, coupled with their lived experiences; and ultimately, be able to pivot policies to be in tune with what science tells us.

Sinews that bind

The action steps cannot be done in isolated settings or divorced from epistemic framework within which all of us exist (Inayatullah, 2010)[7]. The values that inform us drives the kinds of questions that we ask and futures we imagine. Futures other than it being factual and imagination-driven is also values-based. It has a strong focus on enhancing and deepening wisdom and resolving deeper issues of the heart, discernment, legacy, and conscience. These values and worldviews are the sinews that binds, the ways of knowing that ties the spheres together, that gives strength, that sustains the effort to achieve the preferred futures and take foresight forward.

For this group, the emerging binding values are co-creation, critical thinking, agility, and sustainability. Co-creation includes other underlying elements such as collaboration, accepting shared responsibility, and devising strategies for co-management. Critical thinking embraces creativity, imagination, and the ability to redefine landscapes over time. Agility emphasizes the individual, and the group's patience, grit, and adaptability, especially to highly uncertain times. Lastly, sustainability anchors the team through consciously discussing integrity, and resilience of the landscapes; scalability, and replicability of strategies, and interventions; and the overarching sense of balance among different landscape elements.

Conclusion: From Foresight to Power

The resulting scenarios for land use posit the alliances' aspirations for several community-powered agricultural transformations for the next 50 years that can promote human-conscious artificial intelligence, and biosphere-led ecosystems. On the other hand, an eco-efficient, indigenous-centric, multi-purpose and cooperative-led water infrastructure, distribution and access systems were desired as the futures of water governance. The foresight process revealed that diverse worldviews and narratives challenge and reframe default ways of knowing, imagining, and embodying water and land use governance futures. Ultimately, the foresight process challenges how current landscape governance planning and visioning provide power for the alliance to influence policy, and decision-making processes.

While the envisioned futures seem to be both challenging and somewhat a representative and response to current realities, how will these futures differ as the group opens their spaces for other sectors? How will these futures vary as conversations become more diverse and inclusive? Whose aspirations can get more weight in the discussion? With these advocacies and uncertainties on hand, one of the ways the group can take the visions forward is to keep on investing time in the present to shape the future that they collectively envision. Most importantly, the group's next major task is to get more members of varying communities and sectors currently with an unaligned agenda to join the conversation. Will any of these preferred futures find its way in the coming years of land and water

governance?

Acknowledgements

References

Abaño, S. (2019, August 1-2). Water Provisioning: Policies, Programs, and Challenges on Water Resources in the Philippines. [Conference presentation]. 2nd National Environmental Dialogue, Philippines.

Abaño, S. (2020, September 23-25). Updates on National Water Governance Framework, and Policies. [Conference presentation]. 3rd National Environmental Dialogue, Philippines.

Cruz, S. (2020). What is Futures thinking and why futures literacy? https://www.engagedforesight.com/what-is-futures-thinking-why-futures-literacy/

Inayatullah, S. (2010). Emerging World Scenario Triggered by the Global Financial Crisis. World Affairs: The Journal of International Issues 14 (3): 48–69.

Inayatullah, S. (2017). Gaming, Ways of Knowing, and Futures. Journal of Futures Studies, 22 (2). http://www.metafuture.org/library1/FuturesStudies/GamingWaysOfKnowingFutures.pdf

Liu P, Jiang J-Z, Wan X-F, Hua Y, Li L, Zhou J, et al. (2020) Are pangolins the intermediate host of the 2019 novel coronavirus (SARS-CoV-2)? PLoS Pathog 16(5): e1008421. https://doi.org/10.1371/journal.ppat.1008421

Luyun, R. (2020, September 23-25). Water in Agriculture: State of the Country [Conference presentation]. 3rd National Environmental Dialogue, Philippines.

Miller, R. (2018). Sensing and making-sense of Futures Literacy, Towards a Futures Literacy Framework (FLF). Transforming the Future, Anticipation in the 21st Century. UNESCO & Routledge Taylor and Francis Group. https://www.taylorfrancis.com/books/9781351047999

SEARCA. (2020). Impact of COVID-19 pandemic on agricultural production in Southeast Asia: Reinforcing transformative change in agricultural food systems. SEARCA: Policy Papers Vol. 2020 No. 1. Philippines. https://www.searca.org/pubs/briefs-notes?pid=468

United Nations. (2020). Preventing, halting and reversing degradation of ecosystems worldwide. https://www.decadeonrestoration.org/

Wagan, L. (2020, September 23-25). Drivers of Deforestation: Policy Framework at the National Level. [Conference presentation]. 3rd National Environmental Dialogue.