

Supplementary Information

Supplementary Table 1. Names of Interviewees and affiliations.

Interviewee	Affiliation
1 & 2	Guandu Nature Park Managers (management personnel and conservation personnel)
3	Forestry Bureau Director
4	Taipei City Government Hydrology Department Director
5	Wild Bird Society Secretary General
6	

Supplementary Table 2. Results of interviews showing the scores for each indicator provided by Guandu Nature Park managers. Scores from interviewee 1 are written in regular text, and scores from interviewee 2 are written in italics.

Criterion	Recording	Rationale	Score
1.1 (Identification and prioritization of societal challenges)	<p>[07:20] <i>But for the first question, I would rate it as adequate. Why? Because the general public now has positive support for nature and environmental protection.</i></p> <p>[07:34] <i>This aspect is actually something that most people will mention, so the above part reflects positive support. This part is something that most people will mention. So, if we say that urgent social challenges are given priority, for example, large-scale developments will require environmental assessments, with legal regulations as a basis for adjustments.</i></p> <p>[07:47] <i>However, in practice, there are still concerns about the execution. That's why I didn't rate it as strongly, but it is still adequate. There is a mechanism in place, but whether this mechanism is perfect still requires much consideration.</i></p> <p>[08:01] <i>At this stage, if regulations are in place, with input from many so-called experts, scholars, or practitioners, and discussions with local residents, it seems that good outcomes can be achieved.</i></p> <p>[09:21] <i>Basically, although there are mechanisms such as environmental monitoring before construction or before development happens within Taiwan, those mechanisms are very... like there's improvement to be made for those mechanisms. So he will not give it a strong, so he would choose adequate only. Majority of society would agree that environmental protection is necessary and important but when we put in a balance between development and making money, the development and making money will always win. There are always cases within Taiwan where development takes place before environmental protection. So he thinks there are mechanisms within place it's still not as effective as they should be. So he will only give it an adequate.</i></p>	<p><i>There is effort into putting mechanisms in place. However, further improvements in execution are needed because the majority would rather side with development.</i></p>	<i>Adequate</i>
1.2 (Documented societal challenges)	<p>[11:18] <i>And this can only be rated as partial because there's an interesting point: usually, the development side doesn't communicate all the necessary key details to everyone. For example, take green energy, it's said to be clean energy and capable of generating a lot, but that's the only part people hear.</i></p> <p>[11:31] <i>And it can also achieve net-zero emissions and reduce carbon, but green energy has gray areas and questions at both the initial production stage and the final recycling stage.</i></p> <p>[11:43] <i>These aspects have not been fully communicated to the general public, and even organizations like Taipower have not sufficiently communicated to everyone, nor do they have a comprehensive mechanism to calculate and disclose all the costs to the public.</i></p> <p>[11:54] <i>So, it's just blindly promoted, and that leads to a situation where information is not transparent, or unequal information is being provided. Sometimes, this is the case as well.</i></p> <p>[12:07] <i>That is, so-called stakeholders, if translated as stakeholders and beneficiaries, may not have full access to the resources. You will hear positive things, but the subsequent issues may only emerge later, and the public will have to bear them, which is not something that was communicated beforehand.</i></p> <p>[12:20] <i>He believes that if there is development, not all the data will be rebuilt each time.</i></p>	<p><i>When new environmental policies, legislations, or frameworks are introduced both benefits and drawbacks need to be better communicated to the public to make more informed decisions</i></p>	<i>Partial</i>

	<i>[12:38] If there is a development, not every information will be revealed for example the green power and how the green power is produced and everyone knows the green power is good and there might be some problems not revealed to the public and so as the development. So everyone just look at the think that it is good but there are some problems not revealed.</i>		
1.3 (Identified human well-being outcomes)	<i>[19:57] Indicator species verifies, need to make sure which indicator species it can represent the ecosystem is and also to see if each area is okay or the usage of area. Like if the indicator species increase do we need to make the buffer zone larger. [37:01] If taking into consideration the human well-being then he would upgrade it to adequate but like for the biodiversity portion he thinks its partial. [39:51] So the evaluation, like questionnaires for the visitors. How do they they about the park, are they happy or not? And another benefit for the humans is when they are managing the farmland they will have some harvest, another benefit is for the flood (protection) and the ability to face climate change.</i>	<i>If putting human well-being and outcomes, these are expressed with questionnaires.</i>	<i>Adequate</i>
2.1 (Interactions between economy, society and ecosystems)	<i>[28:18] What I've written here is that, in fact, after it's established, it can help, although it says here about expanding the scope. [28:36] The part we manage could affect other regions, but in reality, there's a point where, well, it becomes a trend. [28:48] Sometimes things become popular, and local governments will start to want to do these things. For example, like cable cars, or previously common "Instagram-worthy" spots. [29:04] If it's something positive and spreads nationwide or even globally, that's fine. But it can also lead to a loss of uniqueness or the original distinctiveness of a place. [29:39] However, if it becomes solely about that one thing, it might lead to the neglect of other aspects, which could be problematic, as people's perspectives may be influenced by their vested interests. [29:53] So, in each system, when it comes to economics, society, and ecology, I would place this topic in a situation where it doesn't receive many points. [30:05] Of course, there's one point where it might need to be applied in practice. Earlier, I mentioned that wise use and practical application are very important. [30:45] If we could extend our experience from a local level to other counties and cities, even nationwide or internationally for exchange, [30:58] in that case, would our experience be considered very good? Maybe, but the question is whether others can apply our experience, which might not be possible because they may have unique local factors to consider. [31:12] So, we can use our experience to guide others in a positive direction. If I continue to think about this topic, we've actually scored pretty highly. [31:23] But whether others can achieve the same, that's their score, and we're not responsible for theirs. I just need to think about whether I can meet this myself, so I would give it a high score if it were my approach. [31:31] The park themselves know how to do this(upscale) but the way they do might not apply for every place so that's why didn't give a high score in this part.</i>	<i>The conservation department plays a crucial role in shaping the future direction of Guandu. When managing other areas, they carefully consider how their actions may impact the broader ecosystem. While they have the expertise to upscale their efforts, their framework may not always be applicable to other areas</i>	<i>Adequate</i>
2.2 (Complementary and synergies)	<i>[2:14:37] Because a lot of our projects for upscaling require corporate input so then we do annual pitches for new projects, and a lot of the time it's regular updates for the corporates or the government letting them know our plans for the future. Sometimes when we mention something, there's an interest and if there's an interest there's a possibility to do these projects in the future and because we have regular steering committee meetings so we let them know what we're working on right now and possibilities for future so when people know about these plans, then there's a possibility of going forward. And because we do regularly attend, we're part of the Wetland link International, it's an important international organization for wetlands, they hold bi-annual meetings so every 2 years this year they're holding one in Sri Lanka. So we we will go over and interact with other wetland managers and exchange ideas. [48:41] The entire Guandu Plain is really large like over 1000 hectares, so in terms of the government's perspective they keep 57 of protection for wild birds, the rest they would like to develop so it's very hard to sway them into protecting like an entire area but through the park we are able to maybe guide the public's direction in understanding that protection of wetlands or spaces like this is important for wild birds then maybe they can sway the government into protecting other areas within Guandu area but then we have you know our sway on the government is very limited thats why he is very conservative in majority of his answers. Because when he takes that into consideration, like there's a lot of pressure for us to upscale to influence other areas but then eventually it's really really hard to do in his opinion.</i>	<i>There is a lot of collaboration with corporate entities and the government, along with holding important meetings. Additionally, they also communicate with other wetland organizations through Wetland Link International. The government likes to develop areas while the Guandu Nature Park managers prefer environmental protection, but the</i>	<i>Strong Partial</i>

		<p><i>public also plays a role in swaying the government. Visitors that come to the park are well informed in swaying government decisions into protecting Guandu.</i></p>	
<p>2.3 (Risk identification and management)</p>	<p><i>[51:10] I tend to look at it more realistically, seeing what we can do with our limited resources. It feels a bit powerless because we only have so many resources, and there's only so much we can do. So they're not willing to give a higher score because scaling up is very difficult.</i></p> <p><i>[51:51] For example, this issue: when trying to promote externally, what challenges or negative impacts or benefits might arise? These things will definitely come up in the early stages.</i></p> <p><i>[52:06] When the Guandu Nature Park management office or fewer units are doing this kind of work, it is easier to do more as a leader, but as more and more units become involved...</i></p> <p><i>[52:19] When units hope to gain benefits from this, there will be many things that need to be cooperative, or more bluntly, you have to deal with...</i></p> <p><i>[52:33] Interest groups, such as development groups or numerous soda factories around the area, which pollute the environment but are legally permitted to operate...</i></p> <p><i>[52:46] We need to put effort into finding evidence of their actions to improve the overall environmental conditions. This is something that many...</i></p> <p><i>[52:57] The management units of nature conservation areas often face such challenges. The development and pollution around us affect us, as we are at the downstream end. Overall...</i></p> <p><i>[53:10] The point that is most likely to make me think is the downstream end. If we don't consider this point and instead focus on our original area, we would just use our resources and manpower...</i></p> <p><i>[53:24] Focusing on education and conservation within our scope is sufficient, but if we try to expand beyond that, the scores will start to decrease. If we discuss issues within our area, the scores can go up.</i></p> <p><i>[53:36] But when we try to extend beyond our area, the scores drop. This is where conflicts of interest arise. For example, if we are identifying risks outside our area, the risks are higher, so the scores drop.</i></p> <p><i>[54:25] If we only focus on internal matters, like education and conservation within the park, they believe they have done enough. However, when considering the views of other organizations, it becomes difficult because their goals may differ, which leads to some challenges.</i></p> <p><i>[54:38] If we take into account the perspectives of other organizations, the score will be lower. For example, in the case of invasive species, we have faced significant challenges in recent years, such as with red fire ants.</i></p> <p><i>[54:57] The red fire ants came from outside, so we can manage them within our park by controlling them or applying treatments. However, there are many sources of invasive species around us, such as fire ants, and while we can manage them inside the park, extending our control outside becomes increasingly difficult.</i></p> <p><i>[55:11] We can still control invasive species within the park, but managing them outside is much harder, as there are numerous sources of these species, and the difficulty of controlling them outside continues to increase.</i></p> <p><i>[54:19] Only see internal within the parks, Like the education and conservation he thinks they did enough job. But you take other parties into consideration, there will be some conflictions, goals will be different, there will be conflictions. He thinks the score will be lower if you consider the other outside the park.</i></p> <p><i>[55:24] However, problems outside the park are difficult to address, especially because of private lands, where you can't just go in, and the scale and number of issues are much larger.</i></p> <p><i>[55:36] It really becomes a huge challenge. It's a species that moves from one park to another.</i></p> <p><i>[55:54] Inside the park, we can do things like mosquito control or use pesticides or other measures, but once it's outside the park...</i></p> <p><i>[56:08] They can't do anything because it's outside the park. If it's outside the park, they can't take action, and the ants will come inside the park from the outside.</i></p>	<p><i>There are challenges of conservation efforts in Guandu Nature Park, particularly the difficulty of scaling up initiatives due to limited resources and external factors. While the park management can effectively address issues like invasive species within their boundaries, extending control beyond the park is much harder due to legal restrictions, conflicting interests, and the presence of polluting industries. As a result, conservation efforts are often constrained, and broader environmental risks, such as invasive species spreading from outside, remain difficult to manage.</i></p>	<p><i>Partial</i></p>

	<p>[56:00] For example, like the red ants it is an invasive species, it comes from outside the park and into the park . In the park they can do something to remove the ants, maybe some medicine. Doing something to remove it but if it's outside the park. They can't do something because it's outside the park. The ants will come inside the park from the outside. That's another problem.</p>		
3.1 (Ecosystem state and drivers of degradation and loss)	<p>[59:38] But could a migratory bird become a new species? That's possible, that's definitely possible. [59:50] Another question is whether invasive species could become new species. When we execute projects like this, sometimes this KPI can get a bit tricky. [1:00:02] Another concern is whether invasive species might become new species. In executing this kind of project, this KPI can sometimes feel a bit awkward. [1:00:13] So, increasing new species involves quite a bit of luck. We adhere to integrity and don't fake things, so we can't just say, 'Today I recorded 120 species' to artificially add a new species. [1:00:26] But if the added species is an invasive one, the score actually goes down. However, here, we focus on migratory birds. [1:00:39] Some rare migratory birds might become new record species, which can happen... Essentially, the management office itself conducts surveys. [1:00:53] And during the preliminary evaluations, they set the indicators. For example, we set water birds as indicators, which are one of the most important species to consider in the wetland environment. [1:01:08] Next, we need to consider how we look at other species beyond the indicators. So, we often discuss the number and types of other bird species and their presence. [1:01:21] This also needs to be considered, and it's determined internally by us. Most of the time, the indicators are set with input from both internal and external sources. [1:02:37] So normally the targets are set by themselves. They are not usually external pressure coming from the outside. They set the target themselves or suggest what the target should be to the outside. [1:01:33] Actually, it's quite rare. Most of the time, we propose it ourselves, and then we do an internal evaluation of the data. Of course, there's a point where if the situation is not good, sometimes we may be vague because, being migratory birds, it could be due to external environmental factors causing the birds not to come. [1:01:45] However, the situation we've encountered in recent years is that the overall environment has improved, but the bird numbers here are decreasing. You could say that because other places have also improved, they might not come here. This can happen. [1:01:57] So, if we improve here, they might still not come. Alright, so let's move on. It happens, and sometimes it's not just our place. [1:02:37] So normally the targets are set by themselves. They are not usually external pressure coming from the outside. They set the target themselves or suggest what the target should be to the outside. [1:03:23] Mostly on the historical data and will get the average line.</p>	<p>Historical data and tracking species in Guandu Nature Park is complicated, particularly how migratory and invasive species influence biodiversity records. While new species can occasionally be recorded, the process is guided by internally set indicators, primarily focused on water birds, with little external pressure. However, despite environmental improvements, bird numbers have sometimes declined, likely due to broader ecological changes influencing migration patterns.</p>	Adequate
3.2 (Biodiversity conservation outcomes)	<p>[1:03:57] ...Because it's simply measurable. [1:04:25] For the majority of ecological indicators, they should not be too difficult to monitor. We're fortunate in focusing on waterbirds, not things that are underground or hard to monitor. [1:04:39] Some important species may be very difficult to discover or observe, but ecologists rarely use them as indicators because they are too scarce, too few to be evaluated, or there may be only one, which makes it hard to assess. [1:04:51] Currently, the species we can assess are those that are more abundant or easier to observe. [1:05:04] These species are easy to observe, so as long as we use binoculars or look from a higher place, we can see many of these species. That's sufficient for assessment. [1:05:17] In wetland environments, it's easy to recognize these species. As long as we conduct checks and tests, we can identify them, then make changes, and based on these findings, we continue testing and conducting surveys. [1:05:50] Basically since we set indicators and our indicators are water birds and they will be easy to measure so we do monitoring and surveys we are able to measure and account for changes and make assessments based on that.</p>	<p>Water birds are the indicator species and biodiversity outcomes are quantifiable.</p>	Strong
3.3 (Unintended adverse consequences)	<p>[1:07:45] Maybe it could be a risk, or perhaps the map might change, so these could also be risks or unintended. Yes, adequate. [1:07:49] Actually, the vast majority of the time, unless it's really unsuitable, like during a typhoon, we still conduct our bird surveys and monitoring even on rainy days or hot days. [1:07:51] The simple concept is that we can rest and hide, not do the survey, but the wildlife is always there. So, if we can record their numbers under different environmental and climatic conditions, it provides a more realistic reflection of their actual status. [1:08:04] But looking at it from another perspective, if the weather is bad, those birds might take shelter inside, rather than outside in the high tide or on the so-called over-flooded sandbars.</p>	<p>Even in challenging and unexpected weather conditions, the conservation department continues to conduct surveys. Similarly, during construction activities,</p>	Adequate

	<p>[1:08:16] So, we can use these environmental weather factors or external disturbances to understand that they might appear or leave depending on those conditions.</p> <p>[1:08:28] Regarding the national park, I think leaving includes situations like when we conduct internal construction, and the heavy machinery comes in or people are walking around. We still record those as well.</p> <p>[1:08:39] So we consider the timing of construction or its intensity to avoid disturbing or damaging the breeding species, especially during their reproductive periods.</p> <p>[1:09:11] ...even though there is a strong typhoon outside.</p> <p>[1:09:24] But they will do their best. We check the condition of birds in different weather situations.</p> <p>[1:09:32] So they survey they will go out no matter rain or shine. Unless it's a really strong typhoon site. SO they will do it as much as possible, in different weather times. To survey the birds. To survey them in different weather conditions, like the bird coming out in different weather conditions. Like sometimes the weather condition is not good so some of them might come to the park and hide. The park's condition will also influence like if there are some engineering, and the birds might get scared and fly away. So they also consider when they will do the construction and the engineering because of the birds.</p>	<p>birds may hide, making observations more difficult.</p>	
<p>3.4 (Enhancement of ecosystem integrity and connectivity in NbS strategy)</p>	<p>[1:11:51] ... We have been promoting the removal of mangroves and restoring the area to tidal flat conditions in the Luzhou area in the past five or six years. This is actually a link to opportunity. We did birdwatching there, and after that, we shared the numbers with the supervising authorities.</p> <p>[1:12:07] We discussed whether they could proceed because a lot of money is needed—several tens of millions to over a hundred million New Taiwan Dollars—to remove the mangroves. Of course, they already had their own removal plan, and we just helped them push forward. Basically, the environment will improve.</p> <p>[1:12:24] After the mangrove removal, the waterfowl habitats are restored, and the number of waterfowl increases. Another example is at Shezi Island, where there's the Shezi Wetland, which has been managed by Taipei City's Water Resources Bureau for nearly ten years.</p> <p>[1:12:39] However, the first seven or eight years were not in good condition, and there was not enough budget allocated to dig to the required depth or improve the environment to an optimal state.</p> <p>[1:12:57] But in the past two years, we've connected with them, providing some consultations or offering them some advice. Then, last year and this year, their engineering efforts have intensified.</p> <p>[1:13:10] In the winter of this year, and the end of last year, we noticed that the number of waterfowl had increased, and we could see a point: the ducks from our area had flown over there.</p> <p>[1:13:24] In this situation, it might seem like the number of our indicator species has declined, but in fact, we pushed for improvements in nearby wetlands through our management office, so the indicator species from our area have spread to the improved habitats outside.</p> <p>[1:14:14] So he mentioned two examples, like the Wetland in Fuzhou, the removal of the mangroves there. They give the survey data to the government to promote to the government to remove the mangroves. So the Government is like okay let's remove the mangroves. The other example is the Shezi Wetlands. The hydraulic office they are managing that part for 10 years but for 7 or 8 years. The First situation was not good, maybe because the depths are not enough. And so recent years the Guandu provide suggestions and advice and doing some more engineering like making it better. When they become better, the ducks fly to there and the ducks in Guandu decrease. It's because there are some other good habitats coming out. There's still a good thing.</p>	<p>Other nearby wetlands also received recommendations for mangrove removal, and the Guandu Nature Park managers are collaborating with the hydraulic office on this effort.</p>	<p>Adequate</p>
<p>4.1 (Direct and indirect benefits and costs)</p>	<p>[44:36] Economic viability refers to having enough resources to continue sustainably. Currently, we're discussing funding, correct? Regarding the national park, since the government doesn't provide any subsidies, we essentially need to fund everything ourselves. The recreational areas accessible to visitors generate income through entrance fees, parking, merchandise, and our restaurant.</p> <p>[45:05] Our revenue sources include entrance fees, parking fees, merchandise sales, and restaurant income. Secondly, we host educational activities, such as guided tours or outdoor education for students. Thirdly, we provide services for corporations, such as corporate programs conducted here. Additionally, we organize our own events, which also contribute to our funding.</p> <p>[45:30] Since we are a non-profit organization, we also receive public donations, which can come from businesses, groups, or individuals. Businesses sometimes donate to specific projects, such as conservation or education programs aligned with our goals. Groups may also make contributions, and individual donors often support us through small contributions.</p> <p>[45:41] Beyond regular revenue, we also have project-based income, categorized into public and private sectors. Public sector funding includes support from government agencies, such as the Ministry of Education, the Environmental Protection Agency (now the Ministry of Environment), and the Forestry Bureau. I can provide you with the relevant documents so you don't need to take notes.</p> <p>[46:56] Government agencies we work with include the Ministry of Education, the Ministry of Environment, the Forestry Bureau, and cultural organizations like the Cultural Affairs Bureau, which hosts art festivals. Additionally, the Animal Protection Office also provides opportunities for funding. Currently, these are the more stable government funding sources.</p>	<p>All costs are well documented and the COO values financial transparency. Revenue comes from entrance fees, parking, souvenir stores, restaurants, and donations and grants from corporations and the government. While government agencies provide project-based funding, the organization does not receive direct</p>	<p>Strong</p>

	<p>[47:08] Corporate funding, on the other hand, comes from different companies each year. Analyzing this, since we don't receive any government money, our income primarily comes from areas like restaurants, parking, and corporate sponsorships.</p> <p>[47:35] Admissions, okay. And donations from general public. We also can receive certain grants, but we have to apply for them from the government, as well as from corporate sponsors. So, but that means we have basically plans to expand. basically spend that money on whatever project we have we also host a lot of activities and workshops so that will generate some of the revenue.</p> <p>[48:29] ... We're always short on funds, but I think that's the issue here.</p> <p>[48:50] So in terms of this would you say that it is strong because it looks like you doc you you keep a very well documented of the funding and the grants would you. say you can give this for a strong score</p> <p>[49:03] So I think she's hesitant because we're always short on money but I guess is the, more about do we have adequate documentation of our sources or are we okay on funding</p> <p>[49:42] It should score highly because, while we have limited funds, everything is very transparent.</p> <p>[50:00] The source of funding is very clear, so this is also "strong."</p> <p>[59:53] So the Wild Bird Society, they think they need to protect this area. But she thinks the government should also see this park as important. Yeah, basically we hold the government responsible for forking out the money to do the habitat work, because it's quite a large sum, and that, to protect the wetland down there, they should be, like, the main participant in securing the funds for that. Like, we can secure funds for holding environmental education activities or running of the center and such, but most of the habitat work should be their responsibility.</p> <p>[1:04:41] For example, as she mentioned, the local residents may bring people here, and they will likely visit nearby restaurants and spend money. It's like the monetary benefits. They are not directly all the monetary benefits, Like she mentioned the residents here, Maybe they bring the people here So the people coming will go to the restaurants nearby. Or buy something nearby And the price of the, House the building are increasing because the park can provide a good view. The. The company who do the, habitat improvement, Because they need to do the habit improvement. So they need money and took to know one who do the Improvement project so they are getting their monetary benefit, and also the corporate when they come they donate money or they come here, it's good for the corporate image. And that project for the. Instruction, oh we all they also donate money for so what we can, have certain workshops or activities or tours for special groups with special needs and also for the researchers.</p> <p>[1:10:45] These developers actually evaluate how much impact they have, which is why they start acquiring land. A lot of land outside has been acquired, and it's waiting to be developed, so the farmers here are basically not serious about planting. Many farmers are bought out by companies, and they develop the land. Some farmers are just developing nearby. The cost-effective strategy has been adopted, so our funding source is very simple.</p> <p>[1:11:21] Ther are many land are bought by the company that are building the parks. So there are some development beside the parks.</p> <p>[1:11:48] One is self-operation, and donations from the public and corporate sponsorships are all in compliance with regulations, as long as the use of the funds is compliant with the regulations.</p>	<p>subsidies, making self-generated income crucial. Corporate sponsorships vary each year, adding to financial uncertainty. Despite these challenges, the organization effectively tracks its income sources, ensuring compliance with regulations. Additional funding is necessary to sustain operations and expand conservation efforts. The score merely does not reflect financial gains but just mentions all costs and revenues are taken into account. Refer to figure 4. for graph</p>	
<p>4.2 (Cost-effectiveness study)</p>	<p>[39:03] Currently, there are no cost-effectiveness studies. It's all driven by flood control needs and site optimization, supported solely by public budgets. No considerations yet for introducing tourism or external economic support.</p> <p>[39:16] They haven't considered making the land better or bringing tourism or other aspects to generate more value.</p> <p>[57:25] Who got the benefit is the wildlife and the public, the residents. They can come here for recreation and for education. And if you see, because the whole Taipei City residents got the benefit because they had the flood. They can deal with the flood. And like for the students, they have the school trips. So there are the benefits from the wetlands. And what is the cost?</p> <p>[57:57] It is like, if you want to... to maintain the habitats, you'll need some money to do the work.</p> <p>[58:07] Who is financially responsible for it. The government, they have some funding, like the project for the wetland improvement. We also have corporate sponsors who want to do something good for the environment.</p> <p>[1:08:10] In some studies, people believe in its effectiveness, but we don't have studies proving it..</p> <p>[1:08:46] Yes, I don't think we have any previous research.</p>	<p>There is no cost-effective study. It is clear that the local residents benefit from the flood control, education, and the tourism that Guandu Wetlands bring.</p>	<p>Partial</p>
<p>4.3 (Alternative solutions to test effectiveness)</p>	<p>[1:08:10] In some studies, people believe in its effectiveness, but we don't have studies proving it. So, if you have evidence supporting its strength, that would be great.</p> <p>[53:41] - [53:56] Not good... The cost-benefit ratio is more diversified. Yes, but what I was stuck with was what he was asking. Actually, my Guandu City 100 has already been protected.</p> <p>[54:59] - [55:18] Protecting wetlands is definitely more important than using artificial wetlands!</p> <p>[1:09:00] - [1:09:40] // I'm not sure if those development explanatory meetings, like those involving the Presidential Office, are exaggerating the benefits of the land. For example, they might say how many houses will be built, how many people will live here, or how</p>	<p>There are always people that want to develop Guandu Wetlands because it will idealistically bring more monetary revenue. However, the</p>	<p>Partial</p>

	many citizens will benefit from a new sports park. I'm not sure if such data exists. The other side may provide this kind of evidence, but we don't have such information.	wetlands are already a protected area.	
4.4 (Resourcing options)	<p>[59:53] So the Wild Bird Society, they think they need to protect this area. But she thinks the government should also see this park as important. Yeah, basically we hold the government responsible for forking out the money to do the habitat work, because it's quite a large sum, and that, to protect the wetland down there, they should be, like, the main participant in securing the funds for that. Like, we can secure funds for holding environmental education activities or running of the center and such, but most of the habitat work should be their responsibility.</p> <p>[42:26] 4.44, considering market resources and ensuring the funding sources. Actually, there are regulations about this, but it's insufficient.</p> <p>[1:13:10] Of course, it is legally used.</p> <p>[1:14:38] If a company's business philosophy is aligned and they are willing to support educational plans, then sponsorship would be ideal because companies have more flexibility. The government has many directions, and they may not directly support or provide funding for NBS projects, but companies have more flexibility.</p> <p>[1:14:58] They may ask you what you need, and we can provide the project and work with them, so there is more flexibility in negotiations with companies. Governments, on the other hand, have various policies, and the funding from those policies might be limited.</p> <p>[1:15:12] Governments have many different policies, and their funding often conflicts with other areas. After allocation, there could be a crowding-out effect, so it's not guaranteed that all funds will go into NBS.</p> <p>[1:15:35] It doesn't necessarily have to be fully allocated to NbS—it could be invested in industrial parks. Industrial parks could also align with NbS. Industrial parks could indeed align with NbS.</p> <p>[1:16:01] the park itself and the restaurant ... the company funding and the donations from the public and the most effective way is the company funding because um the park they can, the park they can give them some project that want to do this project and if the company. also think this project is what they want to do and they'll connect it and will have the. Most effective funding like this and especially if you know um they can do more long term, so we can have different phases in the project so we can finish one portion this year and then continue next year um we can once it's a longer term project um not only the funding is secure then we can do more work yeah because public funding fluctuates a lot. And then what we can do will fluctuate, and most of the time those will be smaller projects, but with corporate support we can do bigger projects. Government funding is very dependent on their policy, and sometimes their policy changes quite a bit depending on who is in charge and who is in power right now. Government is based on annual budgets, so this year you might get this, and next year you might get this instead. And then sometimes they will scrap projects altogether.</p> <p>[1:18:25] Regarding our funding sources, we actually have many different sources of funding. For example, corporate funding is relatively stable.</p> <p>[1:18:37] However, when there's a change in the ruling authority, sometimes the funding from the city government becomes less stable. Corporates, on the other hand, allow us to extend our project plans...</p> <p>[1:21:28] I felt it was important to explore whether we could find additional funding sources. While I'm clear on how to use our current funds,</p> <p>[1:21:40] I think there's still potential to secure additional resources from other channels or funding sources. That's why I didn't mark "strong." I'm hopeful that more resources can come in.</p>	<p>Guandu is funded by the city government and corporations and also generates its own income through souvenir shops and restaurants. The government relies on Guandu Nature Park managers to carry out ecological work and environmental education activities. Furthermore, corporations also contribute funding to Guandu Nature Park, as it enhances their company image for ESG reports. In comparison, government funding varies depending on policies and leadership. Unlike corporations, the government is less flexible with funding. Given this uncertainty, it is believed that more resourcing options should be made available.</p>	Adequate
5.1 (Grievance resolution mechanism)	<p>[18:31] Yes, in terms of park management, we've ensured openness and transparency. For different stakeholders, such as corporations, donors, and visitors, we collect and address their feedback.</p> <p>[18:43] Our public affairs department handles external communication, coordination, and engagement. The environmental education team uses questionnaires to gather opinions.</p> <p>[20:22]...For the public, they are doing something, and for the education department, they are conducting questionnaires for the public. There is some feedback, the company the donator the feedback from them and they respond there are also departments for the public and they are doing something and for the education department they are doing questionnaires for the public so they think this is strong .</p> <p>[23:42] Positive effect for the wildlife here and the residents here can enter for free. They treat this as their own backyard and come here and exercise. Downside is people can't develop and there's a lot of pressure and interest in developing the nearby area. But because we're already here, they cannot develop the nearby area but because we are here already, they can't .</p> <p>[25:02] The city government has the strongest influence because the final decision-making power lies with them. However, if they were to show more respect for our operational and management ideas, we'd be better able to move in the direction we desire.</p> <p>[25:10] So the City Government has the strongest influence on ...</p> <p>[25:17] But ultimately, the final decision-making power still rests with the city government...</p>	<p>Different departments are making an effort to be engaged with the public. Departments like the education department send questionnaires to the public while the public department is in charge of public engagements. Grievances are settled using the 1999 calls.</p>	Strong <i>Adequate</i>

<p>[25:27] Because they have the authority to make the rules and regulations but if .. when they are friendly and willing to listen towards us then it is beneficial</p> <p>[1:25:22] how should the lines connect? That depends on what the director thinks. I've seen a map before where there's a city government unit,</p> <p>[1:25:36] and within the city government, there's the Animal Protection Office. Under that office, there are related departments like the Cultural Bureau and Communication Bureau.</p> <p>[1:25:51] Then there's our management unit under the city government, and several public departments. On the corporate side, there are various companies, and for schools, they're a major client of ours.</p> <p>[1:26:04] We also have connections with other related NGOs, as well as partnerships with many local organizations</p> <p>[1:26:18] and other relevant groups, along with information from other departments. However, this year, nothing has been held, and we haven't seen anything at all.</p> <p>[1:26:30] It's not that we can see it; it's that nothing is visible. The question is about how responsibility for using resources is distributed—how each stakeholder assumes responsibility.</p> <p>[48:34] The relationship with the local residents is positive, they can communicate with us through local leaders or representatives.</p> <p>[48:48] Through representatives, they can directly communicate with us, even through 1999, they can contact us directly. There are many ways for communication.</p> <p>[49:37] Yes, they (the Lion Club) are an NGO, and they are an external civil organization. They can give us their suggestions, and that's fine.</p> <p>[50:06] It could be that there are stakeholders who are cooperating or in conflict, such as central management units responsible for accounting or wetland management, like the Water Resources Agency or the National Land Agency. It's actually quite complex because there are so many units involved here.</p> <p>[50:33] So, he mentioned those two central government agencies that are responsible for river and coastal management.</p> <p>[51:07]... Basically, they supervise the local government, but they also ensure that things are done correctly. Maybe there's some tension, but it's not necessarily a conflict. You cooperate with them, and everyone is satisfied.</p> <p><i>[1:17:03] I'll give a simple example. Our park is located at the very bottom of the watershed.</i></p> <p><i>[1:17:15] It's downstream from the river, and there was once a public complaint made by local residents to a city councilor. They said, 'We don't have a proper drainage system here.' This led to problems with the water flow from upstream, as it couldn't be channeled away for flood control due to the lack of funding.</i></p> <p><i>[1:17:26] This happened because there wasn't enough funding to continuously dredge the riverbed and address the issues with the water machines. So, it has a depth mechanism, and we would then have to act, meaning we couldn't just leave the drains dirty without clearing them.</i></p> <p><i>[1:17:38] So, there's a complaint mechanism, and as a result, we would need to take action to prevent leaving the drains untouched.</i></p> <p><i>[1:17:50] Not taking action to clean the drains has led the public sector to allocate more budget for drainage work. It is important to have oversight because it could affect the residents or farmers upstream.</i></p> <p><i>[1:18:03] Another example is the trees. The trees in our park face two situations: one is related to aesthetics, and the other is low-hanging branches.</i></p> <p><i>[1:18:16] Aesthetics means that from the second floor of the center, you might lose your view because the trees have grown too tall. So, we face a conflict: I have to either cut down the trees or trim them.</i></p> <p><i>[1:18:30] We can't let the trees keep growing endlessly, or we may have to relocate them. The second situation is that the trees might hang too low.</i></p> <p><i>[1:18:44] This could block pedestrian space or vehicles. We need to manage this by setting limits on tree growth and ensuring that the trees are not allowed to grow unchecked.</i></p> <p><i>[1:18:56] So, it still requires management by zoning or managing areas with different intensities, like how we manage the drainage system.</i></p> <p><i>[1:19:08] The management intensity of drainage channels and rivers is actually high because they are affected by the risk of flooding and typhoons every year. Pedestrians and vehicles passing by the road or low-hanging trees are also at risk.</i></p>	<p><i>The feedback system in Guandu Nature Park allows residents and visitors to report concerns through various mechanisms, including direct complaints, government channels, and on-site staff. For example, residents upstream reported drainage issues to a city councilor, leading to government intervention and budget allocation for river cleaning. Similarly, concerns about tree overgrowth affecting aesthetics and safety prompted trimming and zoning measures. Guandu Nature Park management can immediately address minor issues, while more complex concerns are forwarded to the Public Affairs Department for proper handling. However, subjective complaints, such as requests to remove weeds and leaves aren't major concerns.</i></p>	
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	<p>[1:19:20] So, every year, we have to review and maintain the areas where it doesn't affect these conditions. In such areas, the vegetation can be maintained with minimal labor input.</p> <p>[1:19:32] Unless there is tree fall, pest infestations, or invasive species, we can manage these areas by zoning or phases. Since Guandu is along the coast, there are residents along the shore who have raised concerns, saying the river is not being cleaned.</p> <p>[1:20:13] As a result, the water in the river cannot flow down, which affects the farmland. These residents contacted the government, and the government said they need to clean the river.</p> <p>[1:20:36] The government might allocate more funds to address this issue because of the feedback from the community.</p> <p>[1:20:50] Another small issue is the trees. We need to trim the trees because they can have an impact. For example, we have a nice view from the second floor, but if the trees grow too tall...</p> <p>[1:21:03] The trees will block the view, so we need to trim them. If the trees grow too tall, they will affect the drivers or vehicles.</p> <p>[1:21:10] So 2 examples, the first example is.. because Guandu is at the downstream of the river, so there are some residents at the upstream, they have some feedback about you Guandu didn't clean the river. So the river from the upstream can't go down so it influence them. It influence the farm land. So the people find the government and the government come and say that you need to clean the river. That makes more from the government to do this because of the feedback of residents. The other thing is the trees, need to trim the trees. The trees will also influence like when you have a great view at the second floor and if the trees go higher. It will block out the view so they need some trimming. Or trees beside the roads it will go on the road it will influence the passenger will, influence the cars, so it will also need the trimming. Like so for the trees beside the people besides the passenger and the river that need cleaning and high intensity of management. For the other areas, like the people that don't go there often, they will have the low intense of managing.</p> <p>[1:22:32] So once the feedback is given, you implement it immediately and act on it. So you feel like you have a lot of experience.</p> <p>[1:22:56] You typically take appropriate actions, which is essential. Yes, they have to.</p> <p>[1:23:07] Of course, sometimes there are unreasonable requests. For example, we often get feedback like 'The environment here is overgrown with weeds.'</p> <p>[1:23:09] They might say, 'Can you remove the grass? You don't have too many fallen leaves; you should sweep them up.' These are personal subjective opinions that don't directly harm their interests. When they walk on the path, they don't need to step into overgrown weeds.</p> <p>[1:23:10] Or when we leave areas with dense vegetation for environmental diversity, it's just their personal subjective feeling. In such cases, we usually thank them for their advice.</p> <p>[1:23:24] But we explain that it's a habitat for biodiversity, where species can thrive. You still need to provide an explanation.</p> <p>[1:23:38] Also, it depends on whether the feedback is reasonable. For example, if someone feels like going there but there are too many butterflies and insects, they might say, 'Okay, thank you for your suggestion.'</p> <p>[1:23:50] There are too many plants and herbs on the ground. And they just say, 'Oh, okay, thank you for your suggestion,' but they do nothing.</p> <p>[1:24:02] Normally, I don't get it directly. If it's the standard procedure, the front-line staff gets it first. If they can solve it on-site, they handle it.</p> <p>[1:24:14] No, it's the Public Affairs Department. The Public Affairs Department will pass it on to see which unit should handle it. This has been the practice in the past, but it's less common in recent years.</p> <p>[1:24:26] Alright, another question: If you ask them, do they respond directly or go to a specific department?</p> <p>[1:24:38] She said if people directly give feedback in the park and the staff can handle it, they will address it immediately.</p> <p>[1:24:51] If they can't handle it, they will send it to the Public Affairs Department, just like we talked about with the management committee.</p> <p>[1:24:58] The former question you asked is, feedback go directly to him or ...</p> <p>[1:25:08] If the people in the park get the feedback directly, and if they handle it they can handle it. But if they can't they will go to the public affairs department. The public affairs department they will get the feedbacks and pass to who should be dealing with this problem.</p>		
5.2 (Indigenous people involvement)	NA	NA	NA
5.3 (Stakeholder's identification)	<p>[25:02] The city government has the strongest influence because the final decision-making power lies with them. However, if they were to show more respect for our operational and management ideas, we'd be better able to move in the direction we desire.</p> <p>[25:10] So the City Government has the strongest influence on ...</p>	The city government holds the most influence since they have the final	Strong <i>Strong</i>

<p>and involvement)</p>	<p>[25:27] Because they have the authority to make the rules and regulations but if .. when they are friendly and willing to listen towards us then it is beneficial for both of us. [26:27] I don't think it's the local residents because we work with them on initiatives like reforestation and engaging with local women's groups... [26:52] Perhaps it's fair to say that local residents still hope for some form of development and construction on the land. Yes, they have their own opinions, which sometimes conflict with ours. [27:28] I guess a lot of the time what they want goes against our core values then we don't listen. [28:18] There's more consensus now. In the early days of operations, over 20 years ago, we had more conflicts with the residents because they had many demands and expectations for how things should be done. [28:30] There were even protests at the entrance when we first opened. On the first day, a group of people gathered to protest. But after more than 20 years of community residents joining and engaging with us in continuous dialogue, things have greatly improved. [28:42] Even the shops on the streets now recognize that when we host events, it brings them a lot of economic activity and foot traffic... [28:54] The houses across the street also benefit from this. They sell better now. Back then, the relationship with the local residents was more strained. [29:06] But now, after 20 years, there's more agreement, and most people like the park. When we first opened, people opposed us because they didn't understand why we were conserving the land. [29:08] So she mentioned that there used to be more conflict with the local residents now there is an agreement and most of them like the park when we just opened people came to boycott us in front. because they didn't understand why you have to set aside land for it and a lot of the store owners now in Guandu really like us because we attract people when we have activities and it draws people in. [29:20] Now, many park-related businesses in the area appreciate us because we bring people in. As for groups that might still experience conflict or marginalization, it could be people taking photos? Birdwatchers? [29:48] The bird photographers, perhaps, because they can't get too close to certain areas. Or it could be people who want to enter the restricted zones for fishing or other purposes. That might be one example. [30:00] Regarding marginalization in terms of language, we actually have many foreign visitors, but they are unable to express their thoughts or showcase their work because of language barriers. Yes, when foreigners visit here, there isn't much feedback from them. [30:17] here's not much of a feedback channel for foreigners coming into it. And there's a lot of bird photographers that want to take pictures and they want to be up close and like they want to be like within the meter of the birds. And but, you know, like opening up the core reserve area for them to go down there and take pictures is not what we can do. [30:25] Also, many bird photographers want to get closer to the birds to take pictures. They want to be within proximity to the birds but want the bird zones to be more open for access. [30:40] They wish to go into areas we don't allow. Yes, indeed, as you mentioned, the residents, photographers, and the birds themselves. [30:51] Oh, yes, for sure. How about in terms of like, let's say, so you mentioned the residents. The photographers, the birders, as you mentioned before, how about like businesses, so you're good with the local, but in terms of like, you know, like, you know, In terms of investors or people who want to buy the land, there's a lot of conflict, right? Is there any sort of scenario where you're on the same page or where you're good for each other or that's not going to happen. [31:21] Well, you know, the property owners that are adjacent to us, their property value has gone up dramatically because it offers a view. And a lot of nearby developments, when they are advertising, they're like, oh, it's nearby Guandu Nature Park. So because there's a view and that they can come here very easily. So then that's a good thing. [31:33] The proximity to tourism makes it easier for people to visit, which is a positive aspect. When nearby developers sell their projects, they often highlight that Guandu Nature Park is very close. In this regard, there are some mutually beneficial aspects. [32:24] Usually, meetings are held to discuss these issues. For instance, the city government organizes an annual operational review where they invite experts and scholars. Under the new contract, this has increased to three times a year. [32:36] They assess our performance and services. If local residents or visitors have feedback or complaints, they can directly call the 1999 hotline, and the case will be assigned for resolution. [32:55] So right now we have, like with the city government, they have steering committee for us so any feedback from local residents or anyone basically they can go through either the city councilman's or they have a hotline the 199 and then they can directly say things that they like or dislike about us which we get (so when you receive them what do?) you do um well like the some of the easier ones that we get we can directly like respond or take care of the issue but then some of the issues that require more of discussion and debate will take a bit longer how does one not look what's all about this you would some of you I just don't kind of continue to talk about what I should do.</p>	<p>decision-making power, but better collaboration with them could improve operations. Before, there was significant conflict with local residents, including protests, as they did not understand the importance of conservation. Over the past 20 years, however, community engagement has improved, and many now appreciate the park, especially business owners who benefit from increased foot traffic. Some conflicts remain such as bird photographers who disturb wildlife and language barriers that limit foreign visitors' engagement. Property values around the park have risen, and developers highlight its proximity as an advantage. Regular meetings and feedback channels, including a government hotline, help address concerns, with simpler issues resolved quickly and complex ones requiring further discussion.</p> <p><i>Within Guandu Nature Park, there is little conflict, as most departments share the same mission and vision for environmental</i></p>	
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	<p>[32:36] They assess our performance and services. If local residents or visitors have feedback or complaints, they can directly call the 1999 hotline, and the case will be assigned for resolution.</p> <p>[32:55] So right now we have, like with the city government, they have steering committee for us so any feedback from local residents or anyone basically they can go through either the city councilman's or they have a hotline the 199 and then they can directly say things that they like or dislike about us which we get (so when you receive them what do?) you do um well like the some of. the easier ones that we get we can directly like respond or take care of the issue but then some of the issues that require more of discussion and debate will take a bit longer how does one not look what's all about this you would some of you I just don't kind of continue to talk about what I should do.</p> <p>[33:37] For these more complex issues, further discussion and handling may be required. The approach depends on the specifics of the issue.</p> <p>[33:49] if you want now do what you see be a part of you and do what you're y'all chose if you do it to me.</p> <p>[33:59] you, certain requests, then the city government generally will have to make a response.</p> <p><i>[1:26:33] You can talk about internal or external issues, both are fine. Regarding the management department, the issues here are not major.</i></p> <p><i>[1:26:53] Because the employees in the management department actually agree with and accept issues related to nature conservation and environmental education.</i></p> <p><i>[1:27:07] So, we don't usually face conflicts or divisions, like when one issue is seen as more important than another. While there have been some conflicts in the past, these were ultimately resolved.</i></p> <p><i>[1:27:19] At this stage, within our internal management, the management mechanism is based on conservation and environmental education, which are the two main purposes of our organization.</i></p> <p><i>[1:27:30] In practice, there are not many conflicts. However, these conflicts tend to arise more from operational aspects.</i></p> <p><i>[1:27:42] For example, when funding is insufficient, the challenge is whether we can sustain both conservation and education efforts, which can lead to conflicts. There simply isn't enough money to do everything related to conservation or education.</i></p> <p><i>[1:27:58] It might require investment, so the support needed is the area where conflicts are more likely to arise. The real conflict comes from the constant questioning of why we are always losing money.</i></p> <p><i>[1:28:10] This conflict will continue to exist. So, there aren't many internal problems because everyone shares the same goal.</i></p> <p><i>[1:28:24] For example, protection and education – they all share the same goal, so there aren't too many disputes. Some disputes occur because of money; since they don't have enough, the competition arises over where to allocate the funds. This is likely the main difficulty they face, and it's a high ratio of problems they encounter.</i></p> <p><i>[1:28:44] So like the internal problem they are not so much problem because they have the same goal. For the conservation and education they have the same goal so they don't have much conflict. Some conflicts come from the money, because they don't have enough money and so their money should go here or go there? They will have some competitive thing. So this might be the conflict they face.</i></p>		
<p>5.4 (Stakeholders involvement in decision making)</p>	<p>(refer to indicator 5.3 it's in connection with 5.4)</p> <p><i>[1:28:44] So like the internal problem they are not so much problem because they have the same goal. For the conservation and education they have the same goal so they don't have much conflict. Some conflicts come from the money, because they don't have enough money and so their money should go here or go there? They will have some competitive thing. So this might be the conflict they face.</i></p> <p><i>[1:29:24] So, you gave scores of 5.3 and 5.4.</i></p> <p><i>[1:29:41] For example, if my issue isn't addressed, it might keep coming up with repeated questions, creating a more intense situation. So, it is necessary to guarantee participation, which makes it a more challenging conflict that needs to be resolved.</i></p> <p><i>[1:29:54] The conflict I face today is strong, and it needs to be addressed. It has to be resolved strongly, and this is the point I understand in this context.</i></p> <p><i>[1:30:06] Because there are some things that can't be overlooked, another aspect is that when we are constantly reminded of the lack of funds...</i></p> <p><i>[1:30:25] ...that demand becomes very strong. If this is a potential conflict or dispute mechanism...</i></p> <p><i>[1:30:42] One situation is that thorough discussion is a good thing, and another thing is whether arbitration or voting is needed.</i></p> <p><i>[1:30:59] For example, sometimes we have internal discussions on certain issues, and at the end, we decide whether to handle the matter or not.</i></p>	<p><i>Internally there are barely any conflicts within departments as mentioned. However, If there is conflict voting will take place to resolve the challenge within departments. Refer to the figure 3.</i></p>	<p>Strong Strong</p>

	<p><i>[1:31:10] We rarely use voting to resolve issues, but instead, we explain the different positions of departments, like their department, our department, and other departments.</i></p> <p><i>[1:31:23] After the explanation, the department head or senior officer will make the final decision. We want to ensure that my opinion has been fully expressed and respected, but a decision still has to be made.</i></p> <p><i>[1:31:39] For example, whether we should cut the tree because of the landscape, or whether we should let the tree grow even though it impacts the view. In the end, we try to reach a compromise and let the tree grow, sacrificing some of the landscape.</i></p> <p><i>[1:31:53] This still requires a decision to be made.</i></p> <p><i>[1:32:12] Each department will discuss what they care about and their thoughts, and the boss will make the final decision.</i></p> <p><i>[1:32:27] Facing the conflicts inside the park like each departments, they will need discussions and maybe having a meeting with everyone. Like every department say about what they they care about what they think about and the boss decides. He also mentioned maybe vote but it is not happens much it's usually the discussion.</i></p>		
5.5 (Decision-making beyond jurisdictional borders)	<p>[35:14]- [36:40] Nowadays, it seems less frequent, such as road construction projects in areas like the Wugu Preservation Zone. The jurisdiction typically lies outside Guandu. Usually, explanation meetings are held, for example, in places like Luzhou. These meetings invite us to listen to government plans, express our stance, and provide feedback. If possible, we try to influence decisions—for example, regarding the declassification of preservation zones. We observe what the government plans to do after declassification rather than being left in the dark. This is why we follow up and investigate (like understanding what the government is planning to do after the declassification).</p> <p>[36:48] So for the NbS outside the area of the park Like the maybe at the area of the wugu luzhou, the area of the other wetlands, if they are doing something there, they'll have a meeting, and the Guandu Nature Park, they will go to, they'll have a meeting, and the Guangdong Natural Park, they will go to that meeting and listen to what are they going to do, and to provide their advices, and to see what is the thing doing, is it going right,</p> <p>[37:30] I think most of the development or the stuff that, you know, different government agencies are doing, with regards to environment, they generally will have open hearings, or workshops, with, you know, local groups attending, and generally they will invite us, even if they don't invite us, if we hear about it, and it's a topic that we're interested in, most of the time. We will attend and then you know learn about what they're going to do and then give feedback some suggestions. a lot of these now will directly ask us to attend and then be one of the sort of the steering guides for them because we've been here for so long and we do have that management which is something that they don't know much about and also because we have data not only here but also outside so we can provide support for them when that when they need it.</p> <p>[38:31] The reason I only marked four points is because it's about external areas that we might not handle as intricately. It's more external, so our involvement is limited.</p> <p>[38:46] These matters involve external factors, so our participation isn't as detailed. She chose an appropriate approach because these events occur outside.</p> <p><i>[1:28:44] So like the internal problem they are not so much problem because they have the same goal. For the conservation and education they have the same goal so they don't have much conflict. Some conflicts come from the money, because they don't have enough money and so their money should go here or go there? They will have some competitive thing. So this might be the conflict they face.</i></p> <p><i>[1:29:24] So, you gave scores of 5.3 and 5.4.</i></p> <p><i>[1:29:26] Yes, the scores for 5.3 and 5.4. If this is in this position, just close the door and quickly get it done. Don't think too much, just draw the circle. Thank you, because it hasn't been fulfilled, and this issue will continue to exist.</i></p> <p><i>[1:29:41] For example, if my issue isn't addressed, it might keep coming up with repeated questions, creating a more intense situation. So, it is necessary to guarantee participation, which makes it a more challenging conflict that needs to be resolved.</i></p> <p><i>[1:29:54] The conflict I face today is strong, and it needs to be addressed. It has to be resolved strongly, and this is the point I understand in this context.</i></p> <p><i>[1:30:06] Because there are some things that can't be overlooked, another aspect is that when we are constantly reminded of the lack of funds...</i></p> <p><i>[1:30:25] ...that demand becomes very strong. If this is a potential conflict or dispute mechanism...</i></p> <p><i>[1:30:42] One situation is that thorough discussion is a good thing, and another thing is whether arbitration or voting is needed.</i></p>	Guandu Nature Park participates in government meetings and consultations regarding environmental developments outside its jurisdiction, such as in the Wugu Preservation Zone and other wetlands because of their connectivity. While their direct involvement in these areas is limited, they attend meetings to understand government plans, provide feedback, and influence decisions, when possible, particularly concerning the declassification of preservation zones. Government agencies often hold open hearings or workshops, inviting local groups, including Guandu Nature Park, to contribute their expertise. Even when not formally invited, the park proactively joins discussions if the topic is relevant to	Adequate <i>Strong</i>

	<p>[1:30:59] For example, sometimes we have internal discussions on certain issues, and at the end, we decide whether to handle the matter or not.</p> <p>[1:31:10] We rarely use voting to resolve issues, but instead, we explain the different positions of departments, like their department, our department, and other departments.</p> <p>[1:31:23] After the explanation, the department head or senior officer will make the final decision. We want to ensure that my opinion has been fully expressed and respected, but a decision still has to be made.</p> <p>[1:31:39] For example, whether we should cut the tree because of the landscape, or whether we should let the tree grow even though it impacts the view. In the end, we try to reach a compromise and let the tree grow, sacrificing some of the landscape.</p> <p>[1:31:53] This still requires a decision to be made.</p> <p>[1:32:12] Each department will discuss what they care about and their thoughts, and the boss will make the final decision.</p> <p>[1:32:27] Facing the conflicts inside the park like each departments, they will need discussions and maybe having a meeting with everyone. Like every department say about what they care about what they think about and the boss decides. He also mentioned maybe vote but it is not happens much it's usually the discussion.</p>	<p>their work. Their long-standing presence and environmental data make them valuable advisors in these decision-making processes. This was not given a strong score because they did not handle other areas outside Guandu.</p> <p><i>Same mechanism as referred above.</i></p>	
<p>6.1 (Costs and benefits of associated trade-offs)</p>	<p>[41:55] The focus is on zoning. We have core conservation areas that only researchers can enter, meant for birds and other wildlife habitats.</p> <p>[42:19] Then we have the main facilities area for tourists, offering education and recreational opportunities tied to biodiversity.</p> <p>[42:35] There's also a buffer zone, where only guided groups or participants in educational programs can enter, maintaining a regulated and tiered zoning system.</p> <p>[43:03] So what they do for trade off is to separate the areas. Okay. So this area is the core conservation area. area no one can go inside except for the researchers and the other areas for recreation so the public can come in can have some recreation in this area yeah and the buffer area for only for. the grouped people a group go in a group go out you can't go in individually so they do the trade off by separating the areas so we manage the level of disturbance for the wildlife.</p> <p>[1:33:40] Yes, I understand. Okay, when we use biodiversity as an explanation, if the following question is guided, we easily encounter this when managing wetland ecosystems.</p> <p>[1:33:54] However, if today I say no to indicator species or no to waterfowl for managing aquatic areas or creating exposed land areas like this, what gets sacrificed are species like deer, birds, or even less visible animals like reptiles, small mammals, or mice because their habitat environment would change, and the vegetation would become their habitat.</p> <p>[1:34:07] In fact, what gets sacrificed are species like deer, birds, or even less visible animals like reptiles, small mammals, or mice because their habitat environment would change, and the vegetation would become their habitat.</p> <p>[1:34:18] The vegetation will become part of the aquatic wetland environment instead of grasslands or shrubs. It will no longer be shrubland. So, we need to balance what kind of environment we want.</p> <p>[1:34:31] ... I can't satisfy all needs, so it becomes a matter of balancing our desire for biodiversity.</p> <p>[1:34:46] We want biodiversity, so it becomes a matter of balancing this piece of land to satisfy not just indicator species, but also other areas. We're greedy and hope that biodiversity and environmental vegetation diversity can be linked together.</p> <p>[1:34:59] So, not all 57 hectares will become aquatic. Within those 57 hectares, only about 20 hectares will be water, and the rest will include connected pathways, soil embankments, and areas with herbaceous vegetation. These areas will not be actively managed, allowing them to naturally develop into forests, etc.</p> <p>[1:35:10] We need to do this. The question is whether it's reversible, or whether it can be managed through machinery or even chemicals.</p> <p>[1:35:23] In fact, it is feasible because it has not been cemented.</p> <p>[1:35:36] Or if it hasn't completely lost its flexibility, from an ecological perspective, it's feasible, rather than being in a large-scale, entirely homogeneous environment.</p> <p>[1:35:47] Even for the mangroves in the Tamsui River or Keelung River, it's feasible, rather than a large-scale, entirely homogeneous environment. Even as mentioned, like the mangroves in the Tamsui River or Keelung River, it's still reversible, but it will require more funding, manpower, and time.</p> <p>[1:36:00] The question is whether it's necessary to restore the mangrove environment, or if it should become a mudflat or even an island. That depends on whether there's the necessary level of intensity, high-level consensus, and awareness to carry out this intensive management. Without that, it may not be good.</p>	<p>Trade-offs are secured because they have their own core reserve areas which only the park managers and researchers can enter. This prevents the disturbance of wild life but also less tourism in that area.</p> <p><i>Managing wetland ecosystems involves trade-offs between prioritizing indicator species like waterfowl and preserving habitats for other species such as deer, reptiles, and small mammals. Only 20 of the 57 hectares will be converted into aquatic habitat, while other areas will remain grasslands or forests to support biodiversity. The land remains flexible since it has not been permanently altered, making restoration or habitat changes feasible. However, reversing these</i></p>	<p>Strong</p> <p><i>Strong</i></p>

	<p>[1:36:11] <i>Let me first translate what he said about biodiversity. Aside from water birds, there are also other species, like seabirds, butterflies, and other animals. If it's 10 meters of land, you can't fit all the water levels into just one piece of land.</i></p> <p>[1:36:52] <i>So the case about the biodiversity part, the indicator species are important but he still have to care about other species other than water birds like the land birds or the snakes, the reptiles, other animals, so the 57 hectare area you can't make them all water area or wetland area for the waterbirds. You still have to maintain some grassland the trees for other species to live in. So this is the trade-off he faced. Not only waterbirds but also other species also important. But this decision can be reversed because it is not constructed. So maybe now is the mangrove but you can make the area into a place for the waterbird, you can do this thing, it's reversible.</i></p>	<p><i>decisions requires significant funding, manpower, and consensus on intensive management efforts.</i></p>	
<p>6.2 (Rights, usage of, and access to land and resources)</p>	<p>[1:30:17] So this is the Taipei City Government and the Office who is responsible for Guandu is the Animal Protection Affairs Office and there are also other department form the government like the cultural department for the art festival like Guandu, and the ministry of education they are doing something about (education) in Guandu and about the companies, if the company... So their corporate CSR or ESG so if it's within their criteria they can come here to participate in activities or host family activity days at the park. As for the other NGOs it depends on which NGO but basically depends on overlapping interests. So they can come here, sometimes it's mutually beneficial. They come here for support and sometimes we ask them for support as well.</p> <p>[1:32:18] This is the school, this the partnerships, the school will come to Guandu for a school trip or educational activities</p> <p>[1:32:23] For partnerships, like alliances for Tamsui River-related projects or surveys, partnership definitions are very clear about responsibilities and obligations.</p> <p>[1:33:55] So for the partnership like the alliance of the Tamsui River, if they are holding some activities together, they will know each other. What should we do? What should I do? Everyone knows it fairly but for the others, might not know what is their responsibility.</p> <p>[1:34:29] I think when we have a partnership we have very clear goals and roles so that everyone knows their own responsibilities but in general. They follow the guidelines of coming into the park (the rules) as long as they follow those then generally it is good.</p> <p>[1:34:42] .. The Director believes she is clear, but not everyone is fully clear. When it involves others' positions, she marked ""adequate"" There are other uncontrollable factors.</p> <p>[1:35:00] But we're very clear ourselves, and I think that's a strong enough foundation.</p> <p>[1:35:12] However, when it involves partners, I'm unsure if they fully understand, so I tend to hold back. They may know their own responsibilities, but they might not know whether others are aware of them.</p> <p>[1:35:28] So I think it's appropriate to focus on what we can control. We can only ensure that we ourselves understand—we can't control others.</p> <p>[1:35:40] Guandu park, they know well about their own responsibility but they don't know if the others know about their own responsibility. So they think it's adequate.</p> <p>[1:35:56] We can only control ourselves</p> <p>[1:39:02] <i>Basically, the wetlands here are still viewed using natural resources. The hydrological conditions here are connected to the outside world, so we encounter an interesting situation.</i></p> <p>[1:39:15] <i>The hydrological environment here affects upstream areas, and we also affect the upstream residents or farmland.</i></p> <p>[1:39:27] <i>We are fortunate that most of the upstream areas are farmland and not residential areas, but we do encounter an interesting situation: if the salinity increases on our side.</i></p> <p>[1:39:41] <i>Because we are next to the Keelung River and Tamsui River, seawater may flow in, and an increase in salinity affects the farmland. We have a drinking water plan in place, where we open the floodgates of the embankment every month.</i></p> <p>[1:39:54] <i>This allows seawater with high salinity to flow in. However, we can't open the gates too much or for too long, as it could affect the surrounding farmland. Also, if we let too much in, it could cause the wetland to flood excessively and negatively impact the local ecosystem.</i></p> <p>[1:40:13] <i>Instead, it could head in a more unpredictable direction, so we need to limit it. We can only open the gates twice a month, and the duration of the opening also needs to be shortened to avoid affecting the surrounding farmland.</i></p> <p>[1:40:26] <i>This is something we need to consider or be reminded of when implementing these plans, to prevent changes in salinity in the farmland of landowners.</i></p> <p>[1:40:39] <i>Why is it being reminded? Because we've had scholars or others remind us that if opening the gates is beneficial, we could open them more frequently. In that case, we have to inform them.</i></p>	<p>Guandu Nature Park collaborates with various stakeholders, including the Taipei City Government, corporate CSR/ESG initiatives, NGOs, and schools, based on shared interests and objectives. Government departments such as the Animal Protection Affairs Office, the cultural department, and the Ministry of Education engage with the park for different activities. Schools visit for educational trips, while partnerships, like the Tamsui River alliance, have clearly defined roles and responsibilities. However, Guandu Nature Park internally understands its own responsibilities, but uncertain whether all partners fully grasp theirs. Some stakeholders may use the park's resources without fully understanding their obligations, though they generally follow the park's guidelines. The Park acknowledges that it can only ensure clarity</p>	<p>Adequate <i>Strong</i></p>

	<p>[1:40:53] We explain that we can open the gates more often, but that could potentially cause salinity changes in the surrounding farmland, which is not feasible. The other party understands, and that is something we need to consider from the start.</p> <p>[1:41:05] Why do we open the embankment to let seawater in? Because the biodiversity here will decrease if only freshwater keeps flowing in.</p> <p>[1:41:16] In a pure freshwater environment, without the embankment, biodiversity is high, so we bring in semi-freshwater from outside the embankment and allow it to flow into certain areas on our side.</p> <p>[1:41:28] The biodiversity of bottom-dwelling organisms and fish will actually improve because seawater comes in. During this process, the diversity of bottom-dwelling organisms increases, and the food supply for birds also increases.</p> <p>[1:41:39] Simply opening the sluice gates like this is actually very beneficial. Another aspect is that seawater salinity can suppress the growth of reeds or some tall grasses, which reduces the amount of work needed for weed control.</p> <p>[1:41:56] This means that by opening the gates twice a month, I can save tens of millions, even hundreds of millions, of weed removal costs, as long as I manage it like this. But we can't open the gates too much.</p> <p>[1:42:08] If too much water and salinity come in, it will affect others, so we need to find a balance in these practical operations. He mentioned that opening the sluice gates to let water in helps increase biodiversity, the food for organisms increases, and it can also improve their fat content.</p> <p>[1:42:49] So he mentioned about opening the gate to let the salt water to come inside. If the salt water come the benefit is that it will increase the biodiversity of the wetland. Because the creatures the animals, there will be an increase so the birds food will increase. The saltiness also will decrease the grasses growing so they don't to put that much effort into removing. But if you let too much salty water inside, it will influence the farmland beside the salt will farmland. So you have to make the balance between those two. So now they only open once or twice opening the gates and let the water come in.</p>	<p>within its own operations and cannot control others' understanding or actions.</p> <p><i>This is in connection with the previous discussion, the controlled use of flood gates to allow seawater into the wetland, balancing ecological benefits and agricultural impacts. Letting seawater in helps increase biodiversity by supporting bottom-dwelling organisms and birds while also reducing the need for costly weed removal. However, excessive seawater inflow could raise salinity levels, negatively affecting nearby farmland. To prevent this, managers carefully regulate the operation, limiting gate openings to once or twice a month to maintain both ecosystem health and agricultural viability.</i></p>	
6.3 (Periodic review of safeguards)	<p>[1:36:36] Every year, we review the budget to ensure regular inspections. This is to prevent damage to Guandu Nature Park and ensure effective resource utilization locally.</p> <p>[1:36:50] ...marked stronger checks because we have the funding for them.</p> <p>[1:37:02] Corporations sponsor projects that comply with regulations and are subject to regular reviews. Their internal processes audit these projects, and from our financial side,</p> <p>[1:37:14] we have accountants perform audits annually because we are accountable to the city government. Additionally, our conservation and education plans follow city policies. Otherwise, this would be too long; let me simplify.</p> <p>[1:37:25] Our conservation and education programs adhere to the city government's policies... Essentially, the funding we receive complies with the law.</p> <p>[1:37:38] Bank staff clearly track the money because we are required to report to the government. When corporations fund us, their internal teams also audit the funds.</p> <p>[1:37:52] So the funding process is transparent...</p> <p>[1:38:00] Basically, like the money coming in, they're all legal. The accountant is very clear where the money goes because we do have to regularly report to the government, and when corporations donate money they do internal audits as well so where the money goes is really</p>	<p>Funding for the organization comes from both government and corporate donors, with regular audits conducted by accountants and bank staff to ensure transparency. Overspending must be reported to headquarters, which allocates subsidies to cover deficits.</p>	Strong Adequate

<p>clear. As for environmental education and conservation work ... So our environmental and education programs are.. when we pitch those with the corporate and fit within their guidelines and majority of these projects also fit within government is pushing for like global warming, net-zero, NbS, all these so there' annual audits.</p> <p>[1:38:18] I think it was about annual audits of the budget and whether accountants verify it.</p> <p>[1:38:32] Our conservation and education projects are proposed to corporations, which internally audit them. We ensure that the proposals align with the objectives of conservation and education.</p> <p>[1:38:43] These projects comply with government regulations and current initiatives, such as climate change or nature restoration. Or now with the concept of "net-zero" policies.</p> <p>[1:38:56] These align with what the government is promoting. I believe we're on the right track. So our environmental education and conservation programs adhere to this framework.</p> <p>[1:39:28] For instance, global storm resilience, Net Zero, or NbS. Monthly evaluations ensure these projects have an impact.</p> <p>[1:40:51] With these evaluation mechanisms, if overspending occurs—whether on funding or other aspects—we address it.</p> <p>[1:41:03] Environmentally speaking, if damage occurs or costs exceed budgets, how do we resolve it? Overspending comes from our budget, right?</p> <p>[1:41:18] During project implementation, if we overspend, how do we resolve it? It's usually the headquarters.</p> <p>[1:41:30] If operational income cannot cover expenses, our cash flow might fall short. That's when we turn to the headquarters to cover the deficit.</p> <p>[1:41:41] Headquarters is essentially a nonprofit organization driven by its mission, not profit. Every year, they allocate subsidies to address these deficits.</p> <p>[1:41:54] Essentially, when there are losses, if we need to complete a task, we'll go to the headquarters, discuss it in a meeting, and they will allocate funds for us. However, when it comes to biodiversity outcomes, like in CSR reports, companies often expect certain results, such as an increase in biodiversity. If these expectations aren't met, how should we address it? I can explain why such situations occur—it might sometimes be due to environmental factors.</p> <p>[1:42:24] Basically, if we go over budget we run to the head office and say "we are out of money," and they loan us money.</p> <p>[1:43:03] Then basically, we explain why that doesn't happen cause you know it's environmental general we don't set the biodiversity criteria too high it's usually we are very modest with our KPI for that and a lot of the time we don't want to see a huge increase in biodiversity because when there is a huge increase in biodiversity, a lot of the times it means there's a huge increase in invasive species. Because that's the quickest way of increasing biodiversity. So generally we are modest unless we are reintroducing native species then we do expect a certain number But er usually tell the corporates up front that they might not survive at the end of the year and there will be some losses.</p> <p>[1:44:03] Does the periodic review really help prevent destabilization?</p> <p>[1:44:52] Periodic assessments are vital, as they help clarify the situation internally and externally, ensure compliance with tasks, and foster understanding of roles and responsibilities.</p> <p>[1:45:23] I haven't really memorized their acronyms either. But our government tracks terms like SDGs and similar concepts because they're commonly on company and governmental agendas and relevant to our projects. Every year, I attend forums in Taipei, and their SDG initiatives are impressive. Have you seen them? Like at the Taipei Expo—yes, that's very well done.</p> <p>[1:45:55] It's probably easier to understand those compared to others like ISO or CRI, which are highly technical and focus more on corporate management.</p> <p>[1:46:08] SDGS That's something that the government and corporate checks off on their list right now... These frameworks are sometimes overly complex, making them hard to understand. That's why they tend to focus on corporate management.</p> <p><i>[1:46:37] Because right now, even though we open the gate twice a month, the effects are not as good as before. So, how do we adjust it?</i></p> <p><i>[1:46:53] We have an interesting point: the amount of water that comes in when we open the gate is actually different each time. It's natural, because the tidal water levels vary each time, and the salinity also changes.</i></p> <p><i>[1:47:08] So, the impact conditions and effects vary each time, and they also differ seasonally. In spring, summer, autumn, and winter, what drifts in each month, as well as the organisms that drift in—such as larvae or even adult fish—will all be different. The diversity is extremely high.</i></p> <p><i>[1:47:21] However, we haven't conducted a very comprehensive assessment of this diversity. We do perform fish surveys, but only when we have funding. We commission experts to carry out these fish surveys.</i></p>	<p>Conservation and education projects align with government policies, including climate resilience, net-zero initiatives, and nature-based solutions. The organization also follows UN Sustainable Development Goals (SDGs), which are now a priority for the city government. Regular evaluations help maintain financial and environmental accountability.</p> <p><i>The effectiveness of opening the gate to let seawater in has declined over the years, but the exact reasons remain unclear due to limited data. Factors such as changing water temperature and nutrient levels may be influencing biodiversity, but fish and benthic organism surveys are only conducted when funding allows (every three to five years). Park managers are gradually building a database to better monitor ecological changes, using indicators like plant regrowth to guide management decisions. Financial constraints also affect conservation efforts.</i></p>	
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	<p>[1:47:33] The fish surveys might only be conducted once every three or five years, so they're not very thorough. However, we update the species lists, keeping track of which fish or organisms are coming in.</p> <p>[1:47:45] That's what we try to do. But as mentioned earlier, if we want to conduct assessments, one of the aspects we focus on is benthic organism surveys.</p> <p>[1:47:57] Regarding benthic organism surveys, the conditions were actually very good when we first started opening the gate. However, in recent years, the situation has declined. The exact reasons are difficult to determine, but during our surveys, one potential factor we identified is excessively high water temperatures.</p> <p>[1:48:10] However, the situation with benthic organism surveys has shown that conditions were very good in the initial years after the water gates were first opened, but they have declined in recent years. The exact reasons are difficult to pinpoint, as the surveys suggest it could be due to high temperatures or excessively warm water.</p> <p>[1:48:28] Or it could be an issue with nutrients, which causes certain things to decline. However, the data we've obtained so far remains quite vague.</p> <p>[1:48:41] So, we are still in the process of gradually building that database. Every year, we work on it step by step. Even if we observe this regression, we still need to identify clearly visible conditions, such as plant growth.</p> <p>[1:48:55] Since benthic organisms require sampling for evaluation, the management team needs a clear and quick indicator for assessment.</p> <p>[1:49:09] For example, if some plants start growing back in areas that were previously open, it means we need to put additional effort into managing these plants. This includes increasing irrigation or adjusting the degree of irrigation.</p> <p>[1:49:21] This also requires relying on certain indicators to manage the situation. Her question seems to lean in this direction.</p> <p>[1:49:34] My understanding is that when they open the gates, the water's effect changes due to differences in water composition and quantity, which impacts the surrounding ecosystems differently.</p> <p>[1:50:00] They did not assess every time, but they are conducting fish surveys.</p> <p>[1:50:13] They have conducted tests every three to five years to update the list of fish species when they began opening the water gates.</p> <p>[1:50:22] Everytime they open the gate to let the water in, every time it's different, because the saltiness is different. Animals that come with the water is different. They don't have the evaluation each time. They are doing the fish survey if they have money. If they have money 3-5 years. They they first start open the gate, the water inside, it was quite effective but the recent years the effect is not that good as before and maybe the water temperature and content of the water is different. They don't have enough data so they cannot make sure why this is happening.</p> <p>[1:50:28] The water inside was very effective initially, but recent users believe its effectiveness is not as good as before. Previously, ecological data could provide timely responses.</p> <p>[1:52:08] Of course, there is an interesting point of focus—we just mentioned it, right? The issue of money. If funding is insufficient, money becomes a problem.</p> <p>[1:52:20] A very direct suggestion or question often arises: 'Shouldn't you increase the number of sites for visitors to tour? You would need to open up more areas.'</p> <p>[1:52:32] For example, the core conservation area, which hosts many birds, often leads to suggestions that people should be allowed to enter the core conservation area. Visitors would be very interested in seeing the birds up close, and this could generate more revenue.</p> <p>[1:52:45] Yes, this could indeed increase income, but ecologically, this is unreasonable. As soon as people enter, the birds would fly away, and biodiversity would decrease due to human interference.</p> <p>[1:52:56] In reality, this connects to what I consider a 6-3 type question. In many areas, including human-managed environments, this trade-off also applies.</p> <p>[1:53:10] It's about deciding which areas can be opened and which cannot. For example, zoos allow visitors to see lions, tigers, and elephants, but it's not always necessary to cater to tourists for revenue generation.</p> <p>[1:53:23] And then allowing lions, tigers, and elephants to be touched and interacted with up close under the guise of 'getting closer to nature'—but in reality, this carries risks.</p> <p>[1:53:35] Or it could disrupt the balance. Our management office has a major focus on ensuring that development does not upset this balance.</p> <p>[1:53:49] We continuously pursue internal development. While external development like constructing buildings or altering the physical landscape is mentioned, there is also pressure for internal development.</p> <p>[1:54:00] For example, there is pressure to build additional trails into restricted areas, perhaps to attract more visitors or increase revenue. This internal development also faces similar pressures.</p>	<p>suggestions to increase tourism and opening core conservation areas to visitors, but these would disturb bird populations and harm biodiversity. Instead, the park prioritizes internal development that does not degrade the ecosystem, rejecting proposals like night operations. While additional funding could improve monitoring efforts and park management, a balance must be maintained between financial sustainability and ecological preservation.</p>	
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	<p>[1:54:12] Thus, there needs to be proper discussion regarding these matters. This ties back to the 6-3 question about monetary concerns.</p> <p>[1:54:24] Some people argue that you should open more areas for tourists, potentially opening up conservation spaces to increase income.</p> <p>[1:54:38] Opening up more areas could increase revenue, but this suggestion is not suitable for the environment.</p> <p>[1:54:50] It is not suitable for conservation, so they need to find a balance. Moreover, there are development pressures within the park as well.</p> <p>[1:54:56] So he mentioned that the problem of the money. Someone said you should open more areas for tourist to go into maybe open the core area that you're protecting to increase the income. But this suggestion is not good for the ecosystem and the conservation. SO this is the balance they have to find. There is also some development pressure inside the park. So they should develop but only inside the land. They only develop if the ecosystem isn't getting worst.</p> <p>[1:55:15] Give me a moment... External and internal development pressures should not worsen the ecosystem.</p> <p>[1:55:42] We have suggested things like opening for night operations, allowing camping, or opening trails. But these suggestions are often rejected.</p> <p>[1:56:12] We frequently encounter suggestions like these, but currently, these opinions are usually not accepted.</p> <p>[1:56:30] Or explain to the authorities that this issue is about the destruction of biodiversity. You know, at that moment, you might not accept those responses.</p> <p>[1:56:32] It depends on all kinds of situations, open at night or camp here, or making a path to the wetlands so people can walk inside. Something like that.</p>		
7.1 (NBS strategy)	<p>[1:57:18] They don't accept these kinds of feedbacks, they will go and explain to the public that no we are not going to do this thing because of what (ever).</p> <p>[1:57:34] The ecosystem has a lot of changes, so we spend a lot of energy recording things. For birds, for example, we keep doing the recordings ourselves.</p> <p>[1:57:46] Because the people recording are from our department, not indirectly from others. This makes a big difference, because if you're getting data indirectly...</p> <p>[1:57:58] At that point, when it's passed to second or third-hand, it can no longer be directly reflected in the management we can do. We might be able to act within half a day, a day, or even a week with the intensity needed for resource input.</p> <p>[1:58:11] The benefit of our management office is that we can do this type of long-term observation, always being here, and adjust to the dynamic changes in the environment.</p> <p>[1:58:26] Of course, another benefit is that we already have nearly 20 years of experience.</p> <p>[1:58:38] In these 20 years, the seasonal changes year by year generally do not vary too much. Of course, there are issues like climate change, greenhouse effects, and rainfall, but these are still manageable and solvable.</p> <p>[1:58:53] I say they are manageable and solvable because extreme rainfall cannot be fully handled in the moment, but we can address it through subsequent actions like dredging and weeding.</p> <p>[1:59:06] I mean, it can be accepted and resolved because heavy rainfall can't be fully managed at the moment, but it can be addressed through subsequent actions like dredging and weeding.</p> <p>[1:59:18] Or by increasing some management tasks, it is actually possible to reduce the pressure, for example, by increasing the amount of dredging.</p> <p>[1:59:30] Or by expanding the ditches, or opening the sluices to let the water out—these kinds of tasks. So they spend a lot of time monitoring the situation.</p> <p>[2:00:19] ... They adjust through real-time data, and with 20 years of experience, they know the seasonal changes throughout the year.</p> <p>[2:00:32] They spend a lot of effort monitoring the birds. The monitoring is directly done by the park itself not by other people. They can get the immediate data, do the adjustment by the immediate data. They have 20 years experience so they know the weather's seasonal changes of the whole year. Although every year they may have some events like the strong precipitation or typhoons or something but they can still adjust and be solved. Like the strong precipitation they can solve the problem by cleaning the river stream, or trimming the grass or open water gate let the water go out. So they can do something to let the event have less impact on the park.</p>	<p>Since the park managers record data firsthand and have 20 years of experience, they have the tools and knowledge to make adjustments quickly.</p>	Adequate
7.2 (Monitoring and evaluation plan)	<p>[1:49:26] Monitoring and evaluation are important. For example, in environmental education, we are required to comply with the Environmental Education Act, which mandates periodic reviews and assessments every few years.</p> <p>[1:49:37] Yes, for these assessments, government evaluations are needed. They often require adherence to environmental education standards. Leisure management is also subject to requirements from tourism bureaus, including oversight by the Tourism Bureau.</p>	<p>Guandu Nature Park managers also handle external reviews, primarily focusing on</p>	Strong Strong

	<p>[1:49:50] For environmental education, we need to meet standards for facility evaluations. We also need to comply with fire safety regulations. If we operate here, we must meet all relevant laws.</p> <p>[1:50:03] For instance, public safety inspections, fire inspections, reporting electricity usage, and obtaining licenses for using high-voltage electricity or operating parking lots are all required.</p> <p>[1:50:15] Additionally, restaurant operations require staff to undergo basic health checks according to regulations. When we apply to the city government for hosting large-scale events, we must comply with their event standards.</p> <p>[1:50:27] Many of these regulations align with Taipei City Government standards since we are an outsourced facility under their jurisdiction. Compliance with the law is mandatory, and regular evaluations are conducted.</p> <p>[1:50:41] They conduct regular audits every four months, where experts and scholars review our operational performance, including visitor numbers and work reports, and then provide their thoughts and suggestions.</p> <p>[1:50:54] During the next audit, we present our progress in addressing their recommendations. However, some committee members are not directly involved in our operations. Their feedback is more general, and we handle the actual implementation.</p> <p>[1:51:20] Implementing these tasks isn't too challenging for us because we are driven by a strong sense of mission. We understand why we work on this land—to conserve and protect the Guandu Wetlands.</p> <p>[1:51:31] One focus is the conservation and protection of the wetlands, including its bird species. Preserving the entire Guandu Nature Park involves dividing it into zones for different purposes and user groups.</p> <p>[1:52:24] Running the park requires compliance with numerous governmental requirements. For example, fire safety, health, and food safety regulations for restaurants must all be followed.</p> <p>[1:52:42] We are certified as an environmental education center, so we must adhere to the Environmental Education Act, which mandates assessments every five years to maintain certification. Additionally, there are tourism-related requirements.</p> <p>[1:53:12] How often are tourism reviews conducted? Currently, it's every two years. We adjust our tourism policies to align with government standards.</p> <p>[1:53:31] ... We need to meet a lot of standards and undergo inspections to ensure a safe and well-managed environment for visitors.</p> <p>[1:53:45] As for environmental and agricultural production, there isn't much external oversight. For instance, we use our own monitoring systems, like SGS certification, to check on our rice and lotus root cultivation.</p> <p>[1:52:48] But basically because the running the running of the park, fit fire safety, restaurant have to fit with food safety inspections, elevator, there's a bunch of building requirements and because we are certified as an environmental education facility, there's a law for the education every 5 years and there's a different one for tourism so we do that, every 2 years. We have to get parking permits and a bunch of permits that deal with governmental regulations. There's a lot of requirements and audits that we have to do to make sure that this is a safe environment for people to come in. But in terms of the environment and biodiversity portion, no one checks, we do water quality for the constructed wetland portions, SGS when we plant rice and lotus roots. Those we do monitoring.</p> <p>[1:55:01] We have many pollution issues that do not meet regulations, especially with habitat management and our ecological surveys. No one comes to inspect us, so we check ourselves. Maybe we should involve a third party for verification. This is something we should consider. For example, in terms of water quality, we do monitor it, but the results might not be great because we are affected by pollution. So, for ecological aspects, we may lack third-party verification.</p> <p>[1:55:26] Third-party verification now costs money, and we haven't spent on that. We do bird monitoring, but we haven't brought in a third party to verify our bird monitoring. They don't need to do that; they are just interested in whether we are doing it. It's like with animal protection—they don't require us to have third-party certification, just that we are doing it and following the regulations.</p> <p>[1:49:26] Monitoring and evaluation are important. For example, in environmental education, we are required to comply with the Environmental Education Act, which mandates periodic reviews and assessments every few years.</p> <p>[1:49:37] Yes, for these assessments, government evaluations are needed. They often require adherence to environmental education standards. Leisure management is also subject to requirements from tourism bureaus, including oversight by the Tourism Bureau.</p> <p>[1:49:50] For environmental education, we need to meet standards for facility evaluations. We also need to comply with fire safety regulations. If we operate here, we must meet all relevant laws.</p> <p>[1:50:03] For instance, public safety inspections, fire inspections, reporting electricity usage, and obtaining licenses for using high-voltage electricity or operating parking lots are all required.</p> <p>[1:50:15] Additionally, restaurant operations require staff to undergo basic health checks according to regulations. When we apply to the city government for hosting large-scale events, we must comply with their event standards.</p>	<p>environmental education and safety aspects of the park. They obtain SGS certifications for the rice they cultivate and ensure that the environmental education center meets the required standards. Regarding biodiversity, they have real-time monitoring data and generate high-quality bird data.</p> <p><i>The Park managers carefully schedule construction and maintenance activities based on their long-term observations of local wildlife. From March to May, they stop construction to avoid disturbing the breeding season of birds, insects, and small mammals. August to September is considered a suitable time for tasks like weeding, as most young animals have matured and can move independently. However, all work must be completed before November, when migratory birds arrive for the winter, as any disturbances could drive them away permanently. Their 20 years of experience allow them to predict seasonal patterns and plan management activities accordingly</i></p>	
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It's like with animal protection—they don't require us to have third-party certification, just that we are doing it and following the regulations.</p> <p><i>[2:02:24] Even insects are in their breeding season. So if construction is carried out during this time, it would severely disturb these organisms. After July, in August and September, it's more suitable to conduct engineering tasks such as weeding.</i></p> <p><i>[2:02:41] During this period, many bird species and small mammals have already raised their young and the birds can already fly. Therefore, by this time, breeding has generally finished, and it's less likely that large-scale construction work will harm these species.</i></p> <p><i>[2:02:54] However, all engineering work, including weeding, needs to be completed by September or October, before the winter migration period starts in November.</i></p> <p><i>[2:03:08] November and December are the wintering period. If construction or disturbances continue during this time, migratory birds will be disrupted, which could destabilize their wintering process.</i></p> <p><i>[2:03:23] Actually, it's very easy for them to fly away and leave the area. So, after observing these changes over many years, it is very clear when and which species will appear.</i></p> <p><i>[2:03:35] We even know which birds, and even which fish, start their breeding cycles. This is all based on our long-term experience. So, when it comes to determining the timeline for projects or management tasks, we have these insights to guide us.</i></p> <p><i>[2:03:52] Since they've been here for 20 years, they know what happens every month.</i></p> <p><i>[2:04:04] For example, from March to April is the breeding season.</i></p> <p><i>[2:04:16] During this time, they stop any disturbances because the animals are all in their breeding period. This would affect them if anything happens between February and March.</i></p>	<p><i>to minimize ecological disruption.</i></p>	
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	<p>[2:04:28] <i>It's also a good time to cut the grass, as the young animals can move on their own and it won't cause too much disruption. From November to December is the winter season.</i></p> <p>[2:04:37] <i>So because they are here for 20 years. so they know like which time what is happening. Like march to May is breeding season so they will stop the constructing. August to September it's okay to trim the grass because every animal grow up and can move by themselves. It won't be too much influence. November to December is winter, you should stop constructing because there are winter migration birds that are coming. If you construct here they will fly away and never come back.</i></p>		
7.3 (Framework for adaptive management)	<p>[2:03:04] So they mentioned 3 examples, like for the wheelchairs they can go through the whole building without obstacles because of the laws so they do this thing. The other example is the buffer zone area. That area is originally the rice paddy field and they go with the policies for the water quality the water purify policy. So they make that area into wetland and make that area into the buffer zone. For the education example normally the classes children, more 6 years old or older. Below 6 years old they tell them the park and the classes are for children 3-6 years old.</p> <p>[2:04:37] <i>So because they are here for 20 years. so they know like which time what is happening. Like march to May is breeding season so they will stop the constructing. August to September it's okay to trim the grass because every animal grow up and can move by themselves. It won't be too much influence. November to December is winter, you should stop constructing because there are winter migration birds that are coming. If you construct here they will fly away and never come back.</i></p> <p>[2:04:43] <i>You should stop the intervention because in winter, there will be migrating young ones coming through. If you intervene here, they will fly away and not return. This is the lifecycle of the area.</i></p> <p>[2:05:12] <i>What this means is that if you notice a problem somewhere, you take the necessary steps to improve it.</i></p> <p>[2:05:28] <i>Then, you check again to see if the problem persists. If it does, you keep improving it, and you continue the cycle until the issue is resolved. It's an action-research approach: find the problem, solve the problem.</i></p> <p>[2:05:39] <i>It's like the lifecycle of farming, or rolling evaluations, right? Is that the correct explanation?</i></p> <p>[2:05:52] <i>In simpler terms, it's like crop farming. The rice fields are cyclical each year, but if the harvest doesn't go well, you think about what adjustments need to be made.</i></p> <p>[2:06:04] <i>You would implement actions like adjusting cultivation, using artificial storage, or applying chemicals. From a management perspective, if I do these things during a season's harvest, I'm making sure things are controlled and improved.</i></p> <p>[2:06:15] <i>If I don't take any action, my harvest could be halved or significantly delayed. So I need to think about it this way, and if you explain it that way, I can think of it from that perspective.</i></p> <p>[2:06:27] <i>In management, we often look at the lifecycle, whether it's a season or a year, and analyze what went wrong. For example, if our harvest for the small school is low, we consider where the issues might be.</i></p> <p>[2:06:39] <i>Is it related to rainfall, or did we cause significant disturbance by doing construction at the wrong time? In this process, if there were originally 50 black-faced spoonbills that settled, they would fly away as soon as people approached.</i></p> <p>[2:06:52] <i>So I have to manage the movement of people. It's not about visitors but about the movements of our management staff or when we need to be in certain areas. This is something we need to adjust.</i></p> <p>[2:07:04] <i>However, does it follow a cycle? Many things do, like bird cycles, plant management, agricultural cycles, and even water temperature cycles. Water temperature, for instance, follows a cycle.</i></p> <p>[2:07:16] <i>For example, we have winter rains, spring rains, the plum rain season, then the typhoon season, followed by autumn. Each has its own rainfall cycle and monsoon cycle, and these can be referenced and used in our planning.</i></p> <p>[2:07:30] <i>That's also an experience. So, I mentioned earlier that using the experience of farmers is helpful because farmers know when to sow seeds, when to plant rice, when to weed, and when to harvest.</i></p> <p>[2:07:43] <i>It's a cyclical process. I would explain it this way. Yes, give me some time. This kind of self-regulation works. If they notice a decrease in resources, they'll check to see if it's due to risk factors.</i></p> <p>[2:08:18] <i>Or if it's because the design of people's movement routes has changed. Essentially, the key is whether, when encountering a problem, you can solve it.</i></p> <p>[2:08:32] <i>Review and take further steps to explain. For example, in winter, the sediment accumulation. If there's too much debris, it can't be dealt with properly.</i></p> <p>[2:08:51] <i>There's too much residue. If you explain it with concentrated geological material, it should be faster.</i></p> <p>[2:09:03] <i>Yes, but don't leave the remnants or touch other things. And like farming—the farmers—they'll see if they didn't harvest well this year.</i></p>	<p>If they do not pass the requirements set by the government or other agencies for the licenses and certifications they cannot operate. In terms of learning it has a lot to do with managements such as the examples mentioned.</p> <p><i>It is important to ecological cycles and use experience to manage environmental interventions effectively. Local knowledge is important in determining the best times for activities such as construction, grass trimming, and conservation efforts to minimize disruption, especially for migratory birds. The management approach follows an adaptive management and iteration learning where problems are continuously identified, solutions are implemented, and strategies are adjusted based on outcomes. The conservation department thinks of this like farming, highlighting the</i></p>	Strong Adequate

	<p>[2:07:30] That's also experience. So, I mentioned earlier that using the experience of farmers is helpful because farmers know when to sow seeds, when to plant rice, when to weed, and when to harvest.</p> <p>[2:07:43] It's a cyclical process. I would explain it this way. Yes, give me some time. This kind of self-regulation works. If they notice a decrease in resources, they'll check to see if it's due to risk factors.</p> <p>[2:08:18] Or if it's because the design of people's movement routes has changed. Essentially, the key is whether, when encountering a problem, you can solve it.</p> <p>[2:08:32] Review and take further steps to explain. For example, in winter, the sediment accumulation. If there's too much debris, it can't be dealt with properly.</p> <p>[2:08:46] So the lifecycle is like if they find the ducks is decreasing, they will see what happened to the environment because of the precipitation or is it because the people the path is redesigned. There are also different lifecycles like the precipitation, the winter precipitation, the mēiyǔ (plum rain). And the farming, the farmers they will see if they didn't harvest well this year, they might think what did I go wrong? Did the time I do this thing is not the right time or is it because of the water level is it different or something? They will see it and adjust and the next year go again.</p> <p>[2:08:51] There's too much residue. If you explain it with concentrated geological material, it should be faster.</p> <p>[2:09:03] Yes, but don't leave the remnants or touch other things. And like farming—the farmers—they'll see if they didn't harvest well this year.</p> <p>[2:09:20] They might wonder, 'What did I do wrong? Is the timing of this thing not right? If I didn't do well this year, I might think I made a mistake. Was the timing of what I did wrong? Or was it because the water levels were different?</p> <p>[2:09:34] We'll see it, and then change, and next year, we'll do better. Each year, we improve based on experience.</p> <p>[2:12:25] We also consider whether water birds should be treated as an indicator species because of the uniqueness of their habitat, which is quite rare in the northern part of Taiwan, primarily concentrated in the south.</p> <p>[2:12:37] In Taiwan, they are quite rare in the northern part, mostly concentrated in the south. Here, we observe this species every year around this season, in April and May.</p> <p>[2:12:50] The migrating bird searches for nesting habitats, and the water quality in the Guandu Plain fluctuates. Can we provide a habitat for it? But in reality, this project has never been very successful.</p> <p>[2:13:04] It has bred here before, but that breeding was a beautiful mistake because it was on water lilies, not on the aquatic plants we provided, which it actually needed.</p> <p>[2:13:16] However, we face a major issue when trying to provide aquatic plants—they don't grow wide enough due to seasonal changes. Also, the golden apple snail, an invasive species, is eaten by fish or other snails, so our native habitat for this bird has not been successful.</p> <p>[2:13:32] But we don't want to use invasive species like the golden apple snail or water lilies to attract them, because they would have a negative impact on the environment.</p> <p>[2:13:44] So this really been promoted or implemented effectively, as we haven't promoted it externally; it's an internal plan.</p> <p>[2:14:46] So for example its a kind of bird called 水雉 (water pheasant), it is a quite special bird and at this season they are fiding the breeding place and Guandu Park they are thinking of "should we make a habitat for them?" Because they usually breed on the water area with plants on the water area, and so once this kind of bird come to breed in Guandu Park. It is on the invasive species (parts were cut out due to secret projects)</p> <p>[2:15:31] Because it is more of an experimental management system. If they proposed this plan externally or to the public sector, it would face a lot of pressure for execution.</p> <p>[2:15:44] But when we discuss the potential success rate, it's actually very low. However, if a lot of funds are invested, the low success rate is unreasonable.</p> <p>[2:15:50] But for biodiversity conservation and protection, investing some manpower and resources into this area is actually a positive thing.</p> <p>[2:15:57] Unfortunately, the situation is not ideal, but they still come every year. It's just that the habitat hasn't reached the condition they like to stay in.</p> <p>[2:16:05] So it's a good thing if they focus their efforts on protecting biodiversity.</p> <p>[2:16:12] They can work on protecting the species, but because this kind of habitat is difficult to build and the success rate is low, they don't recommend it to the government.</p> <p>[2:16:20] They just want to try, but it's not easy. This is also based on our experience: you need to directly assess whether this thing can be effective.</p>	<p>importance of working with seasonal patterns. Observing nature's rhythms helps in making informed decisions that balance conservation with necessary interventions. The dialogue also emphasizes the need for flexibility, as unexpected ecological changes may require adaptive strategies. Additionally, long-term monitoring and collaboration with local communities enhance the effectiveness of interventions. Practical knowledge, often gained through trial and error, is essential in refining conservation techniques. Understanding human impact on ecosystems and incorporating scientific research can further improve management strategies. Ultimately, successful environmental management requires a combination of experience, research, and adaptability.</p>	
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	<p><i>[2:17:04] Because when you encounter a point where it's ineffective, the criticism will actually outweigh the positive feedback. This is interesting; they have more confidence than the public, so they have to think carefully.</i></p> <p><i>[2:17:06] So it is good if they put effort into making a habitat and protect this bird and make the habitat for this bird but because it is not easy to build this kind of habitat and the success rate is not high. They didn't promote it to the government. They want to try to do it but it is not easy.</i></p> <p><i>[2:17:22] Similarly, they agree that investing this part of the funding is reasonable and is for the greater good, but is it successful? If it fails, it must be accepted, and this premise has to be in place first.</i></p> <p><i>[2:17:37] Only then will they execute the plan. Even if it fails, it's okay. As you said, the ecosystem is constantly changing, but that change may not be visible in just one year because many people would hope to see immediate results.</i></p> <p><i>[2:17:50] But it might take a long time, or sufficient time, to see any changes. Many things, especially in ecological conservation or carbon sequestration, take time. It's not like planting a tree and immediately absorbing a ton of carbon—it's not that simple." "It requires time. So, certain projects need time to succeed.</i></p> <p><i>[2:18:01] They have to consider if they will succeed or not. If they are not successful they will be scolded by the public. They got scolded more from the council from the public so that they have to think wisely.</i></p> <p><i>[2:18:19] Okay, so you're integrating it into your learning and adaptive management.</i></p>		
<p>8.1 (Information sharing for transformative change)</p>	<p><i>[2:09:56] In fact, over the past 20 years, we have already expanded to various regions across the country, and even had exchanges with Mainland China. Yes, we've even done exchanges with Mainland China, which shows that we have gone beyond just the Guandu Nature Park.</i></p> <p><i>[2:10:07] We have also done exchanges with Taiwan as a whole and internationally. Yes, we have engaged in international exchanges, and also had exchanges with Mainland China, where several of our staff members have participated.</i></p> <p><i>[2:10:32] Yes, the training for survey staff. We also had staff exchanges with WWF Hong Kong at that time. We sent people there for internships.</i></p> <p><i>[2:10:44] They also sent people here for internships. So, they have already built international relations in Taiwan.</i></p> <p><i>[2:11:13] They went there to learn about trade.</i></p> <p><i>[2:11:24] So for education, they are already national they are doing education all over Taiwan and before the pandemic there is international relationship, they go there to have some educational and exchange of the professionals (people) and the other countries have people to work here and exchange knowledge.</i></p> <p><i>[2:14:37] Because a lot of our projects for upscaling require corporate input so then we do annual pitches for new projects, and a lot of the time it's regular updates for the corporates or the government letting them know our plans for the future. Sometimes when we mention something, there's an interest and if there's an interest there's a possibility to do these projects in the future and because we have regular steering committee meetings so we let them know what we're working on right now and possibilities for future so when people know about these plans, then there's a possibility of going forward. And because we do regularly attend, we're part of the Wetland link International, it's an important international organization for wetlands, they hold bi-annual meetings so every 2 years this year they're holding one in Sri Lanka. So we will go over and interact with other wetland managers and exchange ideas.</i></p> <p><i>(refer to indicator 5.3, 5.4, 7.3)</i></p>	<p>Guandu Nature Park has expanded beyond its local operations, engaging in national and international exchanges, including collaborations with Mainland China and WWF Hong Kong. Staff members have participated in training programs and internships abroad, fostering global knowledge exchange. The park also conducts educational initiatives across Taiwan and previously maintained international partnerships before the pandemic. Additionally, they pitch projects to corporate and government stakeholders to secure funding for upscaling efforts. As a member of Wetland Link International, they participate in bi-annual meetings to exchange ideas with</p>	<p>Strong Strong</p>

		wetland managers worldwide, strengthening their global network.	
8.2 (Policy, regulations, and laws)	<p>[2:18:09] Actually, the impact is local. [2:18:24] It also influences the wetland law. Yes, the wetland law. Also Influence the wetland law? yes</p> <p><i>[2:20:14] When legislation was being done, we actually participated because they were working with the Council of Agriculture, or maybe it was the Executive Yuan, the Executive Yuan commissioned the legislative work.</i> <i>[2:20:26] They found us, and we hoped to discuss the legislative proposal with them. So they were involved in the discussions when they were setting the water sources.</i> <i>[2:20:54] they are involved in the wetland construction.</i></p>	<p>Even previously, the Guandu Wetland managers abide by the Government regulations especially when it comes to compliance of management and accounting. They also have influence in decision making of Wetland law and comply</p> <p><i>Guandu Nature Park Managers are involved in decision making during wetland construction.</i></p>	<p>Strong</p> <p><i>Strong</i></p>
8.3 (National and global targets)	NA	NA	NA

Supplementary Table 3. Results from Interviewee 3 (Forestry Bureau), showing the scores for each indicator.

Criterion	Recording	Rationale	Score
1.1 (Identification and prioritization of societal challenges)	<p>[02:04] I think one aspect is that they asked about the societal challenges being faced. From my experience, I know that in the past, there were challenges like avian influenza or issues in urban areas. [02:22] For example, urban ecosystems provide services like water conservation, flood regulation, and carbon sequestration. [02:37] These values can be linked to Taipei City's ecosystem service values. For instance, avian influenza affects groups such as the general public, teachers, students visiting parks for learning, or park management teams. [03:05] The latter is because park management requires ticket revenue. If learners don't visit, their budget tightens, leading to operational pressures. As for wetlands and floodplain management, [03:23] currently, in Taiwan—or Taipei City—residents haven't significantly perceived a connection between wetlands and the city's coastal flooding. [03:39] In the future, if extreme rainfall becomes more frequent, would it have more noticeable impacts? This is something we need to pay attention to. [03:55] So, are you saying that Taipei residents haven't yet felt the connection between coastal waters and wetlands because the rainfall hasn't been severe enough yet? Yes, exactly. [04:12] This is also related to our topography. We know that wetlands provide flood prevention functions, but in my 20+ years of living in Taipei, [04:28] only once during a typhoon or heavy rain did the entire MRT system flood. At that time, the wetland's functions or societal challenges didn't seem to be connected.</p>	<p>Taipei residents have not perceived a clear connection between wetlands and urban flooding, despite wetlands' recognized role in water regulation. While wetland functions, such as flood prevention, are acknowledged, their impact is not widely felt, especially during past heavy rainfalls or typhoons. There academic knowledge of wetlands'</p>	Partial

	<p>[04:44] Academically, we know wetlands help with water regulation, but in that instance, the wetland function didn't appear to play a role in addressing the challenge.</p> <p>[05:00] I'm unsure if this is due to tides, geography, or whether rainfall and other factors are unrelated.</p> <p>[05:19] Since the question asks about challenges and who is affected, my answer is that avian influenza is a challenge I know of. For wetlands,</p> <p>[05:33] while people acknowledge their functions, those functions don't seem to be utilized to address challenges. I don't know if in the future there will be a time when these functions are activated to reduce certain challenges.</p> <p>[05:50] ... One societal issue mentioned is food security.</p> <p>[06:09] Another part is about ecosystem services because everyone says wetlands prevent urban flooding.</p> <p>[06:29] However, I think most people don't feel the connection between flooding and wetland functions. So, the public might not think about it.</p> <p>[06:51] They know wetlands help prevent problems, but they don't feel it.</p> <p>[07:12] Because they can't perceive how these challenges are addressed, I mentioned that while everyone assumes certain functions exist,</p> <p>[07:27] these functions don't easily connect to challenges. So, I can't clearly identify who would be impacted because some mechanisms aren't apparent.</p>	<p>functions, their role in addressing challenges like flooding remains unclear to the public. There is also mention of other societal issues, such as food security, but the general perception of ecosystem services, like wetland flood prevention, does not seem to align with how these services address real challenges. Additionally challenges like avian flu or bird flu have negatively influenced everyday lives of residents.</p>	
1.2 (Documented societal challenges)	<p>Tuesday at 11-25 AM.aac</p> <p>[00:12] Regarding 1.2, I think I'll focus on the emotional aspect of the challenge. What I know is that they may have needed to implement some source control measures at that time.</p> <p>[00:24] Because the challenge impacted their operations, they might have had to...</p> <p>[00:36] figure out how to communicate with the public, explaining that even if you maintain a respectful distance while observing, you can still see the birds.</p> <p>[00:49] The reason for this is that their business had declined, and they needed ticket sales as a source of revenue.</p> <p>[01:01] So, they will still need to engage in certain public communication efforts related to the social aspects of environmental education.</p> <p>[01:13] For one 1.2 she focusses on the bird flu they have some restriction for entering the of the park and the influence of the managing and the income because people not coming. What they do is to tell the public is that if you keep the distance from the bird, you can still come and watch the bird because not that dangerous because they have to say to the public. They are not coming but they need the income</p>	<p>This highlights the negative impact of avian flu, which led to fewer visitors coming to Guandu. To generate revenue, they allowed visitors to enter while ensuring they maintained a safe distance from the birds.</p>	Adequate
1.3 (Identified human well-being outcomes)	<p>[02:51] perhaps the simplest approach is to start with species population data, such as birds or plants.</p> <p>[03:03] Using these basic survey data, we could estimate metrics like wetland carbon sequestration or bioindicator values.</p> <p>[03:17] Then, based on these indicators, we could assess the park's ecological services if we consider it as a micro-ecosystem.</p> <p>[03:29] We might also need to evaluate the public's perceived value of this area to estimate its social aspects. These are core issues related to biodiversity.</p> <p>[04:02] From these topics, you can see the biodiversity services and attributed values that could emerge, although they might not yet be fully established.</p> <p>[06:05] if Taipei residents feel that Guandu Nature Park is part of the city government, then they might perceive its value in terms of how much it's worth having or not having.</p> <p>[06:19] Suppose Guandu Nature Park were destroyed, and the residents didn't want that to happen—how much would they be willing to pay to prevent its destruction? Of course, the issue is more complex than that.</p> <p>[06:31] These types of considerations fall more under the realm of economics. When I studied this with my professors, we discussed concepts like "existence value," which introduces another layer of socio-economic thinking.</p> <p>[06:42] Because if we reverse the premise and ask: "What is the relationship or exchange value between NBS (Nature-Based Solutions) and humans?"</p>	<p>There is a need to monitor human well-being, including individual health, as part of evaluating NbS. This requires integrating social and economic factors into assessments, as environmental quality directly influences public health. Efforts to sustain the park must demonstrate tangible benefits to</p>	Insufficient

	<p>[06:57] If humans know they need to spend \$100 to protect an NBS, then we must understand whether people consistently value that \$100 as worth it.</p> <p>[07:11] Earlier, we talked about the environmental quality of the NBS itself (e.g., flora and fauna), but another angle is the need to monetize or use economic factors to sustain the overall system.</p> <p>[07:29] Maintaining this environmental quality would require such economic inputs. In this context,</p> <p>[07:40] it's essential to prioritize and monitor human well-being. How should we monitor, measure, or evaluate it? This goes beyond natural sciences and involves value judgments from humans.</p> <p>[07:57] When discussing issues like human health, it's suggested that we should include social and economic aspects. For example,</p> <p>[08:24] imagine if you were the mayor—this raises a question similar to this situation: since you're responsible as a leader, as part of this city,</p> <p>[08:50] how much would you be willing to spend on maintaining this park? The park management, in turn, would need to communicate with the public about the cost of their efforts and</p> <p>[09:05] the benefits those efforts bring to citizens. They'd need to justify the costs and explain how their actions contribute to the well-being of residents.</p> <p>[09:18] The key would be convincing citizens that these efforts are beneficial and worth the investment. However, the value that citizens perceive might not always align with the actual costs.</p> <p>[09:29] This depends on the communication skills of the park management. But I think they should actively monitor fluctuations in perceived value,</p> <p>[09:40] to ensure that maintaining the NBS and its benefits remains recognized by the public. Otherwise, they might end up investing efforts that go unnoticed by the public or lack support.</p> <p>[09:54] This alignment of perception and investment is critical. They need to ensure that their actions resonate with the market's approval.</p> <p>[10:18] For instance, imagine being the mayor—how much would you invest to protect this park? Would the public agree with the value of such an investment?</p> <p>[10:38] If the cost were high, you'd need to engage with the public and highlight the park's benefits to justify the expenditure.</p> <p>[10:56] You might even need to demonstrate to residents the unique advantages they gain, convincing them to willingly invest more in the park.</p>	<p>human health and well-being to ensure public support and justify the investment.</p>	
<p>2.1 (Interactions between economy, society and ecosystems)</p>	<p>[12:49] establish connections with nearby schools like high schools or middle schools. If I were a manager at Guandu, I'd consider integrating educational partnerships into the park's operations.</p> <p>[13:19] For example, monitoring programs could be tied to middle school science curricula. Collaborating with science teachers, we could design outdoor activities that align with the curriculum.</p> <p>[14:15] Each year, middle school students could participate in data collection activities, gradually building a dataset maintained by the park.</p> <p>[14:28] This data could encompass species tracking, environmental quality metrics, or long-term monitoring results.</p> <p>[14:43] Engaging schools in this way not only educates students but also generates meaningful data for the park. This process could also help strengthen the park's operational capacity.</p> <p>[15:11] Beyond local collaborations, Guandu could exchange data with other wetland management organizations, such as those in central or southern Taiwan.</p> <p>[15:26] Data exchange can also be conducted, allowing them to understand environmental changes in wetlands across different regions of Taiwan, or alternatively...</p> <p>[15:38] Since this area is known for migratory birds, collaboration might reveal migration patterns—for instance, birds seen in Guandu might later appear in Taijiang or Longmen.</p> <p>[16:01] This could contribute valuable insights into the ecological role of NBS in wetland systems.</p> <p>[16:12] In summary, Guandu could focus on building internal capacity while fostering collaboration with other wetlands like Taijiang and Pingtung's sandy shores.</p> <p>[16:57] They can exchange data, for example, "I saw this bird here," but next week it might no longer appear. In Tainan, researchers in Taiwan's schools are also conducting similar studies.</p> <p>[17:12] Our goal is to collaborate with schools.</p> <p>[17:25] For instance, middle schools, high schools, and senior high schools. They can work together. Perhaps they could come to Guandu for classroom lessons and learn during the class.</p>	<p>Guandu Wetlands could establish partnerships with local schools, integrating educational programs into its operations. Middle school students could participate in data collection activities, contributing to long-term environmental monitoring efforts. This initiative would not only enhance student education but also provide valuable ecological data for the park. Collaboration with other wetland organizations across Taiwan, could further expand data exchange</p>	<p>Partial</p>

	<p>[18:10] This approach is relatively cheaper, more cost-effective. OK, so for this part, I think it's partial; it's not entirely feasible.</p>	<p>and improve understanding of environmental changes and bird migration patterns. These efforts would strengthen Guandu's operational capacity while fostering regional cooperation in wetland conservation.</p>	
<p>2.2 (Complementary and synergies)</p>	<p>[19:37] In Chinese, the sequence emphasizes breaking down the modules and expanding them. How to bring stakeholders into the process? I believe that, methodologically, Guandu itself can... [19:50] These stakeholders, of course, won't be equally distant; there should be a core, second, and third ring type of structure. [20:04] Then they could prioritize specific issues and form working groups accordingly. How would you ensure participation? [20:17] I think this part requires some techniques because many stakeholders may think, "This isn't really my responsibility," or, "I don't want to contribute more." So what kind of mechanism would you use to involve them or future participants? [20:32] To make them willing to join? From my experience, the first step is to identify the stakeholders, and then the second step is to form working groups from them. [21:13] After forming the working groups, you need to ensure they don't just sit there passively. They must contribute. However, without any enforcement mechanism, what can you do? [21:28] You could use transparency as a tool. For example, publish the stakeholders' contributions and effectiveness in an open platform. [21:39] Monitoring data, assessment results, and the contributions of each member could be made publicly accessible within the group. [21:55] This would encourage members to reflect, "Can I do more?" But this only tackles the numbers. When building a working group, you also need to foster a positive atmosphere. [22:09] If the environment becomes overly competitive or hostile, people will stop sharing data altogether. [22:22] So fostering a positive atmosphere and ensuring data accuracy are crucial mechanisms for participation. [23:33] First, identify participants, whether they are closely tied to the park or more distant. Then establish public structures and connect everyone. [24:08] Prevent individuals in the team from doing nothing. For example, if a stakeholder only relaxes without contributing, they must be held accountable. [25:24] To encourage a positive working atmosphere, transparency within the group is vital. But not all information must be made public—only within the group. [26:05] The stakeholders form a new community, and external transparency creates public recognition of their efforts, thus pushing the group forward. [27:08] By showing citizens the group's positive impact, you can encourage both participants and the public to support the initiative. [28:00] This involves interdisciplinary and transdisciplinary solutions. [29:14] When various departments collaborate to find solutions, it's effective. [29:27] Stakeholders may encounter challenges when engaging with the public. Public departments might also need to coordinate responses. [30:30] However, Taipei's government seems passive regarding this, as they prefer outsourcing tasks to NGOs. [31:28] While NGOs handle data collection, analysis, and public communication, certain public-focused aspects might remain incomplete. [32:14] Public interest issues or long-term environmental impacts often fail to attract attention unless they involve immediate threats to life or property. [32:27] How do we address this? By increasing awareness and involvement in such long-term issues. [33:21] As projects scale up, identifying risks and managing them effectively becomes more challenging. [33:46] Upgrading projects often brings new issues. How do you address these?</p>	<p>It was suggested to form a working group for specific issues to ensure participation. Responsibilities should be divided, and mechanisms must be used to involve stakeholders more in the future, ensuring that every stakeholder contributes. Data must be made publicly accessible, and, more importantly, a positive working environment will foster participation. Accountability must be upheld to ensure progress. This may also spark public interest and encourage participation from NGOs. As the project evolves, risks must be identified.</p>	<p>Partial</p>

2.3 (Risk identification and management)	<p>[34:13] Risk identification might require conducting surveys and even consulting all stakeholders. I might just be one of those stakeholders.</p> <p>[34:28] Identifying the risk need to do the questionnaire and ask all the stakeholders but she is just one of the stakeholders so she can't have comprehensive view for the risk.</p> <p>[34:41] However, since she is just one of the responsible parties, she might not have a comprehensive understanding, so her perspective may be biased.</p> <p>[34:54] It's not a comprehensive view of the risks, so she gives a partial one.</p>	Risk identification needs further information from various stakeholders.	Partial
3.1 (Ecosystem state and drivers of degradation and loss)	<p>[35:20] She could have done some data investigations or something since there is a conservation department. This part shouldn't be entirely blank.</p> <p>[35:32] Based on the new principles, I believe she must have made some efforts. After all, there's a department for it, right? It's a natural park, so they must maintain a certain quality of habitat to achieve some results.</p> <p>[35:44] These results allow them to sell tickets and generate services. They must have done something to achieve specific outcomes, but whether these outcomes are measurable or not, I'm not sure. So my answer is, it's not clear. She's unsure whether biodiversity is growing as expected.</p> <p>[36:27] She thinks the goal of biodiversity growth is tied to the fact that they're in the conservation department of Guandu Park, so they must be doing something. She believes they're doing something because they also need to maintain the park, ensuring people still want to visit.</p> <p>[37:00] She feels they should be doing something, but she doesn't know how to measure it.</p>	While they believe the department is likely taking action to maintain the park and its habitat quality, it is unclear whether the outcomes are measurable or if biodiversity is growing as expected. The speaker thinks efforts are being made to attract visitors, but they don't know how to assess the success of those efforts.	Partial
3.2 (Biodiversity conservation outcomes)	<p>[37:36] Regarding this part?</p> <p>[37:54] She's unsure because she hasn't tested it before. It doesn't matter. This part is biased. Okay.</p>	Still unsure	Partial
3.3 (Unintended adverse consequences)	<p>[38:07] So, 3.3, right? 3.3 is also biased. Okay, 3.3. 3.3 is also incomplete.</p>	Incomplete	Partial
3.4 (Enhancement of ecosystem integrity and connectivity in NbS strategy)	<p>[38:39] It's hard to say unless the investigation data is complete, and the premises of this data are complete. If they are complete, then the NBS (Nature-Based Solutions) plan would naturally be okay.</p> <p>[38:57] However, the premise is complete data, but I'm not sure if that premise has been achieved. If it has, the goal is to enhance ecosystem integrity and connectivity.</p> <p>[39:14] These elements might or might not be entirely defined.</p> <p>[40:45] Returning to the earlier response, I believe I've completed everything possible, so the NBS plan should be relatively acceptable.</p> <p>[41:00] But if new concepts, knowledge, or tools emerge in the future, the content or depth of this NBS plan may change.</p> <p>[42:20] Strengthening the connections within Guandu Wetlands further increases its connectivity. If we can better understand the system within Guandu,</p> <p>[42:34] the NBS plan's network relationships and solutions would naturally be more comprehensive, and the data would be clearer to them.</p>	Unsure if the data is complete. The elements of ecosystem integrity and connectivity may not be clearly defined. If new concepts or knowledge are introduced, the NbS plans will have to change. The more data acquired, the clearer the NbS network will be	Adequate
4.1 (Direct and indirect benefits and costs)	<p>[43:57] What she knows is one source of income is ticket sales. Another is sponsorships from companies.</p> <p>[44:10] For example, HSBC—I know they sponsored it before. So, they have both direct and indirect income, which naturally produces certain effects.</p> <p>[44:25] These funds are used for specific activities, which in turn produce certain results.</p> <p>[44:36] The funding source and economic feasibility balance depend on finding these financial supports. Since they're an NGO,</p> <p>[44:49] they likely don't aim for large profits. So, what she knows is ticket revenue and corporate sponsorships.</p> <p>[45:11] Banks, yes, banks, right. So, they work to find funding for this work.</p>	Funding sources for Guandu include ticket sales and corporate sponsorships, such as from HSBC. The park may seek public funding through	Partial

	<p>[45:24] Okay. Hmm, you didn't mention any government or municipal funding.</p> <p>[45:36] I don't know if they work with the municipal government. Is there a fixed annual budget from the city government? Possibly, but typically public-private projects don't always include public funding.</p> <p>[45:52] However, they could apply for grants related to environmental education or something similar. She doesn't know if the city government provides annual funding. They might seek public grants for specific projects.</p> <p>[46:36] I'm unclear about this—it depends on their business plan. But they can apply for public funding based on the services they provide.</p> <p>[46:49] Of course, these services must align with public welfare or certain policy requirements.</p> <p>[47:04] For instance, they could organize a seminar on bird conservation and apply for funding from the forestry department.</p> <p>[47:17] This way, things come together, and funding sources diversify. As I mentioned, schools could also contribute.</p> <p>[47:55] This aligns with government objectives related to policies or public interest.</p> <p>[48:07] They might obtain funding for policies related to public welfare or hold conferences on wildlife conservation.</p> <p>[48:22] They might receive funding from the government. So, as for the results, I know these potential funding sources, but I'm unsure if they're comprehensive.</p> <p>[49:56] Because nature is in a state of dynamic balance. It may have many functions or benefits that cannot be fully quantified now.</p> <p>[50:11] There are tangible and intangible benefits to nature, which might surpass artificial solutions. However, I don't know if all these benefits can be calculated.</p>	<p>grants for environmental education or related projects; it's unclear whether the city government provides annual funding. Public-private projects may not always include public funds, but specific grants can be applied for based on services provided. These services should align with public welfare or policy objectives. The speaker also notes the challenges in quantifying both tangible and intangible benefits of nature, suggesting that these benefits may surpass artificial solutions, though not all can be fully calculated.</p>	
4.2 (Cost-effectiveness study)	<p>[48:01 – 49:02] So I mentioned the environmental education they can do some work and let this what the government also want to do it is about the policies and public benefit and maybe get some money by doing those stuff from the government. Or maybe holding conference about wild bird conservation and maybe get some money from the forestry bureau... This is what she know and she doesn't know if its complete or not</p> <p>[49:33] She (Ms. Wang) mentioned this earlier like the environmental education on holding the conference to get the money from the government...</p>	<p>Holding environmental conferences can help in contributing to revenue for Guandu Nature Park.</p>	Adequate
4.3 (Alternative solutions to test effectiveness)	<p>[49:03] ... Alright, 4.3? Naturally, if it's based on nature, the outcomes would be better. Why?</p> <p>[49:56] Because nature is in a state of dynamic balance. It may have many functions or benefits that cannot be fully quantified now.</p> <p>[50:11] There are tangible and intangible benefits to nature, which might surpass artificial solutions. However, I don't know if all these benefits can be calculated.</p> <p>[50:27] So, regarding cost-benefit identification or evaluation, I can't fully assess it. Therefore, I leave it up to her. She believes natural solutions are better because they may have benefits not yet apparent.</p> <p>[50:53] She considers natural solutions superior because nature might have hidden benefits we haven't recognized yet. For 4.3, she gave this partial response. The natural one is better than the artificial one, natural one has benefits that can't see now. So think it is better but because she can't evaluate how much benefit and who got the benefit so she gave it partial.</p>	<p>Natural solutions are deemed better as there are both tangible and intangible benefits.</p>	Partial
4.4 (Resourcing options)	<p>[51:27] Regarding the 4.4 score, you have to consider that this is public land, so naturally, it needs to account for profits and losses.</p> <p>[51:44] Records must ensure wealth creation, so whether it's for the market, public interest, or related commitments, it must comply with regulations. This is because it's under the jurisdiction of the municipal government, and they are responsible for any issues. Since it's tied to finances, compliance with the law is necessary.</p> <p>[52:39] Otherwise, there's a risk of people getting into trouble. Since it involves money, everything must be lawful.</p> <p>[53:02] Yes, they must follow the law. Otherwise, there could be legal consequences.</p>	<p>Current and potential funding sources include government subsidies, corporate partnerships, and community</p>	Adequate

	<p>[53:15] Offering recommendations on resource selection: what suggestions do you have to enhance their financial capacity to generate benefits from Nature-Based Solutions (NbS)? Aside from the projects involving the government, do you have additional advice?</p> <p>[53:53] I know that over the past 20 years, they may have worked with the municipal or central government to obtain subsidies, as mentioned earlier.</p> <p>[54:06] They've also likely been working hard to collaborate with HSBC. HSBC might have initiated certain cooperative activities, and through organizing those activities, they acted somewhat in a CSR (Corporate Social Responsibility) role.</p> <p>[54:23] Moving forward, beyond this, TNFD or other contributions from companies might also be relevant. They could explore partnerships based on their own biodiversity outcomes or related achievements at the site.</p> <p>[54:37] Such partnerships might not necessarily involve direct funding. For instance, converting labor into a monetary equivalent could also count.</p> <p>[55:03] For example, as we mentioned earlier, collaborating with schools or student volunteers can serve as free labor. Likewise, if they collaborate with companies, employees might assist in monitoring or park maintenance. This could reduce some costs.</p> <p>[55:26] However, such arrangements need to be well-designed to avoid compromising environmental quality. The question was about finding additional funding methods.</p> <p>[55:44] One approach could be through previously mentioned government projects to generate income.</p> <p>[55:56] Another could involve working with companies to organize activities, similar to CSR.</p> <p>[56:10] For instance, CSR initiatives could involve TNFD-related projects. Other companies might also show interest in working on TNFD initiatives. This collaboration might not only involve money but also human resources, like waste collection by volunteers or students, as previously mentioned.</p> <p>[56:48] Students from schools could assist in park activities. Perhaps deeper exploration of CSR and TNFD relationships could help.</p> <p>[57:07] Additionally, if data about the site is sufficiently detailed, it could form the basis of an NbS proposal for securing some budget from organizations like IUCN.</p> <p>[57:21] This could enable international collaborations.</p> <p>[57:43] Given its globally representative position, if financial resources are crucial, perhaps the site could be rented for advertisements, like wedding or beverage ads, or as a scenic backdrop.</p> <p>[58:16] Photoshoots for weddings or advertisements in the park could generate additional income.</p> <p>[58:47] Returning to CSR and TNFD, previously, HSBC's contributions seemed to involve funding environmental improvements.</p> <p>[58:59] For HSBC, this was seen as a way to contribute to the environment.</p> <p>[59:12] While this approach aligns with CSR, if TNFD requires annual reports addressing biodiversity, then with better NbS preparedness, more collaborations may follow, not just with HSBC but with others.</p> <p>[59:35] Initially, CSR-focused actions took precedence, but with TNFD, companies might also be compelled to collaborate.</p> <p>[59:49] CSR previously involved companies like HSBC donating funds for park work.</p> <p>[1:00:10] TNFD, however, links such actions to biodiversity, potentially involving other companies.</p> <p>[1:00:26] CSR is about funding environmental improvements, while TNFD relates more to biodiversity requirements.</p> <p>[1:00:49] Before starting such initiatives, forming a working group would facilitate communication and provide a platform for data transparency.</p>	<p>involvement. Historically, collaboration with companies like HSBC has played a significant role, with corporate social responsibility (CSR) initiatives funding environmental improvements. Moving forward, aligning with the Taskforce on Nature-related Financial Disclosures (TNFD) could attract more corporate partnerships, focusing on biodiversity outcomes. To diversify funding, the site could leverage community contributions, such as labor from students or company employees, to reduce costs. Other revenue-generating ideas include renting the site for photoshoots, advertisements, or events. Additionally, detailed site data could support proposals to organizations like the IUCN, enabling international collaborations. However, all initiatives should be carefully designed to maintain environmental quality and align with public welfare objectives.</p>	
5.1 (Grievance resolution mechanism)	<p>[1:02:14] By adhering to principles like legality, transparency, accessibility, predictability, and encouraging participation, a positive and open atmosphere can foster successful teamwork.</p> <p>[1:03:43] Establishing a working team before implementation could help address key issues and ensure fair communication.</p>	It is suggested that establishing a working group comprising	Adequate

	<p>[1:04:17] A working group allows for collective consensus on decisions, avoiding fragmented communication. Meetings or consensus-building processes could enhance decision-making.</p> <p>[1:05:36] The group could ensure inclusivity of all stakeholders while prioritizing key interests. Using technologies like video conferencing or online tools could keep less direct stakeholders informed.</p> <p>[1:06:42] For primary stakeholders, regular meetings can establish consensus, with follow-ups to adjust conclusions if needed. Financial stakeholders' opinions should be integrated into the process.</p> <p>[1:07:19] For less critical financial stakeholders, platforms like Google Meet could ensure participation without heavy involvement in every meeting.</p> <p>[1:07:27] The most important stakeholders are already involved in his team so the most important stakeholders opinion will already be inside and not directly related stakeholders can use line or google meet to make them involved. We have several meetings, the first meeting the main stakeholder's attendance, and they discuss something and between the next meeting there's a period of time. At that time the other stakeholders. If they have some opinions, they can say it at that time and the next meeting they can discuss that together and come to an agreement.</p>	<p>various stakeholders can aid in improving communication and transparency between stakeholders and the general public. Opinions from these stakeholders should be integrated into policies to avoid exclusion.</p>	
5.2 (Indigenous people involvement)	NA	NA (initially stakeholder put adequate but later clarified that there is no indigenous people in Guandu Wetlands)	Insufficient
5.3 (Stakeholders identification and involvement)	<p>[1:08:49] ...I've been identified and involved in all processes of the NBS intervention.</p> <p>[1:09:07] I think there's a part here where we also have to draw a map. (refer to supplementary figure 2)</p> <p>[1:10:25] This refers to the conservation authority, or perhaps the Minister of the Interior, and then scholars and experts.</p> <p>[1:10:39] It might be the habitat manager or other companies.</p> <p>[1:10:53] Other companies, or maybe the financial unit, an agency, or a bank.</p> <p>[1:11:12] Among these people, we then expand. This is for students and their schools. This represents regional leaders.</p> <p>[1:12:24] The professors, the researchers—they are mostly in the middle. But for the conservation part maybe they are the most not aggressive but they have strong opinions.</p> <p>[1:13:54] The city government and the corporate companies are close (partial) and the local leader same direction or totally opposite direction. If this land is cheap ... maybe the land price is higher. Maybe the local leader maybe say "I don't want to continue." I don't know in the future if the land prices will go up or not.</p> <p>[1:14:26] This is a hypothetical issue—whether the price of the land will rise or not. It's a hypothetical issue. This may happen, or it might not. Then lastly, this is about schools. So, I assume they have positive relationships.</p> <p>[1:14:49] I guess they have positive relationships. In all relationships, there must be some form of exchange.</p> <p>[1:15:04] So this maybe might or might not happen.</p> <p>[1:15:01] In society, there's always some exchange—resource exchange, issue interests, money, or other things.</p> <p>[1:15:27] All transactions involve exchanging something. Oh, common interests. Yes, good. Thank you, I'll keep this.</p> <p>[1:15:39] so they all have some exchanges with the park and maybe it's resource and benefits or the money and all kinds of resources exchange or something.</p>	<p>Refer to the supplementary figure 2. There are potential changes in local leadership or authorities. For instance, if the price of land appreciates in the future and conservation issues are not a priority for future governments, the land might be sold to private corporations.</p>	Adequate
5.4 (Stakeholders involvement in decision making)	[1:16:46] She's not, she does not understand well how they work so she gave it partial	NA	Partial
5.5 (Decision-making beyond jurisdictional borders)	<p>[1:17:24] So she thinks it is outside, because she thinks it outside the range of the wetlands so the stakeholder should have the agreement of what they are going to do or the things can't be done.</p> <p>[1:17:33] Anyway, the topic says that this kind of joint decision-making mechanism should be established. What kind of mechanism constitutes joint decision-making?</p> <p>[1:17:45] It could be that the leader of the working group says "OK," and then everyone else just agrees by applause. Or, does it need to go through another round to count as agreement? Actually, this mechanism is something they discuss internally. We won't talk about the internal mechanism here.</p>	<p>There are sufficient mechanisms in place for decision-making. However, greater details are still needed</p>	Adequate

	[1:18:39] She doesn't know what is the mechanism of making the agreement but there should be for all the stakeholders		
6.1 (Costs and benefits of associated trade-offs)	<p>[1:19:09] So interviewee 3 thinks that all the working team, while discussing, are in the process of trade-offs, where they discuss what they want to lose and what they want to gain, and she believes this is a decision-making process.</p> <p>[1:19:31] So she thinks all the working team all discussing, that is the process of the trade-off, discussing what they want to lose what they want to gain. She thinks that's the process deciding the trade-off</p> <p>[1:19:39] And then after we reach a consensus, when we communicate with the outside, the feedback I get will also be returned to the team to balance acceptance or rejection.</p> <p>[1:20:19] When there working team they are discussing: I have my consideration, you have yours, she has hers and when we discuss we are doing our trades offs (inside) and we have trade off inside and when we have disagreement, we discuss with the outside and maybe outside have some opinions too and we are doing trade off with the outside.</p> <p>[1:20:44] Then it depends whether we each stick to our own position or continue discussing until we reach something we call a "reluctantly acceptable" solution.</p> <p>[1:20:19] When there working team they are discussing: I have my consideration, you have yours, she has hers and when we discuss we are doing our trades offs (inside) and we have trade off inside and when we have disagreement, we discuss with the outside and maybe outside have some opinions too and we are doing trade off with the outside.</p> <p>[1:20:56] So if there are disagreements, one option is to keep discussing until everyone agrees, or maybe find a solution that I'm not happy with but I can accept. However, the premise is that this decision or issue makes me unhappy, but I can embrace it. Then, at some point, sometimes time will provide an answer. For non-urgent issues, maybe just leave it and circle back later.</p> <p>[1:21:12] If there are disagreements one is to keep discuss until everyone agree. Or find a solutions that I am not happy about that but I can accept it.</p> <p>[1:21:43] And wait for time to give us the answer...</p> <p>[1:21:56] For those that are not that emergency maybe just let it put it there anre just wait and let time take us to the answer. So would you give it a good score. Adequate...</p>	From the discussion of the working team, communication must be open with the various stakeholders, and these concerns must be brought up. During the discussion, there might be two possible outcomes: a mutual agreement or a decision where some stakeholders may remain unsatisfied but can compromise on the decision.	Adequate
6.2 (Rights, usage of, and access to land and resources)	<p>[1:21:56] Okay, 6.2, respecting is fine.</p> <p>[1:22:09] ... OK, so this may be a visitor. OK, a visitor is both a Guandu resident and a non-Guandu resident, or how would you define the visitor?</p> <p>[1:22:29] Does it include residents near Guandu, or not? Residents here, residents here, so this is a non-resident. SO the non-resident and maybe they have overlap because of overlap.</p> <p>[1:22:47] But in reality, whether they have some connection, there are some, some that don't have residences, perhaps they will have some mutual relationships.</p> <p>[1:22:59] Because schools and tourists may have some mutual interactions, I understand. Like this educational institution, it's used for rest, even if they are not from Taipei or from Guandu.</p>	There is respect between various stakeholders and visitors.	Adequate
6.3 (Periodic review of safeguards)	[1:23:13] Maybe, maybe. OK, so 6.3, I think it should be, but I'm not sure if they are checking whether it's optional or not, so partial.	Unfamiliar with the checking process.	Partial
7.1 (NbS strategy)	[1:23:36] OK, so it's partial for that okay so 7. OK, 7.1. The same it seems they should do that but not sure if they have it. 7.2 is an evaluation plan the same, it's all the same I don't know if I have to make the decision. I don't if Guandu have monitoring or evaluation program and then use NbS LCA. But I think if Guandu want to have NbS project then they should do that.	Not much is known about this part.	Partial
7.2 (Monitoring and evaluation plan)	[1:23:36] OK, so it's partial for that okay so 7. OK, 7.1. The same it seems they should do that but not sure if they have it. 7.2 is an evaluation plan the same, it's all the same I don't know if I have to make the decision. I don't if Guandu have monitoring or evaluation program and then use NbS LCA. But I think if Guandu want to have NbS project then they should do that.	Similarly, if Guandu has evaluation it is recommended for them to do monitoring.	Partial
7.3 (Framework for adaptive management)	(Similar to previous)	NA	Adequate
8.1 (Information sharing for transformative change)	(Similar to previous)	NA	Partial

8.2 (Policy, regulations, and laws)	[1:26:29] I don't know if they already doing it very well or not so it is partial.	NA	Partial
8.3 (National and global targets)	[1:26:48] No need for the last part no indigenous people	NA	Insufficient

Supplementary Table 4. Results from Interviewee 4 (Taipei City Government Hydrology Department), showing the scores for each indicator.

Criterion	Recording	Rationale	Score
1.1 (Identification and prioritization of societal challenges)	<p>[00:33] I think we can say that Guandu, as an area, is impacted because it is a natural ecological zone and a nationally designated protected area.</p> <p>[00:46] Therefore, it must be afforded a significant level of protection. However, a considerable amount of the land within this area is privately owned. The private landowners strongly demand that their land be expropriated or developed.</p> <p>[00:58] For example, a nearby scenic park in the area was ultimately developed into a park under high-level conservation regulations.</p> <p>[01:09] However, due to financial and economic considerations by the government, there is currently no urgency to develop the land. Consequently, landowners are demanding that their land be returned or that the land-use designation be changed to enable other types of development.</p> <p>[01:20] This area faces pressure from landowners demanding land reclamation and development. They want to use their land, but because it is within a protected area, construction is prohibited.</p> <p>[02:05] Therefore, construction is prohibited in such areas. Construction is prohibited repeatedly and strictly. This is the challenge faced by the Guandu Wetlands.</p> <p>[02:33] Would you say this challenge has been prioritized or not? Because if it is, it could be seen as significant. Otherwise, it might be considered marginal—essentially asking if this social challenge has been given priority.</p> <p>[02:57] Of course not. From the government's perspective, we naturally want to protect this area. However, these residents or landowners exert significant political pressure on the government.</p> <p>[03:10] They demand that the government adjust its conservation goals, including requesting development. While there is certainly pressure, the government still aims to resist.</p> <p>[03:23] We strive to maintain the current level of conservation, even though the intensity of pressure is not very high. There is pressure, but it has not yet become overwhelming.</p> <p>[03:41] Yes, there is always pressure, but it is not extreme. So, the pressure landowners exert on the government is not yet very high.</p> <p>[03:57] The government's goal is to protect this area, and it is responsible for this. Does this answer your question?</p> <p>[06:07] Because they are trying to protect this piece of land. Because they are not trying to protect this piece of land. Because they are not trying to protect this piece of land... (repeated multiple times).</p> <p>[07:21] Could it be partially triggered from the perspective of those ecologists or others who want to protect private land? But are they stakeholders or beneficiaries? Right, I think they could be considered beneficiaries in this case.</p> <p>[07:34] From the perspective of protecting private land, after all, this seems to align more with what we generally see in society unless you say, for example, that the beneficiaries of this wetland are actually everyone who benefits.</p> <p>[07:47] Because wetlands have their environmental functions. That's why I'm asking who the beneficiaries are. This is very important because there is a symmetry here.</p> <p>[07:59] In other words, if you are a beneficiary, then naturally, the beneficiaries of protecting this wetland would be all citizens, everyone. So, have you considered their opinions? Actually, we are protecting this wetland.</p> <p>[08:13] So, we are looking at this issue from the perspective of those who need the wetland's functions—the perspective of the beneficiaries. But if we look from the perspective of land, it feels like we are unable to include [others] because our positions are different.</p>	<p>The main issue the Guandu Wetlands face is the intent of private landowners to reclaim land for development. However, this is not possible as the government protects the area. The conservation efforts are motivated by benefits such as flood control and are emphasized through stakeholder engagement.</p>	Strong

	<p>[08:26] So, I'm wondering if what you mentioned and what I am trying to clarify is that from the perspective of the stakeholders or beneficiaries, the most pressing social challenge needs to be prioritized. Because we belong to the stakeholders, my initial thought when reviewing this document was:</p> <p>[08:41] Should we look at it from the perspective of flood control and water management? This might bring us back to the issue of climate change and its amplified impact on Taipei's flood control.</p> <p>[08:55] Because this issue is a bit too broad. So, he is clarifying—he is trying to clarify who the right holders and beneficiaries are.</p> <p>[10:45] Sorry, let me clarify if they have been prioritized. So, if we look at it from a flood control perspective, of course, the improvements we are making now are meant to address societal demands for flood safety.</p> <p>[10:58] This is clearly something we strongly prioritize. They are considering the issue from their perspective, focusing on flood prevention.</p> <p>[11:25] Thinking about the issue from the perspective of social responsibility, they have adopted a good approach. Then we can settle on this direction; otherwise, I think it would be too scattered, and I wouldn't know how to respond. So they would use flood prevention to frame their</p>		
1.2 (Documented societal challenges)	<p>[11:50] To clearly understand and document all the relevant societal challenges—please respond to this. I think this question is valid because, regarding the expansion of mangroves here and its impact on water levels, both the Taipei City Government and the Ministry of Economic Affairs have pointed this out in their research reports.</p> <p>[12:14] These reports indicate that mangrove expansion affects water levels. So I believe this has been documented, although not sufficiently supported by hydraulic models. The second question is whether you have documented all the corresponding societal challenges.</p> <p>[12:28] The challenge in this area is, of course, flood safety. We take this issue very seriously. The impact on flood safety in the Keelung River is clear, and we have analyzed it thoroughly. So we have responded clearly to this challenge.</p> <p>[12:48] That's why we are implementing necessary measures to manage mangroves to address this flood safety challenge. If mangroves expand, they will affect river water levels.</p> <p>[13:27] Therefore, from the perspective of flood prevention, we need to prune the mangroves to maintain this function. So, he thinks that both of these issues should score quite well.</p>	<p>All societal challenges are documented, highlighting the mangrove expansion occurring in the Guandu Wetlands. The hydrological department is concerned about this and is taking necessary measures to address it.</p> <p>Documented here : https://heo.gov.taipei/News_Content.aspx?n=1FE45A3FEA3D194E&sms=72544237BBE4C5F6&s=E0098A41FD9C52A8</p>	Strong
1.3 (Identified human well-being outcomes)	(overlap with previous answer)	(Overlap with previous answer)	Strong
2.1 (Interactions between economy, society and ecosystems)	<p>[14:16] Okay, has this NbS been confirmed? The thinning operation for the mangroves was only recently approved, so we have planned and designed several sections that have been completed and are just entering the construction phase. This should be part of the work we can regularly monitor going forward to determine the effectiveness of the thinning.</p> <p>[14:27] So, the planning and design phase has been completed, and we've just entered the implementation phase. This should be part of the regular monitoring process to assess its effectiveness.</p> <p>[14:39] Whether it's sufficient or not, I don't know yet, OK. What he means is that this area is part of the river system. However, because the mangroves are overly dense and encroaching,</p> <p>[14:53] they are obstructing flood prevention efforts. So, we've undertaken some clearing and sediment dredging. Moving forward, we will conduct annual surveys of the river cross-sections</p> <p>[15:06] to monitor changes in the channel, whether it's becoming encroached or silted, ensuring that the treatments we've implemented maintain their effectiveness.</p>	<p>The mangrove removal project is regularly monitored to assess the effectiveness. The area is part of the river system and obstructs the path and surveys are done and evaluations and consultations with</p>	Strong

	<p>[15:22] To see whether it's continuously degrading—this is why we'll keep monitoring and measuring to ensure regular evaluations align with your criteria. Recently, they've only been pruning the mangroves.</p> <p>[15:52] Now they've completed the mangrove pruning plan and tested parts of the riverbanks. Moving forward, the scores would range from one to three, with strong scores being the case. That's right. Good, we're now working on the diagrams for this section.</p> <p>[17:19]During the initial stage, we consulted local ecologists and experts, as you mentioned earlier. Various departments were asked for their input,</p> <p>[17:32] which we incorporated into this approach. These two aspects can be combined to share the workload, so.</p>	various departments are important for this	
2.2 (Complementary and synergies)	<p>[17:44] I want to answer 2.1 and 2.2. So when they planned for the mangroves cutting, they asked the animal protection the Taipei animal protection and the wild bird society to see what they think about this plan to make sure the protect is alright. Any significant comments the stakeholders said?</p> <p>[18:29] They initially suggested that when implementing the work, the engineering should not be done all at once. Instead, we might narrow the scope and phase the activities annually to facilitate the work. Additionally, during the migratory bird season,</p> <p>[18:46] During the migratory bird season, we will avoid carrying out operations to prevent disturbing them. Since they are closer to the Guandu Wetland, we will not conduct any work during that period. So the suggestion they get is when they do the construction don't make it a small area and short period of time and stop the construction when the bird come. Construction is the removal</p> <p>[19:04] when they do the construction. So, their advice was to avoid large-scale work in a short period and focus on smaller areas.</p> <p>[19:18] ~ [19:58]The removal—actually, another point is about the expansion plan, which involves the entire Keelung-Tamsui River estuary, including Tamsui City. The wetland ecosystem, including bird species, operates within this larger region. Disturbances in the local Guandu area can also affect the Erchong Floodway and Wugu areas. Therefore, the entire estuary should be considered for ecological management. This means that if expansion is needed, inter-agency cooperation will be required.</p> <p>[20:09] Therefore, if there's an opportunity to expand in the future, it should encompass the entire estuary wetland area for ecological management considerations.</p> <p>[20:22] This involves multiple agencies. For example, our work scope is limited here, but the wetland area spans upstream and into New Taipei City,</p> <p>[20:49] crossing into Taipei City. Therefore, cooperation across wetlands is necessary. For example, in the winter, Guandu is not the only wetland impacted,</p> <p>[21:11] but other areas may be as well. Other wetlands should also be considered when planning to prevent indirect impacts on beaches.</p> <p>[21:29] As they rise, other overseas events should also be factored into consideration.</p> <p>[21:51] Since these birds move between different wetlands, disturbing the local habitat will likely affect the surrounding areas. For example, in New Taipei, efforts such as wetland management or restoration might have indirect impacts on nearby wetlands.</p>	Through collaboration with other stakeholders, their feedback was deemed important. Through these dialogues and conversations, it was recommended to carry out construction work on a smaller scale to avoid disturbing the wildlife within the wetlands. Since the Keelung and Tamsui areas are affected, it is important to consider this for ecological management.	Adequate
2.3 (Risk identification and management)	<p>[22:06] Activities like tree removal inadvertently attract various seedlings or other organisms to the area, which means these wetlands are interconnected and influence each other over time. If we are to consider such a project in the future, the entire estuarine wetland should be evaluated as a whole. From the perspective of flood control and sediment management, this integrated approach is essential.</p> <p>[22:28] While managing one particular wetland is necessary, the broader impacts should be collectively considered, especially since birds are highly mobile.</p> <p>[22:45] The birds will move around all the wetlands so when they are doing the removal of Guandu they will move to the other wetlands, they will go to the wetlands beside and maybe the other wetlands will have some other construction, they should consider the influence of the bird the whole part.</p> <p>[23:25] For instance, part of the wetland might fall under Taipei City and another part under New Taipei City.</p> <p>[23:36] A cross-jurisdictional platform for wetland restoration could allow for mutual collaboration, communication, and coordination between different stakeholders.</p> <p>[24:52] Overall, I'd rate it at about medium to strong alignment. Expansion efforts might face challenges such as potential stress, external influences, or unforeseen developments, which require careful evaluation.</p> <p>[25:14] Management would need to consider the policies and competing interests of Guandu. Is this question applicable, or should we refine it further?</p> <p>[25:49] Let me explain. The key is risk identification and management for this wetland, focusing on ecological monitoring and periodic channel inspections.</p> <p>[26:22] Regular ecological surveys, plant monitoring, and channel cross-section assessments are necessary to track species changes, invasive species, and sedimentation.</p>	Since the wetlands near Guandu are interconnected, they take the risk into account when carrying out construction and removal activities. For instance, when construction is done within the Guandu Wetlands, they are aware that birds may potentially fly to nearby wetlands. Similarly, when nearby wetlands also undergo the mangrove removal project, the birds will	Adequate

	<p>[26:49] Through consistent surveys, risk identification and management should become more effective. Do you think addressing risks involves ongoing environmental monitoring and actions within riverine and sandy areas?</p> <p>[27:26] Understanding changes allows risk mitigation.</p>	<p>relocate. Thus, they consider this by using mechanisms for collaboration, communication, and coordination with other stakeholders. Additionally, consistent monitoring helps in enhancing risk mitigation.</p>	
3.1 (Ecosystem state and drivers of degradation and loss)	<p>[28:15] The restoration efforts showed noticeable changes in biodiversity. The local bird enthusiasts observed recovery in the wetland. This could lead to better habitat design for species that favor this environment.</p> <p>[28:46] Both our surveys and the regular monitoring by conservation departments provide valuable insights, showcasing the outcomes of these actions.</p> <p>[29:02] After mangrove removal, gradual improvements are visible. Continued evaluation is essential to find solutions. Regular monitoring seems to work well.</p>	<p>After implementation of restoration efforts there are positive changes in biodiversity for the birds. For the mangrove removal projects there are also improvements as seen in the monitored data.</p>	Strong
3.2 (Biodiversity conservation outcomes)	<p>[29:38] For 3.2, it's similar to 3.1. The subsequent assessments will be coordinated with conservation teams, which have been conducting regular monitoring. This aligns with their selected scope.</p> <p>[30:02] The conservation department conducts its own monitoring, while natural engineering teams also perform separate evaluations. Taipei City has an ecological monitoring database. You might want to check with the conservation department whether the Guandu data is included in this database.</p> <p>[30:26] Confirm whether the data overlaps or differs. Either way, I think our actions here have been effective.</p>	<p>This is similar to previous</p>	Strong
3.3 (Unintended adverse consequences)	<p>[30:55]... For question 3.3,</p> <p>[31:08] because we are currently under construction, the monitoring data might be limited. However, stage-based monitoring and evaluation of the negative impacts on nature should be adequate.</p> <p>[31:21] It's about assessing this site for necessary actions. Therefore, it is adequate that in the future, there will be monitoring before, during, and after construction.</p> <p>[31:34] We conduct staged monitoring and assessments of any adverse environmental impacts caused by our work, so there shouldn't be any issues.</p>	<p>Current monitoring data may be limited due to ongoing construction, stage-based monitoring and evaluation of potential negative environmental impacts are being conducted.</p>	Adequate
3.4 (Enhancement of ecosystem integrity and connectivity in NbS strategy)	<p>[33:06] ... I think this time provides a chance to start systematic, regular monitoring.</p> <p>[33:19] Monitoring and understanding the changes in flora and fauna here. I think this is an opportunity because the disturbance initiates changes, which you can track.</p> <p>[33:31] Then you can understand the impact of your actions and have the chance to review and adjust for the next steps. Disturbance followed by monitoring helps review and improve the construction process.</p> <p>[33:52] Yes, that way you have the opportunity to make adjustments. Otherwise, this area, even though it remained untouched, was not being cared for. The mangrove vegetation became too dense, which actually reduced species because birds lost habitats.</p> <p>[34:06] Amphibians lost grassy areas. So even though it was undisturbed, the ecosystem degraded.</p> <p>[34:18] But now, through comprehensive pre-construction monitoring and disturbances, it provides an opportunity to track changes and adjust our actions.</p> <p>[34:31] Do you think mangrove removal is an opportunity to understand the impacts?</p>	<p>Monitoring biodiversity and disturbances to these ecosystems will help in understanding their changes. Reviewing and adjusting appropriate next steps can improve the construction process. For instance, when</p>	Adequate

	<p>[34:43] What impacts biodiversity, and what affects the survival and life of species? Previously, you could remove mosquitoes, but species' survival might decrease.</p> <p>[34:55] Moreover, species' lives could worsen.</p>	<p>mangrove vegetation increased, there was a loss of bird habitats and grassy areas.</p>	
4.1 (Direct and indirect benefits and costs)	<p>[36:05] Because, at the moment, the Guandu Wetlands don't have any management teams involved. Unlike the Guandu Nature Park, which is managed by the Wild Bird Society, there is no team conducting commercial operations here. Instead, it is supported entirely by public sector funding.</p> <p>[36:48] So this part is partial, there are no other...</p>	<p>There is a lack of management teams involved in the Guandu Wetlands; therefore, "partial" score is appropriate.</p>	Partial
4.2 (Cost-effectiveness study)	<p>[37:10] Using cost-benefit studies... including...: This part should be described as "strong." Although the nature park was delisted, it is currently within the boundaries of a designated national wetland and classified as a "core mountainous area." Therefore, development regulations have already "strongly" intervened in protecting and regulating this area.</p> <p>[38:14] So, whenever we conduct activities here, we are subject to wetland regulations. All our actions must follow a controlled process, meaning this area is under fairly strict regulation.</p> <p>[38:09] Thus, even if we conduct some interventions, they must comply with wetland regulations and undergo a controlled process.</p> <p>[38:22] It's strongly regulated here. When water companies do something in the water, they must also follow legal requirements.</p> <p>[38:36] So it is quite strong. But do they have any value-based research? Of course, we aim for nature-based solutions, not just natural construction.</p> <p>[39:03] Currently, there are no cost-effectiveness studies. It's all driven by flood control needs and site optimization, supported solely by public budgets. No considerations yet for introducing tourism or external economic support.</p> <p>[39:16] They haven't considered making the land better or bringing tourism or other aspects to generate more value.</p>	<p>There are strong regulations imposed by the government. Even though there is no cost-benefit study, the current projects focus on flood control and optimization, relying solely on public funding. Therefore, Nature-based Solutions (NbS) are chosen instead of traditional infrastructure.</p>	Strong
4.3 (Alternative solutions to test effectiveness)	<p>[40:19] ~ [41:04] This is a strong point. In the evaluation of the design plan, have external benefits been considered? Of course, they have. We must avoid impacting private landowners during this operation and minimize any effects on the river channel. Specifically, we are addressing the environmental impact of the excavated soil resulting from dredging and transportation. We plan to balance the soil within the river channel by relocating it to the other side for levee reinforcement. Essentially, we have thoroughly addressed and considered the external impact factors.</p> <p>[40:50] By balancing earthworks within the river channels and reinforcing embankments on the other side, we've largely addressed external impact considerations.</p>	<p>This is about balancing impacts of manmade engineering.</p>	Strong
4.4 (Resourcing options)	<p>[42:26] 4.4.4, considering market resources and ensuring the funding sources. Actually, there are regulations about this, but it's insufficient.</p> <p>[42:42] Because we are currently relying on government funding, right? This is insufficient because the funding all comes from the government.</p>	<p>Guandu Wetlands mainly relies on government funding</p>	Insufficient
5.1 (Grievance resolution mechanism)	<p>[43:00] So before this action, we communicated with local stakeholders who care about the land ownership of plants and animals.</p> <p>[43:13] Local residents have generally held briefing sessions and communication meetings, so we've actually incorporated their feedback into our action plan. I think this should be appropriate with the district's leaders and residents.</p>	<p>Grievances are heard by the government and it is incorporated in the plans</p>	Adequate
5.2 (Indigenous people involvement)	<p>[43:45] Some people are paying attention to the region's civilization to explain what they are doing, so 5.2, we don't need to answer 5.2 because it's not relevant to us.</p>	<p>NA</p>	Insufficient
5.3 (Stakeholders identification and involvement)	<p>[44:10] That's 5.3, so they can participate in NbS, of course, there's no problem. Stakeholders are involved in the process.</p>	<p>Stakeholders are involved in the NbS process.</p>	Strong
5.4 (Stakeholders involvement in decision making)	<p>[44:24] They can participate and supervise; there's no problem. So it's strongly in favor of addressing stakeholders' demands.</p> <p>[44:48] This is strong because they can provide feedback through many channels, and we will generally explain, respond to, or adjust based on their comments.</p>	<p>Public participation is strongly supported, allowing stakeholders</p>	Strong

	<p>[45:00] This is not a problem. There are many mechanisms to tell them what they think, and they can make adjustments or answers.</p> <p>[46:02] To communicate with stakeholders or concerned citizens. So, in the entire public participation mechanism, there is such a system, and their opinions should be effectively expressed and considered. This is not a problem.</p>	<p>to actively engage and supervise processes without issue. Multiple feedback channels enable stakeholders to share their concerns, which are addressed through explanations, responses, or adjustments. Mechanisms are in place to ensure effective communication with citizens and stakeholders, ensuring their opinions are heard and considered within the system.</p>	
<p>5.5 (Decision-making beyond jurisdictional borders)</p>	<p>[45:26] 5-5 Establish a joint decision-making mechanism? If this NbS goes beyond the jurisdiction, how can such a mechanism be established... Hmm... Because it seems that we haven't received any other feedback so far. Basically, we are following the original planned mechanism. However, if it goes beyond the scope of consensus, we will communicate with stakeholders and the public within six months. So, there will be such a mechanism in place for public participation.</p> <p>[45:46] Currently, it seems there's no feedback received, basically, we will follow the original plan, but if it goes beyond the scope of the original plan, we will hold briefings.</p> <p>[46:40] So they will so their construction at the original planned area and if they will do something outside that area, they will explain to the public how to explain to the stakeholders what they are going to do and communicate with them. So, the stakeholders have mechanism to express their thoughts.</p> <p>[47:28] This is Guandu Nature Park. We are a subordinate agency, so we work together. Our relationship with local residents is parallel, and they can communicate with us directly through the 1999 hotline.</p> <p>[48:10] ... We are its subordinate agency, so of course, we are one.</p> <p>[48:30] Our relationship with the local residents is "parallel." They can communicate with us through their representatives or directly via the 1999 hotline.</p> <p>[48:34] The relationship with the local residents is positive, they can communicate with us through local leaders or representatives.</p> <p>[48:48] Through representatives, they can directly communicate with us, even through 1999, they can contact us directly. There are many ways for communication.</p> <p>[49:10] So, they are quite important through local leaders and committees.</p> <p>[49:37] Yes, they are an NGO (the Lions Club), and they are an external civil organization. They can give us their suggestions, and that's fine.</p> <p>[50:06] It could be that there are stakeholders who are cooperating or in conflict, such as central management units responsible for accounting or wetland management, like the Water Resources Agency or the National Land Agency. It's actually quite complex because there are so many units involved here.</p> <p>[50:33] two central government agencies that are responsible for river and coastal management.</p> <p>[51:07] ... Basically, they supervise the local government, but they also ensure that things are done correctly. Maybe there's some tension, but it's not necessarily a conflict. You cooperate with them, and everyone is satisfied.</p> <p>[51:55] ... The only conflict is with landowners because their land is regulated, and they demand that you handle it...Oh, I think the 5.5 decision was Adequate.</p>	<p>Efforts to establish a shared decision-making mechanism beyond jurisdictional boundaries are being considered for future phases. Currently, feedback is minimal, and the process follows the original plan unless changes require public briefings. Any actions on the land are explained to the public and stakeholders, with commitments made by responsible parties. Leaders and institutions, such as the Guandu Nature Conservation and the Taipei City Government, operate collaboratively under a unified system, with the Water</p>	<p>Adequate</p>

		Resources Department functioning as a subordinate agency, reinforcing their integrated approach.	
6.1 (Costs and benefits of associated trade-offs)	<p>[52:26] 6-1, trade-off—who authorizes and who benefits. Basically, this is a full life-cycle process. It comes back to whether improvements are necessary in this area—whether dredging or thinning is needed, or if severely terrestrial areas require treatment. Actions are taken based on monitoring and feedback analysis, making this a continuous, iterative review process. The key trade-offs involve, first, flood control and safety. If flood safety is compromised, it must be addressed. The second consideration is whether animal habitats are deteriorating. If flood control isn't an issue, the optimization of plant and animal habitats should be evaluated based on whether the government has sufficient funding. In other words, if habitat protection is necessary for flood control purposes, then appropriate action must be taken.</p> <p>[52:39] It means how much I am willing to pay to get something, the cost versus the benefit. Who benefits and who suffers, and how to analyze the degree of impact.</p> <p>[53:11] Originally, we were considering flood control in the river. It's going smoothly, but it also helps the habitat over there, even in Taipei's natural wetlands, functioning as a mudflat.</p> <p>[53:27] So, it's essentially a full lifecycle job. For example, monitoring river channels and biota, then returning to assess whether the area needs any necessary improvements, such as clearing invasive species or making improvements if necessary. It's a continuous process of monitoring, feedback analysis, and action.</p> <p>[53:43] So, what is being weighed in this entire process? I think there are several aspects. The first is flood control safety. If it impacts flood control safety, it must be addressed. The second is whether the habitat for plants and animals is deteriorating.</p> <p>[54:28] If we believe this isn't a first priority, flood control is the first priority. If flood control is fine, then we consider whether to optimize ecological habitats for plants and animals. But we also have to weigh if the government's budget is sufficient to support it since it's not the top priority. However, if flood control requires it, then it will be prioritized, just like what we did this time.</p> <p>[55:08] I'll try to understand if there are any changes based on the new data. They will do the monitoring to do that lifecycle to see what do they do well if there are improvements, see it by the monitoring data. Their first priority is to prevent the flood, and second is the habitat of the wild life, but the first priority is the most important. And if the budget is okay, they will do the habitat thing that is not the most important thing. The removal of mangrove can increase the biodiversity but the flood preventing is the first thing they consider. (adequate)</p> <p>[55:27] Based on the monitoring data, we aim to avoid flooding as the first priority.</p> <p>[55:40] The second priority is the life of wildlife, but the first priority is definitely more important.</p> <p>[56:05] So, it's about balancing how much we are willing to invest for the benefits. But the most important issue remains flood control.</p>	Given the need to prioritize objectives due to limited financial resources, the Hydrology Department's primary focus is on flood control and safety. This ensures safety and can indirectly support biodiversity improvements. Habitat optimization and biodiversity enhancement are secondary priorities, addressed only when flood control needs are fully met and sufficient budget is available.	Adequate
6.2 (Rights, usage of, and access to land and resources)	<p>[57:16] ~[57:29] The city government, National Land Agency, Water Resources Agency, because this area is also part of the coastal region, so it is also subject to coastal regulations. You can look into that unit further. Then, there are the local residents. Another group is the landowners, as the landowners may not necessarily be local residents. Do you understand what I mean? Residents may file complaints, putting pressure on them. Then there are NGOs. Is there anyone else? ... That's about it... Oh, and there are also general public who hope to use the area for leisure and recreation; they can also be considered stakeholders. Also, there are fishermen who rely on the river for their livelihood and need to catch fish.</p> <p>[57:54] Is it the National Land Agency? Okay, and then there are local residents.</p> <p>[58:06] Another group is landowners because landowners may not be local residents, you understand what I mean? And then there are elected officials. They are also stakeholders because the public goes to them to make complaints, and they feel the pressure. Then, NGOs, and are there other groups? Local government, we work with New Taipei City.</p> <p>[58:49] Okay, that's about it. Some are residential residents, others are not.</p> <p>[59:05] They can be residential or non-residential. There are also ordinary citizens because they have demands, like using the area for leisure activities.</p> <p>[59:17] Ordinary citizens' demands for leisure activities also make them stakeholders.</p> <p>[59:31] Or, as mentioned earlier, people who rely on this river for their livelihood, like those who fish, for example, people involved in river water management.</p> <p>[1:00:09] For instance, this is river water, and this is seawater, where the sea meets the river, sometimes referred to as the river mouth.</p>	Both government and non-government agencies recognize and uphold their responsibilities. Key stakeholders include local residents who use the wetlands for leisure activities, fisherfolk who rely on the area for their livelihood, and other groups such as landowners, elected officials, NGOs, and ordinary citizens with various demands.	Strong

		Their concerns are acknowledged and addressed within the framework of collaborative governance.	
6.3 (Periodic review of safeguards)	[1:01:07] There's no issue with this.	No further comments	Strong
7.1 (NbS strategy)	<p>[1:01:25] This means that the limitations for balancing were identified through our survey analysis, and improvement plans were made accordingly.</p> <p>[1:01:41] We have some foundational profit to support this. If the analysis results show we need to address something, of course, we will allocate a budget to deal with it, just like this time.</p> <p>[1:01:53] Previously, due to legal restrictions, we couldn't handle it effectively. Later, after the Guandu Nature Park's reclassification, we started taking action.</p> <p>[1:02:05] After the reclassification of Guandu Nature Park, we began operations. Since the legal restrictions have been resolved, we will act whenever necessary, based on periodic monitoring. That's the principle.</p> <p>[1:02:17] So, they will conduct regular monitoring to ensure that the current situation remains stable and does not deteriorate.</p> <p>[1:02:46] Okay, so this is the framework of this project. This should align with the main points.</p>	The survey analysis identified limitations in balancing priorities, leading to the development of improvement plans. With foundational funding, actions are taken based on analysis results and periodic monitoring. Previously, legal restrictions hindered effective management, but after the reclassification of Guandu Nature Park, operations began to address issues as needed. Regular monitoring ensures stability and prevents deterioration, forming the core framework of this project.	Adequate
7.2 (Monitoring and evaluation plan)	<p>[1:03:08] How to adapt to changes and transformations in various ecosystems—this brings us back to the importance of understanding fundamental changes. Yes, the same principle applies because ecosystems have classifications.</p> <p>[1:03:26] If an ecosystem must face uncertainties brought about by the passage of time, any solution must be determined through monitoring.</p> <p>[1:03:38] By observing the growth or decline of species or plants, we decide on necessary adjustments. Yes, that should be the case. So, they also use monitoring data to know the current situation and adjust their actions accordingly.</p>	Monitoring data is adequate for formulating adjustments and understanding the current state of the ecosystem.	Adequate
7.3 (Framework for adaptive management)	<p>[1:04:08] Like a clip of a book—this again emphasizes the life cycle process.</p> <p>[1:04:20] Life cycle means implementing a project or an action, then monitoring to see if it achieves the expected results.</p> <p>[1:04:34] If not, we adjust our actions and monitor again. This is what I just mentioned. So, we actually have specialized contracts for ecological monitoring, which might involve conducting species surveys each season annually.</p> <p>[1:04:53] In the future, after the project improvements, we may integrate these surveys into ongoing operations to observe changes in species and the impact of these improvements on their habitats.</p>	The project follows a life cycle process involving implementation, monitoring, and adjustment to achieve desired results.	Adequate

	<p>[1:05:06] This will certainly be done, as we mentioned, to operate within the life cycle framework, such as monitoring biodiversity and bio-economy impacts.</p> <p>[1:05:29] And these survey data will definitely involve experts or relevant NGOs who have been conducting long-term ecological observations.</p>	<p>Specialized ecological monitoring contracts ensure seasonal species surveys, with plans to integrate these into ongoing operations after project improvements. This approach monitors biodiversity and bio-economy impacts, relying on long-term data from experts and NGOs conducting ecological observations.</p>	
8.1 (Information sharing for transformative change)	<p>[1:05:41] Local NGOs will participate in discussions to analyze monitoring data, propose suggestions, and determine our improvement plans. That’s how it should work.</p> <p>[1:05:53] During monitoring, they will involve professionals to discuss the data, express their observations, and establish an appropriate iterative learning framework.</p> <p>[1:06:41] Enhanced learning—of course, this is appropriate. We also have such initiatives on Shezi Island.</p> <p>[1:07:34] Across the river, we are also conducting environmental education. There is an artificial wetland there, and environmental education includes educating the public about these aspects, ensuring the information is effectively disseminated.</p> <p>[1:07:50] So, they also explain the details of the project buildings on the website.</p> <p>[1:08:07] These details are publicly accessible, and they are also making changes.</p>	<p>The project emphasizes collaboration with local NGOs and professionals to analyze monitoring data, provide suggestions, and develop improvement plans within an iterative learning framework. Environmental education initiatives are being conducted, including on Shezi Island, focusing on public awareness and understanding of artificial wetlands and project details. Information about the projects is made accessible online, ensuring transparency and continuous updates.</p>	Adequate
8.2 (Policy, regulations, and laws)	<p>[1:08:44] Guandu systems comply with laws and policies. There’s no issue with this.</p>	NA	Strong
8.3 (National and global targets)	NA	NA	Insufficient

Supplementary Table 5. Results from Interviewee 5 (Wild Bird Society), showing the scores for each indicator.

Criterion	Recording	Rationale	Score
1.1 (Identification and prioritization of societal challenges)	<p>[5:11] Guandu aspect should be addressed</p> <p>[6:38] the challenges can be handled. So Guandu is okay, but they are not particularly focused on human health</p> <p>[10:31] Similarly, NGOs promote their initiatives through various activities, and relevant information should also be preserved. They are all working on addressing social challenges.</p> <p>[29:22] For example, the reason it's so important is that Guandu has successfully addressed the seven issues in the first question because these three types of organizations are involved.</p>	<p>Societal challenges in Guandu Wetlands are handled and addressed but not focused on human health. Non-government organizations (NGOs) promote their initiatives through various activities, and relevant information is kept. The reason why Guandu Wetlands are successful is because multi-stakeholders are involved.</p>	Adequate
1.2 (Documented societal challenges)	<p>[09:33] Regarding the Guandu Wetlands, if we look at it from the perspective of human organizations in Taiwan, including government agencies, NGOs, and businesses</p> <p>[09:46] they all have corresponding plans and work within this space to address the seven social challenges mentioned earlier.</p> <p>they all have corresponding plans and work within this space to address the seven social challenges mentioned earlier</p> <p>[10:00] So, my judgment is that there are corresponding evidence or records, as the government—meaning its regulations or legal requirements—ensures that the work is documented. Businesses that participate in helping this environment also have plans in place that are documented.</p>	<p>There is corresponding evidence or records from various stakeholders such as the government which means it is regulated and legal and ensures that work is documented. While businesses that participate also have plans that are documented.</p>	Strong
1.3 (Identified human well-being outcomes)	<p>[08:11] Based on my experience, the human health aspect is more related to not purely medical behavior but more like a condition where humans can return to a natural environment to find relief.</p> <p>[08:22] It's like a space where humans can relax, reducing psychological stress, work stress, and life stress. So, he thinks that the human health part isn't just medical but also involves humans finding relaxation and stress relief in nature.</p> <p>[12:26] I think it's inadequate. I think it's inadequate because, among the three colleagues present, you know about NBS, right? You know about NBS.</p> <p>[12:38] Out of the three of us, only two are aware, and although we are already involved in this field, we still think it's inadequate. Taiwan, whether from the government or academic institutions, is not doing enough to promote NBS.</p> <p>[13:46] Why do I think it's inadequate? I would say it comes from two perspectives. The first is from the perspective of those of us who are directly involved in the field.</p> <p>[13:58] Speaking from my experience at the Changhua Bird Society, which is an NGO, we are directly engaged at the frontline in this field. Even among those of us on the frontline or within the organizations we work with</p>	<p>Human health doesn't only cover medicine but also the human condition, where humans can return to a natural environment. Additionally, since awareness of NbS is not high, their outcomes aren't prioritized</p>	Insufficient
2.1 (Interactions between	<p>[17:47] ... from a positive perspective, as mentioned earlier, the Guandu Wetlands, along with all wetlands conservation work currently being done in Taiwan,</p>	<p>There are different types of</p>	Strong

economy, society and ecosystems)	<p>[18:02] have already started to involve the government, NGOs, and businesses. Different types of organizations are promoting NBS by integrating the issues they are concerned about</p> <p>[18:18] into their projects, such as in government policies and regulations, and in NGO promotional activities.</p> <p>Or, the content of the plans executed by companies could incorporate the aspects considered by NBS. I think this would be a way to more quickly and effectively promote these matters. This is in line with the response to point one. Moving on to the second part. Of course, for the second part, let me first have you address the previous part, then I'll talk about the second part. They believe that the concept of NBS, which they are working on, is an effective way to promote NBS. Thank you, that's a good insight. Actually, as mentioned earlier, the design of everything should be based on scale.</p> <p>[19:48] Regarding interdepartmental considerations, as I mentioned earlier, I think it is important to first consider the entire social structure, which can be divided into three main types: government, business, and NGOs (non-governmental organizations). Each has its own organizational operation model.</p> <p>[20:12] By understanding these models, we can consider how to align with the economic aspect mentioned in the topic. Honestly, the entity most directly reflecting the economy should be the businesses, as their goal is to make money, which is a fundamental condition for stimulating the economy. The social aspect often falls back on the entire government and its policies and legal enforcement.</p> <p>[20:39] For instance, in Taiwan, although there are many traffic laws, accidents still happen because of poor enforcement. The impact on society is clear: even if laws are established, if they are not enforced, societal issues will persist.</p> <p>[20:55] As for the concept of ecosystems, I tend to believe that the general public has little understanding of it. This knowledge often falls back to academia, which then disseminates it through NGOs and NPOs (non-profit organizations).</p> <p>[21:10] This process involves cooperation and collaboration between different departments to address the issues mentioned, such as long-term monitoring or the follow-up actions of conservation work.</p> <p>[25:06] If you want to emphasize the economy, businesses should be the most efficient. If you want to impact society, government policy and law enforcement are the most important.</p> <p>[25:54] So this is the economic part for the companies, the economic part for the government, and the social part. Conducting research and promoting this knowledge to the public.</p> <p>[26:27] But these three parts also relate to each other, although these three are the most strongly connected.</p>	organizations promoting NbS. Governments, NGOs, and corporations have found ways to integrate NbS into their policies, regulations, and activities. Each stakeholder has its own operations; therefore, by understanding their operations, it will be easier to align various topics and aspects. The three components—social, economic, and ecosystem—are strongly connected.	
2.2 (Complementary and synergies)	(same to 2.1 overlap)	(Same to 2.1 overlap)	Strong
2.3 (Risk identification and management)	<p>[33:31] It could be related to the environment or the economy. In answering this question, I think it connects back to the issues in 2.1 and 2.2. For instance, regarding how to scale up the Guandu project, sharing case studies with other areas in Taiwan is very important and should be actively pursued. This helps others understand how conservation work is done at Guandu. Guandu is currently receiving high attention from government organizations, NGOs, and businesses. This case can be shared nationwide, not to be replicated but as a reference. This is another strategy for scaling up.</p> <p>[34:49] The second point is about coordinating with different sectors, which is necessary. For example, in Taiwan, Guandu is associated with wetland conservation, and people living in the Guandu area are part of an administrative district in Taipei. The conservation activities at Guandu, including climate change, disaster risks, and environmental sustainability, are relevant to the ESG and sustainable development initiatives promoted by businesses.</p> <p>[35:50] Therefore, there is a need for more involvement from different sectors and collaboration. Returning to 2.3, understanding why this is important involves recognizing the need for various units to participate. For instance, if the government does not educate the public about invasive species, people might make incorrect choices, such as planting invasive species instead of native ones. If businesses are involved in wetland management, their support might put pressure on conservation staff if resources and responsibilities are not balanced.</p> <p>[37:54] He (Mr. Lee) thinks how do Guandu upscaling one's method is case sharing because Guandu has really well the three sectors—government, NGO, and businesses—can work well together so he thinks this case is good and can share to other wetlands and places in Taiwan and to tell how Guandu done this job and he think this one of the method to upscale to make it regional to national. Second part, he mentioned that the corporation between different part is necessary and important. When you think of Guandu you think of Wetland. For the residence of Taipei City, this part of life, the company is doing the ESG and the working part. And then go to 2.3 He thinks the different parts working together important.</p> <p>[39:28] For example, if the government doesn't promote the invasive species is not good for the ecosystem, the public might end up planting invasive species in Guandu Wetland.</p>	The Guandu Wetlands serve as a valuable case study where various stakeholders effectively implement their responsibilities. While it cannot be directly replicated, it can be shared as a reference for others at a national scale. One specific example of risk management is the government educating the public about invasive species that harm ecosystems.	Strong

	<p>[40:55] Let me give a simpler example. For instance, if a company wants to help with Guandu Wetland, they may want to invest their funds for conservation. They will need to spend money and discuss with those responsible for wetland conservation. But if their initial objectives are different, it can be very time-consuming and may not lead to good results.</p> <p>[41:27] In managing the wetland, it might turn out that the company becomes more of a disturbance rather than a positive help. If the company wants to invest in wetland protection, it includes financial aspects, and if people use the wetland inappropriately, the company might become a hindrance to managing wetland impacts. These are risks to be aware of.</p>		
3.1 (Ecosystem state and drivers of degradation and loss)	<p>[44:19] For section 3.1, regarding Guandu, I think it should be partial. Although responses and subsequent planning should be based on evidence, evidence takes time to build, so we cannot always wait for evidence to act. For Guandu Wetland, baseline data has been established for a long time, showing clear trends.</p> <p>[45:03] I know I was involved in Guandu Wetland surveys during my university days, which was at least 20 years ago. So now that baseline data is stable, I believe the importance of evidence in the Guandu case is only partial. The evidence has been established over decades.</p> <p>[45:35] To make subsequent responses and improvements, evidence should be only part of the reason. More importantly, achieving biodiversity goals for the future is crucial. The foundational data was obtained 20 years ago.</p> <p>[46:21] They have already obtained this data and checked it during university. He believes that this aspect of Guandu might be skewed because they already have a lot of evidence and baseline data.</p> <p>[46:47] They will consider what they are going to do based on what they hope for in the future, rather than just on existing evidence.</p> <p>[47:27] future planning is mainly based on future goals rather than just past evidence.</p> <p>[48:08] Evidence now should be considered only part of the overall conditions rather than the whole picture. The emphasis should be less on continually confirming evidence and more on setting future goals for Guandu Wetland's biodiversity. For instance, specific goals like what types of trees to plant, the coverage rate, quantity, and time frame are future objectives and not just evidence. Deciding these aspects is now the most important for Guandu Wetland. For example, it is feasible to plant mangroves in the wetland environment, but planting willows or similar species is not suitable for wetlands. The evidence has already been established over the past 20 to 30 years, so there's no need to continually verify past evidence. Instead, the focus should be on setting clear future goals.</p>	Evidence and baseline data has been collected since the past 20 years. However, utilizing the baseline data should be highlighted and given importance.	Partial
3.2 (Biodiversity conservation outcomes)	<p>[52:27] This includes aspects like tourism, employment, and carbon storage. For tourism, Guandu Wetland has a Guandu Nature Park. From the past decade of managing the park, we can confirm the number of visitors and the controllability of environmental impact, meaning the visitor volume is manageable regarding environmental impact. Similarly, managing the Guandu Nature Park directly creates job opportunities in the conservation field. Communities around Guandu Wetland benefit from stable employment in various sectors, including dining and other industries.</p> <p>[53:23] Regarding carbon storage, although I'm not very familiar with it, mangroves have carbon sequestration capabilities. By analyzing data from the Guandu Wetland plant community and sediment, and using long-term biodiversity surveys from the past 20 to 30 years, we can infer the carbon storage functions. These aspects have shown stable growth.</p> <p>[55:40] For part B, concerning nutrient dynamics, species autonomy, and key species' spatial distribution, this follows the same principle as section 3.1. The past 20 to 30 years of basic surveys can convert this information into spatial data for assessment. The biodiversity has indeed increased, and the information can be quantified because it is based on accumulated natural environment data.</p> <p>[58:46] The reason I selected "Adequate" instead of "strong" is that Guandu Nature Park, beyond scientific methods, also preserves conditions that allow natural species to return to the space. This means the naturalness is relatively high, and it's not about deliberately assigning it but protecting the space so species can continue to thrive.</p> <p>[59:42] This includes tracking species such as crabs, mudskippers, polychaete worms, and large aquatic organisms. Tracking these species and water birds is essential.</p> <p>So, most of the animals residing there should be compared with baseline data trends.</p>	Guandu Wetland's biodiversity has been beneficial to tourism, creating jobs for locals. There is also an availability of long-term data from the past that has shown growth, and it is evident that biodiversity has increased. Furthermore, the protection of this important ecosystem continues and thrives.	Adequate
3.3 (Unintended adverse consequences)	<p>[1:00:24] External threats—I don't consider them as external threats from my standpoint. Natural disasters, climate change, and typhoons are part of the natural environment. I wouldn't classify them as threats to important species. External threats are more related to human-induced changes to the environment. For Guandu Wetland, human impacts are more strictly regulated, so the pressure is relatively lower.</p> <p>[1:01:05] Given Taipei City's population pressure, there are still many development risks. He doesn't view climate change as a concern since it's part of natural processes...</p> <p>[1:01:46] The fear in Guandu is relatively small because it's already a park.</p> <p>[1:02:00] However, there is still some pressure because it is in a Taipei city, and development pressure remains.</p>	The main external threat identified was development. Despite pressure from developers, the law does not allow such development to happen in Guandu	Strong

	<p>[1:06:39] Guandu Wetland is managed by the Taipei Bird Society, and the Taipei City Government provides regulatory oversight.</p> <p>[1:06:53] So, under these conditions, there is a lot of regularly produced data. For example, the long-term data from the 20 to 30 years of surveys become standardized operational procedures.</p> <p>[1:07:08] Systematic survey methods create clear baseline data. This data is used to regularly review the current adverse conditions in the natural environment.</p> <p>[1:10:02] This is also very important. Under the county government's conservation intervention, the endangered and threatened species are being managed.</p> <p>[1:11:12] Plant control becomes very important. If plants grow too much, they will dominate the area. If there are too few plants, some organisms will have no space to thrive. The most direct impact is on the habitat, number, and types of water birds, which will directly change. If the area increases, the wetland will turn into land.</p> <p>[1:12:08] If it decreases, the habitats for life will also decrease, so control is necessary.</p>	<p>Wetlands.</p> <p>Endangered and threatened species are also managed under Taiwan's conservation interventions.</p>	
<p>3.4 (Enhancement of ecosystem integrity and connectivity in NbS strategy)</p>	<p>[1:08:05] Next, how to improve the connection between the city and nature relates to human health.</p> <p>[1:08:19] Taipei City, being the capital of Taiwan with high economic development, needs a natural environment for relaxation. Guandu Wetland has a large space planned as Guandu Nature Park where people can engage in activities.</p> <p>[1:08:31] This provides a space for people in Taiwan to interact between the city and nature. The park allows people to enter and interact with nature.</p> <p>[1:09:32] Taipei City relies on Guandu Wetland for natural flood protection because the wetland is located at the mouth of the Tamsui River. Its management is crucial for water disaster prevention in Taipei City. Therefore, Guandu Wetland also plays a role in disaster management.</p> <p>[1:10:02] This is also very important. Under the county government's conservation intervention, the endangered and threatened species are being managed.</p> <p>[1:12:08] Plant control becomes very important. If plants grow too much, they will dominate the area. If there are too few plants, some organisms will have no space to thrive. The most direct impact is on the habitat, number, and types of water birds, which will directly change. If the area increases, the wetland will turn into land.</p> <p>If it decreases, the habitats for life will also decrease, so control is necessary.</p> <p>[1:14:28] Some people find opportunities to collaborate with others as a way to increase NBS. These are opportunities for collaboration</p> <p>[1:14:48] This can enhance social connectivity and relationships. This is an example of one such opportunity. Yes, it is very important because, currently, many Taiwanese groups or even government agencies may only emphasize wetland preservation without considering the overall system's integrity and connectivity.</p> <p>[1:15:33] If we consider integrity and connectivity, it is indeed very important. This involves everything from basic data to future goals. The entire system is crucial because wetlands are highly dynamic natural landscapes. If we don't consider their future on a large spatial scale, any changes might not be positive.</p> <p>[1:16:00] The key concept is the "scope."</p> <p>[1:17:00] Whether looking from a temporal perspective (10 years, 20 years) or a spatial perspective (is it just a wetland space, the Tamsui River mouth, or an area connecting Taipei City's surrounding water and land), it is very important to view these aspects.</p> <p>[1:17:27] Thinking from these perspectives—at least 5 to 10 years for temporal aspects and considering the river mouth environment or Taipei's suburbs for spatial aspects—is crucial.</p> <p>[1:18:07] Let's focus on the time and space key points. The key is time and space.</p> <p>[1:19:15] To specify whether it's the wetland or suburban area, clarify these aspects and integrate them into the business model.</p>	<p>Natural areas like Guandu Nature Park help connect the city to nature and promote human health, providing a space where guests and residents can hold activities. Taipei City benefits from the wetland's natural protective functions, playing an important role in disaster management.</p> <p>Furthermore, as mentioned earlier, the government helps conserve threatened species. People find ways to collaborate and promote NbS through joint efforts. Connectivity is crucial due to the natural landscape's dynamic behavior, which must be fully considered. Taking this into account, both the long- and short-term outcomes of these areas must be evaluated.</p>	<p>Partial</p>
<p>4.1 (Direct and indirect benefits and costs)</p>	<p>[1:20:48] Guandu Wetland's land is basically owned by the government, specifically Taipei City Government. Currently, if they want to manage or operate the land, they need funds. Taipei City Government rents the land to the Taipei Wild Bird Society for a symbolic amount, about one NT dollar per year. This significantly reduces the financial pressure.</p> <p>[1:21:05] Additionally, for operational management, personnel costs are covered through corporate sponsorships. For example, HSBC and other organizations have supported the wetland through environmental funds. Furthermore, revenue from visitor tickets to the</p>	<p>There are direct and indirect costs in the operation of Guandu including beneficiary help from the Taipei</p>	<p>Adequate</p>

	<p>Guandu Nature Park helps cover costs. As for who benefits less, NGOs often face this issue because they always need more resources to make the environment better.</p> <p>[1:23:09] There are other financial resources like banks and corporate sponsorships. They work together, and revenue from park tickets is part of their funding. So, why can't it be free? Why not use donations?</p> <p>[1:23:56] Since the land is still government-owned, it was originally set up with rental conditions for private organizations. It can't be provided for free; there must be a rental fee. The rental amount is symbolic, one NT dollar. But no additional subsidies are provided. The organization must find its own funds for maintenance and management.</p> <p>[1:24:48] In this situation, the goal is to avoid placing financial pressure on the rental cost, allowing the team to focus on securing more resources rather than just renting the land. Taipei City Government aims to minimize expenses.</p>	<p>City Government, ticket sales, and corporations to relieve this pressure. However, since Guandu is run by NGOs, they often need more resources for protection.</p>	
4.2 (Cost-effectiveness study)	<p>[1:27:25] For these measures, even if promoting NBS, Taiwan's regulations need to align with the approach. For example, in Guandu Wetland, regulations allow for civil use, such as fishing and farming. Even though these activities are legal, the focus must be on protecting natural conditions. Thus, laws must align with NBS strategies.</p> <p>[1:28:35] Taipei City Government cannot provide more funds to those managing the space, but it can reduce costs. This is a flexible approach to address the issue.</p> <p>[1:30:27] They can save money for free use, so you need to consider whether the money you spend is necessary.</p>	<p>Farming and fishing are permitted in the Guandu Wetlands, and the Taipei City Government supports cost reductions for managing the space. These measures demonstrate the cost-effectiveness of NbS in this context.</p>	Adequate
4.3 (Alternative solutions to test effectiveness)	<p>[1:31:28] The reason is that NBS emphasizes using natural solutions, and nature should be defined as non-human conditions. Artificial facilities are human-made. Therefore, protecting the natural environment as a starting point is more effective than human design.</p> <p>[1:32:07] Natural-based solutions are non-human, so identifying and listing the benefits of these solutions involves understanding who benefits and what the costs are. In essence, we need to determine whether the benefits are for the natural environment or for people.</p> <p>[1:32:51] When examining such issues, we usually focus on human benefits. For example, Taipei residents benefit from having natural environments around the city, which could provide disaster prevention, green spaces, or stress-relief areas.</p> <p>[1:33:22] These benefits are more focused on people living in the surrounding areas. Regarding costs, theoretically, protecting a natural environment shouldn't have significant costs—just avoid disturbing it. However, costs arise when people enter the environment, necessitating human-made facilities.</p> <p>[1:33:52] Since people need to enter the environment and use facilities, the financial burden falls on those who use the facilities. For instance, if I want to have a restroom in the wetland, it needs to be planned within the natural park. People who buy tickets to enter the park can use the restroom, but those conducting biological surveys don't need such facilities, so they shouldn't bear those costs.</p> <p>[1:34:32] The second point is that Taipei residents benefit from the wetland's functions, like providing a buffer against environmental damage. Even if people need some infrastructure, such as restrooms or other amenities, the costs of such facilities must be considered.</p> <p>[1:37:16] Therefore, if the goal is to protect the original natural conditions, costs should not be high. The fundamental issue is that protecting the natural environment should not be expensive unless additional costs arise from combating environmental damage.</p>	<p>Protecting the natural environment is more effective than human design. It is important to identify benefits that are advantageous for both humans and natural environments. Benefits focused on disaster prevention, green spaces, and stress-relief areas are particularly valuable. The cost of protection should not be high and should primarily aim to avoid disturbances. However, costs tend to increase when human interventions are introduced into the natural environment.</p>	Partial
4.4 (Resourcing options)	<p>[1:40:06] ... The ultimate goal is to ensure that funding is used properly. In Taiwan, this involves contracts or regulations, which are important conditions.</p> <p>[1:41:13] There is no most effective method because those who want benefits will pay for them. Financial resources are about standard, market-based approaches and public support.</p>	<p>Financial support typically relies on public backing and voluntary commitments, which</p>	Adequate

	<p>[1:41:44] Public support and voluntary commitment require the highest trust and regulatory compliance, which can be ensured through checking contracts and regulation execution.</p> <p>[1:43:01] I believe there is no most effective strategy because, in the case of Guandu Wetland, it involves a wetland ecosystem within a natural environment. Additionally, Guandu Wetland is situated in Taipei City, the capital of Taiwan.</p> <p>[1:43:17] Another aspect is that Guandu Wetland is located within the administrative area of Taipei City, the capital of Taiwan.</p> <p>[1:43:31] With these two conditions, one being very natural and the other very human, human factors will influence the current demands of Taipei residents for natural spaces.</p> <p>[1:43:44] If residents believe that Taiwan has other natural spaces, they might want to develop or utilize the Guandu Wetland area even though it is a natural environment. They might hope for more people to use it as a recreational area or to include more environmental education facilities, but these are not natural states.</p> <p>[1:44:14] In terms of natural issues, academia has many discussions about whether wetlands, such as mangrove forests, significantly disrupt the wetland environment. Mangroves can cause wetlands to evolve into land, thereby losing their wetland characteristics. Scholars have different positions—some believe in protecting these areas, while others think they should be removed. These perspectives impact the strategy for Guandu Natural Park's NBS.</p> <p>[1:44:57] This relates back to the earlier discussion: given the market, public nature, and voluntary commitment, funding sources will vary greatly. This variability in funding sources can lead to inconsistent goals, so there is no best solution. In Taipei City, there are many residential areas. Human goals might include more facilities such as educational centers or service centers.</p>	<p>are formalized through contracts. While funding options are generally standard and adequate, the variability in funding sources can result in inconsistent goals, making it challenging to develop a unified solution.</p>	
5.1 (Grievance resolution mechanism)	<p>[1:49:20] ...In Taiwan, there are regulations regarding such environments</p> <p>[1:49:31] Before any behavior changes, there must be a briefing meeting. The briefing must involve specific people and be conducted within a set time frame. The necessary information must be provided according to regulations.</p> <p>[1:49:43] These aspects need to be presented according to the law. This is about public mechanisms and legal conditions. So, for Guandu Wetland, implementing these actions currently aligns with NBS's goals for mechanisms and procedures.</p> <p>[1:50:55]...all responsible parties should know the situation. The system should have a public plan to inform the public about what is being done and who should participate in the meeting.</p>	<p>Mechanisms are in place to ensure that briefings and meetings provide all necessary information and comply with legal regulations.</p>	Strong
5.2 (Indigenous people involvement)	<p>[1:50:22] ...As for NBS participation, 5.2, the aspects of freedom, equality, and rights in Taiwan are generally normal. We even have same-sex marriage laws.</p> <p>[1:51:16] The necessary information should be detailed in the system, especially regarding indigenous peoples' rights, such as free prior informed consent. However, there are no indigenous peoples in Guandu Wetland, so these aspects might be considered less relevant. I would mark this in section 4.</p>	<p>There are no indigenous people in Guandu Wetlands.</p>	Insufficient
5.3 (Stakeholders identification and involvement)	<p>[1:55:10] In Taiwan, it's not typically about who is most influential because, under democratic principles, the law provides fair conditions to present diverse information. In other words, every stakeholder is legally granted the opportunity and right to express their opinions.</p> <p>[1:55:34] Regarding how to resolve potential conflicts, opinions can be submitted through legal procedures. There will be briefings or local elections where these issues are discussed as policy matters. This answers whether there are mechanisms for appeals and resolution.</p> <p>[1:56:15] These mechanisms exist, whether through elections or local policy development, where briefings must be held. There are opportunities to address rights or conflict issues. The system ensures every executor has the right to express their needs and opinions.</p> <p>[1:57:06] For example, during political processes, you must inform the public about what you are doing, as we mentioned before. Policies discussed during election periods are already covered, so everyone's views are protected by the system.</p> <p>[1:57:50] Everyone can express their views because we are talking about</p>	<p>This is the same as 5.4. He identified diverse stakeholders where everyone can voice opinions.</p>	Strong
5.4 (Stakeholders involvement in decision making)	<p>[1:55:10] In Taiwan, it's not typically about who is most influential because, under democratic principles, the law provides fair conditions to present diverse information. In other words, every stakeholder is legally granted the opportunity and right to express their opinions.</p> <p>[1:55:34] Regarding how to resolve potential conflicts, opinions can be submitted through legal procedures. There will be briefings or local elections where these issues are discussed as policy matters. This answers whether there are mechanisms for appeals and resolution.</p> <p>[1:56:15] These mechanisms exist, whether through elections or local policy development, where briefings must be held. There are opportunities to address rights or conflict issues. The system ensures every executor has the right to express their needs and opinions.</p>	<p>In Taiwan's democratic system, all stakeholders have equal opportunities to express their opinions. Conflicts between stakeholders are addressed through legal procedures,</p>	Strong

	<p>[1:57:06] For example, during political processes, you must inform the public about what you are doing, as we mentioned before. Policies discussed during election periods are already covered, so everyone's views are protected by the system.</p> <p>[1:57:50] Everyone can express their views because we are talking about relationships.</p>	<p>briefings, or local elections. When resolutions are needed, meetings and briefings are held, providing a platform to discuss issues and find solutions. This system ensures fairness and offers opportunities to resolve conflicts.</p>	
<p>5.5 (Decision-making beyond jurisdictional borders)</p>	<p>[1:59:06] As I mentioned earlier, conflicts are addressed through legal regulations. In Taiwan, there are laws governing land use and wetland protection that specify what should be done. When conflicts arise, it's about whether you achieve a consensus through communication or if legal procedures are required to determine the right approach.</p> <p>[1:59:36] From the NGO perspective, my experience emphasizes how local people understand the benefits of the natural environment and how this influences the overall decision-making process. However, we can only attempt to influence, not decide.</p> <p>[2:00:06] The key is that those living in the environment are most directly concerned. If they decide not to protect it, we must find other ways to promote improvements, but we cannot directly dictate their choices.</p> <p>[2:03:09] Yes, local residents can advocate with the government. If there are conflicts with the government, they can indeed argue or fight for their interests.</p> <p>[2:03:27] In Taiwan, it is indeed possible. However, this also leads to another issue: when we discussed Standard 3 earlier, we mentioned the need to consider system integrity and connectivity, including the scope and duration for addressing these issues.</p> <p>[2:04:07] This role is primarily for the government to define legally. They must also ensure the public understands why protection is necessary. Even if the public wishes to protest, it is their right, but the government must legally explain why the area should be preserved.</p> <p>[2:04:19] Yes, it is their right to protest, but the government must legally inform them why this area needs protection.</p> <p>[2:05:36] Indeed, it should establish such a mechanism. However, the key point is that since it exceeds its jurisdiction, looking at it from the perspective of Taiwanese government, every piece of land has its own regulations.</p> <p>[2:05:48] You can't say that because NBS is considered a better method for land and environmental management, you can exclude other land management laws.</p> <p>[2:05:59] In other words, if it's not within the scope of private land conservation laws, then other areas should be managed under different regulations. So if the NBS scope exceeds the original jurisdiction, it does need a joint decision-making mechanism. But this means understanding and adjusting methods rather than requiring others to align with NBS.</p> <p>[2:06:33] For instance, looking at the Guandu Park, it's part of the Tamsui River Basin, which is a river mouth area. Once you go beyond the Guandu wetland's legal scope, the same water environment falls under river management laws.</p> <p>[2:07:11] River management laws focus on disaster prevention and flood control. If mangroves are present in the riverbed, safety considerations come into play rather than the ecological value of mangroves. Their value is protected within wetland areas, not under river management conditions, because one is governed by wetland conservation laws, and the other by river management laws.</p> <p>[2:08:48] They should be mutually beneficial but not necessarily in the same external lands. Each type of land has its own regulations and purposes. For example, in external parks, water and land are managed under river regulations.</p> <p>[2:09:29] The main goal of these lands is disaster prevention and flood control. If mangroves are growing in this area, you should remove them. The US and Europe's production capabilities illustrate this. There are many considerations.</p>	<p>The government manages the legal aspects of the Guandu Wetlands, ensuring policies remain within jurisdictional boundaries. NGOs focus on educating local communities about the benefits of the natural environment, aiming to influence decisions rather than dictate them. When policies extend beyond jurisdictional boundaries, joint decision-making mechanisms are required. The key is to adapt methods to suit local conditions rather than imposing NBS uniformly. Each area operates under its own land management laws, which are respected and tailored to the specific purpose of the land, such as disaster prevention, flood control, or conservation.</p>	<p>Adequate</p>
<p>6.1 (Costs and benefits of</p>	<p>[2:11:54] From what I understand, they initially set up long-term basic data, as mentioned before, using the baseline approach to establish core conditions. They use Shorebird to determine the space and time requirements for different bird species.</p>	<p>The use of baseline data and the</p>	<p>Strong</p>

<p>associated trade-offs)</p>	<p>[2:12:08] ... regarding Guandu Nature Park, within the entire nature park, as we mentioned earlier, the baseline conditions serve as a foundational reference. By using Shorebirds, we can assess how much space different bird species require, at what times certain areas should be utilized, and how these patterns evolve over many years. This indeed became a crucial reference point for the initial conservation efforts at Guandu Wetland.</p> <p>[2:12:41] If there are conflicts within the ecosystem itself, I really can't provide a clear answer. For example, the biggest change in Guandu Wetlands last year was adjusting the protection conditions for mangroves, allowing some degree of modification.</p> <p>[2:13:09] Originally, mangroves in Guandu Wetlands could not be damaged. Many meetings were held, including discussions with water resource departments and local residents. They debated the impacts of expanding mangroves on the estuarine environment. Although mangroves are beneficial to certain native species, they also impact others.</p> <p>[2:13:54] After numerous discussions over at least two or three years, it was decided to modify mangrove management. In this situation, it's difficult to provide a definite answer, but the case is similar. So, returning to the question of ecosystem restoration, it depends on how much information we, as humans, have to make judgments.</p> <p>[2:14:24] We might believe that mangroves have the greatest impact on wetland environments. If we cut back some of the mangroves to prevent rapid growth, it may help to avoid large-scale changes in wetland areas. We are indeed making such efforts, but whether they meet our expectations remains uncertain.</p> <p>[2:15:51] During the championship process, they started planning and then execution based on long-term data. They used Shorebird to protect specific species and considered time and spatial relations.</p> <p>[2:16:03] They will consider the connections between space and space. They will consider the connections between space and space, and so on. Some environmental difficulties, like people not being able to answer questions or microphones being removed.</p>	<p>Shorebird framework to assess spatial and temporal requirements for bird species in Guandu Nature Park, forming a foundation for conservation efforts. A major challenge highlighted is the management of mangroves, which required years of deliberation to balance their ecological benefits with their impact on other species and the wetland environment. This emphasizes the complex ecosystem restoration decisions, relying on long-term data, stakeholder input, and adaptive management strategies, though the outcomes remain uncertain.</p>	
<p>6.2 (Rights, usage of, and access to land and resources)</p>	<p>[2:18:11] The entire Guandu area has undergone significant community changes, including the Guandu Temple and its impact on the surrounding community and roads leading to the Guandu Wetlands.</p> <p>[2:19:30] For example, Guandu Church and the nearby roads and temples have changed a lot. The temples might also have some influence.</p> <p>[2:19:45] Given the many changes, and the changes based on everyone's opinions, if we look at it from an official perspective, I think it is appropriate.</p> <p>[2:20:30] Because there are already regulations from Taipei City Government, as well as regulations from the Taipei Bird Association and various contracts from companies like HSBC. There are clear written materials defining what everyone should do.</p> <p>[2:20:57] Therefore, I think it's appropriate in terms of stability for the Guandu Wetlands case.</p> <p>[2:21:16] The Taiwanese government's system and societal regulations, including cultural asset protection laws, wildlife conservation laws, and regulations on intellectual property rights, along with international frameworks like the SDGs from the UN or ESG emphasized by many Taiwanese companies, are well-defined.</p>	<p>The Guandu Wetlands have undergone significant community changes, influenced by nearby landmarks such as Guandu Temple and Guandu Church. These changes are governed by official regulations from the Taipei City Government, alongside guidelines from organizations like the Taipei Bird Association and corporate contracts. The stability and appropriateness of these changes are</p>	<p>Strong</p>

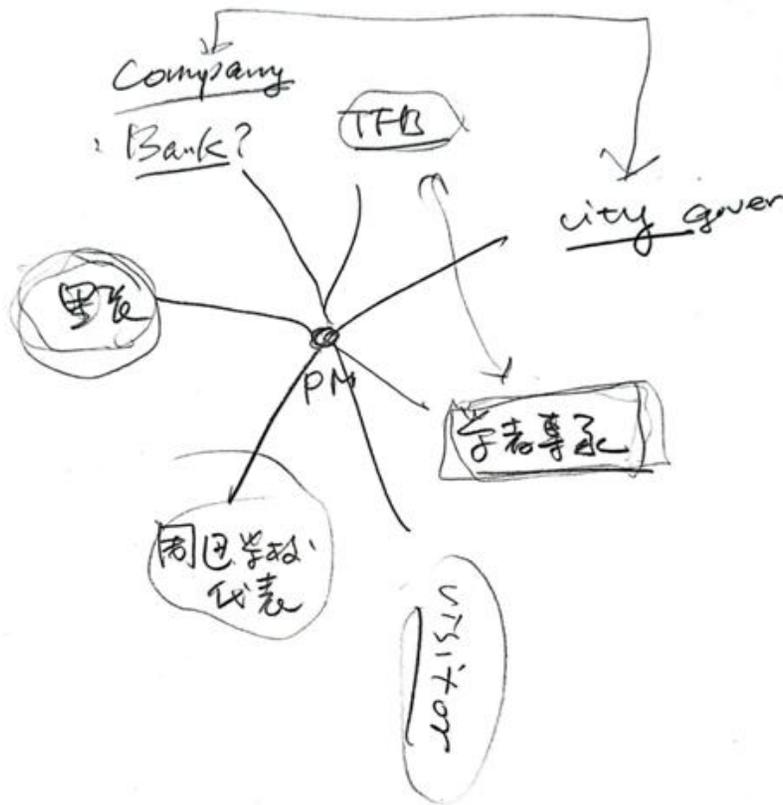
		ensured through well-defined laws, including cultural asset protection, wildlife conservation, intellectual property rights, and alignment with international frameworks such as the UN's SDGs and ESG principles emphasized by Taiwanese companies.	
6.3 (Periodic review of safeguards)	<p>[2:22:16] Additionally, recent years have seen investments from advanced countries like those in Europe and the US, which are subject to IFC regulations. These investments require certain protective measures and execution items.</p> <p>[2:23:00] As I mentioned earlier, in the Guandu Park and Guandu Wetlands case, the stability is present. There are also other regulations like cultural laws, life laws, protection laws, and carbon trading. Plus, SDGS and ESG.</p> <p>[2:23:45] If other countries want to invest, they will also be subject to IFC regulations.</p> <p>[2:23:57] So I believe there are many factors involved, making everything stable.</p>	There are existing regulations, safeguards, and reviews in place for Guandu Park and Guandu Wetlands, including cultural and protection laws, as well as standards like the SDGs and ESG. These measures ensure stability for the Guandu Wetlands.	Adequate
7.1 (Nbs strategy)	[2:25:33] It's actually constantly changing, so I think the reason for not using "strong" but rather "appropriate" is because the baseline trend for the past 20-30 years has already been established. We need to keep referring to it, but it's not the most important thing right now. They have a 20-30 year foundational plan.	The dynamic nature of Guandu Wetlands and it is important to have a plan in the future.	Adequate
7.2 (Monitoring and evaluation plan)	<p>[2:27:05] Because when we talk about the intervention cycle, it's a cycle where you intervene, then do it again and again. This is the NBS intervention throughout the entire lifecycle.</p> <p>[2:27:20] It means trying something and then seeing the results. If the results don't meet expectations, you improve your approach and try again. This process continues until your needs are met.</p> <p>[2:28:51] Managing the Guandu Wetlands is like entering a managed area. We need to continually work in this space; it's not purely natural. We keep trying NBS interventions throughout the lifecycle in this environment.</p> <p>[2:29:04] By using various data, including bird surveys, we see a significant decrease in certain bird species like ducks. This decrease reflects a reduction in their aquatic habitat.</p> <p>[2:29:21] After analyzing spatial data, we found that the mangrove area has increased, which means land space has expanded and aquatic space has decreased.</p> <p>[2:29:33] Therefore, we need to address whether mangroves should be removed and work with water management units to make necessary changes.</p> <p>[2:30:05] This leads to Taipei City Government adjusting regulations for managing the space under cultural heritage laws.</p> <p>[2:30:20] Local residents also consider tourism aspects, as seen from Guandu Park to surrounding areas.</p> <p>[2:30:35] In this process, all units need to use past ecological survey data to make decisions and build consensus. Finally, we should recommend how to meet the needs for independent verification and external review.</p>	During the Nbs cycle, the use of various data can help identify areas of decline. For instance, mangrove expansion can decrease aquatic habitats, necessitating adjustments to regulations by the Taipei City Government. Open data plays an important role in monitoring, and decisions are	Strong

	<p>[2:31:00] Personally, I suggest accepting open raw data because many monitoring and evaluation units view raw data as their asset and don't want to share it. However, sharing data is crucial for discussions, monitoring, and consensus.</p> <p>[2:31:45] It's important to make raw data accessible for transparency and effective evaluation.</p> <p>[2:32:10] In the process, these entities need to base their decisions on the consensus formed from our past biological data, determining how to conduct independent verification and external review.</p> <p>[2:32:54] This process also involves considerations related to local residents' use of the river channels, including tourism aspects and the small-scale tourism industry near the Guandu waterway.</p>	consequently based on past biological data, which also affects local residents.	
7.3 (Framework for adaptive management)	<p>[2:36:22] Yes, I chose "adequate" because in Taiwan, all activities related to this topic, such as discussions on NBS, wetland conservation, or SDGs, are held at Guandu Nature Park.</p> <p>[2:37:00] Guandu Nature Park and its conservation plans, including wetland conservation and utilization plans, align with this concept. Various exchanges, seminars, and regulations are applied here.</p> <p>[2:37:12] Guandu Wetlands are the most utilized area currently. Therefore, regular monitoring and evaluation to enhance learning and adaptation processes are relatively sufficient. It's not perfect, but it is relatively adequate, so I chose "adequate."</p> <p>[2:38:19] He wants to ask whether monitoring services have been enhanced. I (Mr. lee) believe they have, because when discussing NbS or SDGs, the wetland conservation and utilization plans implemented across Taiwan have been adjusted in line with these concepts. Various exchange seminars and the application of regulations, especially in Guandu, are among the most extensively utilized parts. The processes of learning enhancement and adaptation are relatively sufficient—not perfect, but relatively sufficient. Therefore, I would choose "adequate."</p> <p>[2:38:33] The observation is that all aspects of learning are included.</p> <p>[2:39:06] Yes, they will conduct checks and analyses to enhance the learning process.</p>	There are a lot of programs and events related to SDGs in Guandu Wetlands to enhance conservation and learning processes.	Adequate
8.1 (Information sharing for transformative change)	<p>[2:41:08] The score for 8-1 is "strong." Yeah, let me give an example. Why, even though I'm in Changhua now, do I have so much information about Guandu? It's because Guandu Nature Park, the Taipei Bird Society, and even the Taipei City Government consistently share updates, whether through news or field partners. As a result, we can quickly grasp relevant information</p> <p>[2:39:46] Strong. For example, I'm now discussing why I have so much information about Guandu Wetlands. It's because Guandu Nature Park and Taipei Bird Society, including Taipei City Government and various sources related to Guandu Wetlands, continuously share information through news and among colleagues in the field.</p>	Information sharing is visible and apparent between the Wild Bird Society and there are various sources.	Strong
8.2 (Policy, regulations, and laws)	<p>[2:42:14] However, the reason for "adequate" is related to Taiwan's political structure. Local and central governments in Taiwan don't always share the same stance. National policies support wetland protection, but local governments and village heads might not always support it.</p> <p>[2:42:29] In terms of NBS, promoting policy and regulatory improvements is beneficial for NBS application and mainstreaming. However, due to inconsistent local government stances, it hasn't truly become mainstream in Taiwan yet.</p> <p>[2:43:01] The government structure has central and regional governments, which may have differing opinions. Central government may focus on protection, while regional governments might have their own views.</p> <p>[2:43:38] They might not want protection but rather development. Governments may have many policies on connections, but whether they are criticized depends on local government opinions.</p>	The key challenge is mainstreaming NbS, as misalignment between local and central government stances often creates obstacles. While promoting policies and regulatory improvements supports NbS application and mainstreaming, inconsistent positions from local governments hinder its widespread adoption.	Adequate
8.3 (National and global targets)	<p>[2:44:05] The final part doesn't quite fit the focus, so we can skip those areas. Guandu also lacks indigenous-related data, so we can skip that section. I will end the recording for now.</p>	There are no indigenous people in Guandu Wetlands.	Insufficient



Supplementary Figure 1. Map of the facilities and Ecological Areas in Guandu Nature Park.

Supplementary figure 2. Stakeholder Map of Guandu Nature Park Managers with their respective responsibilities (里長 village leader, 周邊學校 representative of around school, 學者專家 scholar/expert) from Interviewee 3 (Forestry Bureau).



Supplementary Table 6. The announcements of the Guandu Nature Park compiled by the Guandu Nature Park Managers in Chinese (on the official website, not including Facebook messages), this is related to international cooperation.

Date	Subject
2010 起-2020	水資源網絡計畫 https://gd-park.org.tw/project/wet https://gd-park.org.tw/news/993 (2013-11-08) https://gd-park.org.tw/news/1016 (2013-11-19) https://gd-park.org.tw/news/1416 (2014-05-18) https://gd-park.org.tw/news/3971 (2017-03-21) https://gd-park.org.tw/news/6620 (2019-02-27) https://gd-park.org.tw/news/7675 (2020-03-19)
2006-迄今	關渡國際自然裝置藝術季(2023 年已是第 19 屆) http://www.guandu-natureart.tw/
2013-.8-06	送愛到谷津干渴 臺日齊心護濕地 https://gd-park.org.tw/news/543
2014-06-04	濕地中心經營有成 關渡自然公園經驗收錄國際典範手冊 https://gd-park.org.tw/news/1477
2016-09-22	關渡自然公園的經營與運作 獲國際濕地專業大師肯定 https://gd-park.org.tw/news/3646
2022-11-10	賀!! 關渡自然公園獲得 WLI 國際濕地聯盟 星級濕地中心殊榮 https://gd-park.org.tw/news/9577
保育相關	
Date	
2013-05-18	三十隻黑面琵鷺齊遊關渡溼地 https://gd-park.org.tw/news/96
2013-06-11	炎夏親水慶端午 齊聚關渡溼地呵護水資源 https://gd-park.org.tw/news/373
2013-11-01	關渡自然公園入秋後第一筆黑面琵鷺記錄 首度由國小學生 率先發現 https://gd-park.org.tw/news/978
2013-12-27	百隻尖尾鴨避寒流 關渡自然公園有史以來最多數量 https://gd-park.org.tw/news/1083
2014-03-20	322 世界水資源日 關渡自然公園邀您愛水護濕地 https://gd-park.org.tw/news/1240
2014-04-24	黑琵白琵齊聚關渡 國家級重要濕地提供遷徙庇護 https://gd-park.org.tw/news/1371
2014-06-20	二級保育珍貴魚鷹落難 關渡自然公園積極搶救 https://gd-park.org.tw/news/1541
2014-06-20	極稀有迷鳥「彩鸚」首次北臺灣紀錄 現身關渡自然公園 https://gd-park.org.tw/news/1542
2015-12-05	候鳥來台避冬 珍貴巴鴨現身關渡自然公園 https://gd-park.org.tw/news/2987

2016-12-07	開園以來最大量！鴛鴦來報到，關渡自然公園好熱鬧！ https://gd-park.org.tw/news/3758
2017-04-14	稀客，開園至今最大量 東方白鶴再度蒞臨關渡自然公園 https://gd-park.org.tw/news/4034
2021-01-01	蘆洲灘地及五股灘地鳥類變化監測調查 https://gd-park.org.tw/news/9026
2022-02-19	2021 年鳥類調查結果 https://gd-park.org.tw/news/9025
2022-09-01	2023 小水鴨報到!!! https://gd-park.org.tw/news/10109
2023-11-13	保育野鳥，請保持愛護牠的距離 https://gd-park.org.tw/news/10424
2023-12-13	大鴛報到！請與我們一同守護候鳥棲息地 https://gd-park.org.tw/news/10365
2015-12-05	候鳥來台避冬 珍貴巴鴨現身關渡自然公園 https://gd-park.org.tw/news/2987
2016-12-07	開園以來最大量！鴛鴦來報到，關渡自然公園好熱鬧！ https://gd-park.org.tw/news/3758
2017-04-14	稀客，開園至今最大量 東方白鶴再度蒞臨關渡自然公園 https://gd-park.org.tw/news/4034
2021-01-01	蘆洲灘地及五股灘地鳥類變化監測調查 https://gd-park.org.tw/news/9026
2022-02-19	2021 年鳥類調查結果 https://gd-park.org.tw/news/9025
2022-09-01	2023 小水鴨報到!!! https://gd-park.org.tw/news/10109
2023-11-13	保育野鳥，請保持愛護牠的距離 https://gd-park.org.tw/news/10424
2023-12-13	大鴛報到！請與我們一同守護候鳥棲息地 https://gd-park.org.tw/news/10365

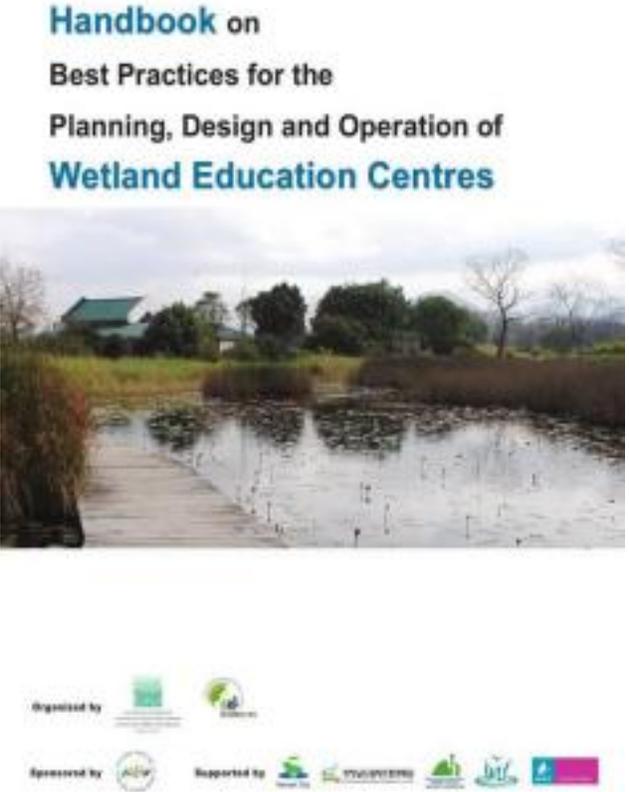
Supplementary Table 7. List of Awards of Guandu Nature Park provided by Guandu Nature Park Managers in Chinese.

Year	News Links	Related Photos
<p>2003 年 榮 獲行政院 獎勵【第 二屆民間 團體參與 公共建設 之金擘獎 特優】</p>	<p>https://www.merit-times.com/NewsPage.aspx?unid=532245</p>	
<p>2004 年 「關渡希 望之土 計 畫」榮獲 頒福特保 育暨 環保 獎【環境 推廣教育 佳 作獎】</p>	<p>https://news.u-car.com.tw/news/article/4103</p>	 
<p>2005 年 臺 北市民眾 票 選榮獲 【5 到 10 歲兒童最 愛去的臺 北市景 點】 2006 年 天 下雜誌評 選 榮獲 【「Do One Thing Good for</p>	<p>https://www.kyivvs.khc.edu.tw/main_newsdetail.php?type_id=6&news_id=1428</p>	

<p>Taiwan 讓 改變看得 見：發現 濕地·心 無障礙-心 濕地體驗 特教引導 師培訓」 公益活動 最佳執行 成果獎】</p>		
<p>2008 年 『因長期 致力於結 合環保及 綠色文化 元素·應 用推廣於 文化藝術 領域的卓 越貢獻 者』·榮 獲臺北市 政府【第 十二屆臺 北文化 獎】之獎 勵</p>	<p>https://culture.gov.taipei/News_Content.aspx?n=621F0409A1ABDD34&sms=72544237BBE4C5F6&s=6E11D6530ED4F25A</p>	
<p>2009 年遠 見雜誌評 選 榮獲 【全國百 大最佳親</p>	<p>https://enews.moenv.gov.tw/page/3b3c62c78849f32f/efefb750-b4a6-4d87-95a3-1c022e8d815f</p>	

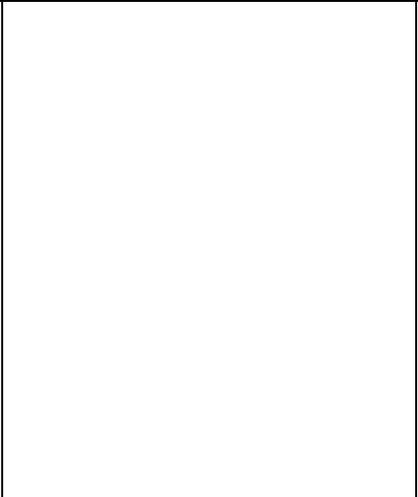
<p>子共遊景點】</p> <p>2011年經過評鑑榮獲全國第一所通過《環境教育法》認證之【環境教育設施場所】</p>		
<p>2012年榮獲臺北市【環境教育績優表揚獎團體組特優獎項】</p>	<p>https://tw-taiwannews.com/?p=31420</p>	
<p>2012年獲得【國際宜居城市獎(LivCom Awards)個案獎銀質獎】</p>	<p>https://tw-taiwannews.com/?p=31420</p>	

<p>2013 年台北市野鳥學會獲得【第一屆國家環境教育獎團體組優等】(關渡自然公園為主要評鑑場域)</p>	<p>https://enews.moenv.gov.tw/page/3b3c62c78849f32f/ecd12fda-6120-467d-90b7-41a4e3f8b117</p>	
<p>2013 年台北市野鳥學會獲得行政院【102 年國家永續發展獎】，經營關渡自然公園成果以及維持濕地生態列為重要得獎優點，成為 NGO 與政府間之 OT 可永續發展的典範</p>	<p>https://ncsd.ndc.gov.tw/_ofu/download/annualReport2/102%E5%B9%B4%E5%9C%8B%E5%AE%B6%E6%B0%B8%E7%BA%8C%E7%99%BC%E5%B1%95%E7%8D%8E%E5%BE%97%E7%8D%8E%E5%90%8D%E5%96%AE.pdf</p>	

<p>2014 年 獲 得 聯 合 國 濕 地 秘 書 處 收 錄 為 拉 姆 薩 爾 濕 地 中 心 的 典 範</p>	<p>https://www.ramsar.org/sites/default/files/documents/library/2014w ec-hb_en_lr.pdf</p>	 <p>Handbook on Best Practices for the Planning, Design and Operation of Wetland Education Centres</p> <p>Organized by</p> <p>Sponsored by</p>
<p>2015 年 獲 得 國 家 【 環 境 教 育 設 施 場 所 】 評 鑑 優 異 之 肯 定</p>		 <p>104年度環境教育設施場所評鑑優異</p> <p>臺北市關渡自然公園</p> <p>行政院環境保護署 製發</p>
<p>2016 年 順 利 取 得 環 境 教 育 法 認 證 展 延 之 【 環 境 教 育 設 施 場 所 】</p>		

<p>2019 年再次通過環境教育法認證評鑑之【環境教育設施場所】</p>		
<p>2019 年榮獲 2019 年臺北市觀光遊憩績優景點【優良自然生態獎】與【最佳社區貢獻獎】</p>	<p>https://www.tpedoit.gov.taipei/News_Content.aspx?n=603755835E928BED&sms=72544237BBE4C5F6&s=30000EE7512FD403&fbclid=IwAR07m_85TaMGjcevAO9CFaU96R9oP7fpPzMzT0noTR3SHOGKVbzCpSMUCRs</p>	
<p>2020 年順利取得觀光局穆斯林友善場域認證</p>		

2021 年再次通過環境教育法認證評鑑之【環境教育設施場所】

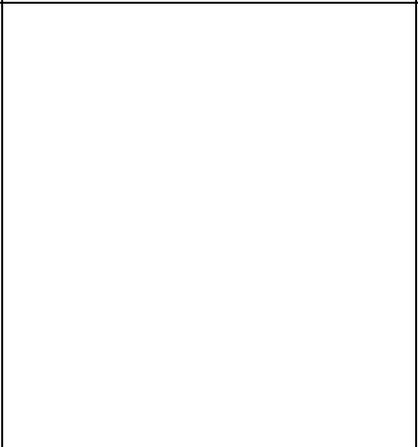


2022 年關渡自然公園獲國際濕地網絡評選為「WLI 星級濕地中心」

<https://wli.wwt.org.uk/initiatives/star-wetland-centres/>



2023 年通過穆斯林友善環境完成授權認證



Supplementary Questionnaire 1. English Criterion with Guided Questions based on the IUCN Global Standards

Greetings this is a semi-constructed open-ended interview. This is the IUCN NbS criterion. There are 8 criteria with 28 indicators. Please rate all indicators:

- **Strong**
 - The drivers of and responses to identified societal challenges are well understood, including with reference to the relevant national/local context, and are fully documented and accessible.

- **Adequate**
 - Drivers of and responses to identified societal challenges are broadly understood within the relevant context although some documentation and knowledge gaps persist.

- **Partial**
 - Societal challenges framed in terms consistent with widely accepted narratives but multiple documentation and context-specific knowledge gaps persist.

- **Insufficient**
 - Superficial/limited understanding of drivers of and responses to identified societal challenges with limited or no documentation.

To further justify the scores for each indicator a rationale must be provided along with a detailed explanation for the tools used to reach to the rationale given for each indicator. Guided question below are also provided to give more details for the 28 indicators. If you notice gaps in the tool you can make additional comments on how you will address or how you solved it.

Questionnaire for the Criterion:

Criterion 1: NbS effectively address societal challenges

C1.1 The most pressing societal challenges(s) for rights-holders and beneficiaries are prioritised

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. What Societal Challenge does Guandu Wetlands face. Who are affected by these challenges?

C1.2 The societal challenge(s) addressed are clearly understood and documented

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Please provide any insights, examples, and/evidence you have regarding these challenges.

C1.3 Human well-being outcomes arising from the NbS are identified, benchmarked and periodically assessed

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Could you please elaborate on any human well-being outcomes you believe should be prioritized and monitored in the context of this project or initiative? Additionally, how do you suggest these outcomes should be measured or assessed periodically?

Criterion 2: Design of NbS is informed by scale

Questions:

C2.1 The design of the NbS recognises and responds to interactions between the economy, society and ecosystems

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Can you identify opportunities for scaling up the Guandu Wetlands project, considering synergies across sectors and interactions between the economy and society? Additionally, could you elaborate on your strategic approach to upscaling the project, including aspects like long-term monitoring and assessment for the conservation efforts of the Guandu Wetlands?

C2.2 The design of the NbS is integrated with other complementary interventions and seeks synergies across sectors

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. How do you plan to involve various stakeholders in the project's scale-up, ensuring a participatory approach? Additionally, how will you incorporate cross-sectoral solutions to address diverse needs?

C2.3 The design of the NbS incorporates risk identification and risk management beyond the intervention site

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Are there any potential challenges, benefits or adverse effects when implementing your scale up plan.
2. How do the management address risks beyond the Guandu Wetlands, considering potential conflicts with policies, competing interests, land-use practices, and adaptability to changes? Additionally, how are potential risks and pressures, like the introduction of invasive species, managed in the (Nature-based solutions) implementation in Guandu Wetlands?

Criterion 3: NbS result in a net gain to biodiversity and ecosystem integrity

Questions:

C3.1 The NbS actions directly respond to evidence-based assessment of the current state of the ecosystem and prevailing drivers of degradation and loss

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Have biodiversity improvements occurred in Guandu Wetlands, and are there specific targets for enhancement? If so, who sets these targets and what do they encompass in terms of species, tree coverage, actions, quantities, and timeframe?
2. How was the baseline for biodiversity in Guandu Wetlands measured?

C3.2 Clear and measurable biodiversity conservation outcomes are identified, benchmarked and periodically assessed

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Does Guandu Wetlands exhibit increased biodiversity, measured against specific standards? Also, what are the quantifiable ?
 - a. ecosystem services provided, including tourism, employment, and carbon storage?
 - b. Structural information encompassing factors like trophic dynamics, species composition, vegetation, and spatial distribution of key types?
 - c. Physical environment
 - d. From your viewpoint, how do external threats (disasters, climate change, typhoons) threaten important species (IUCN Red List of threatened species and Red List of Ecosystems)?

2. What specific biodiversity conservation outcomes do you believe should be prioritized and tracked in the context of Guandu? Please provide any insights or suggestions regarding the measurable variables, actions, quantities, and time-periods that should be considered when setting conservation targets.

C-3.3 Monitoring includes periodic assessments of unintended adverse consequences on nature arising from the NbS

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Does Guandu conduct periodic reviews with data collection that are analyzes and publishes to education centers.
2. How does Guandu Wetland improve nature connections in cities?

3. Give concrete examples of how Gaundu Wetlands improve the nature connection in cities and the environment.
4. Please discuss existing conservation interventions for species and ecosystems at risk in the landscape/seascape, offering your insights and observations?

C-3.4 Opportunities to enhance ecosystem integrity and connectivity are identified and incorporated into the NbS strategy

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. What do you perceive as the key opportunities for enhancing ecosystem integrity and connectivity within the scope of this project or initiative? Please share any ideas or suggestions regarding how these opportunities could be effectively incorporated into the Nature-based Solutions (NbS) strategy of Guandu Wetlands.

Criterion 4: NbS are economically viable

C4.1 The direct and indirect benefits and costs associated with the NbS, who pays and who benefits, are identified and documented

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. How is the funding of Guandu wetlands sustained to be economically viable.

C-4.2 A cost-effectiveness study is provided to support the choice of NbS including the likely impact of any relevant regulations and subsidies

Insufficient	Partial	Adequate	Strong
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C-4.3 The effectiveness of the NbS design is justified against available alternative solutions, taking into account any associated externalities

Insufficient	Partial	Adequate	Strong
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Guided Questions:

1. Do you think it is more cost effective to protect Guandu wetlands rather than having artificial infrastructure to do the jobs of mangrove ecosystem
2. Please identify and account the benefits of Guandu Wetlands and who does it benefit, and what are the costs and who is financially responsible for it?

4. What are the monetary benefits and non-monetary benefits?

C-4.4 The NbS design considers a portfolio of resourcing options such as market-based, public sector, voluntary commitments and actions to support regulatory compliance

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. What are the most effective strategies for securing resources to support the implementation and sustainability of Nature-based Solutions (NbS) within the context of Guandu? Please provide insights or recommendations regarding the portfolio of resourcing options, such as market-based approaches, public sector support, voluntary commitments, and actions to ensure regulatory compliance.

Criterion 5: NbS are based on inclusive, transparent and empowering governance processes

C-5.1 A defined and fully agreed upon feedback and grievance resolution mechanism is available to all stakeholders before an NbS intervention is initiated

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. What measures do you suggest for establishing a feedback and grievance resolution mechanism that is fully agreed upon by all stakeholders before initiating a Nature-based Solutions (NbS) intervention in Guandu? Please provide insights on the procedures, roles, and rules that should be included in this mechanism to ensure its legitimacy, accessibility, predictability, equity, transparency, compatibility with rights, adaptability, and emphasis on engagement and dialogue.

C-5.2 Participation is based on mutual respect and equality, regardless of gender, age or social status, and upholds the right of Indigenous Peoples to Free Prior and Informed Consent (FPIC)

Insufficient	Partial	Adequate	Strong
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C-5.3 Stakeholders who are directly and indirectly affected by the NbS have been identified and involved in all processes of the NbS intervention

Insufficient	Partial	Adequate	Strong
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C-5.4 Decision-making processes document and respond to the rights and interests of all participating and affected stakeholders

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Who are positively and affected in Guandu Wetlands ? Who are most influential and/or marginalized to the operation and policies that take place in Guandu Wetlands? Please identify their interests, main challenges, and/or potential conflict.
2. How are potential conflicts resolved?
3. Are there grievance or dispute settlement mechanisms in place?

C-5.5 Where the scale of the NbS extends beyond jurisdictional boundaries, mechanisms are established to enable joint decisionmaking of the stakeholders in the affected jurisdictions

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. How do you propose establishing mechanisms to enable joint decision-making among stakeholders in different jurisdictions when implementing Nature-based Solutions (NbS) projects in Guandu that extend beyond jurisdictional boundaries? Please provide evidence

Criterion 6: NbS equitably balance trade-offs between achievement of their primary goal(s) and the continued provision of multiple benefits

Questions:

C-6.1 The potential costs and benefits of associated tradeoffs of the NbS intervention are explicitly acknowledged and inform safeguards and any appropriate corrective actions

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Please identify the trade-offs qualitatively and/or quantitatively, as well as determining who receives and who pays them. Additionally, how do you suggest incorporating this analysis into the entire lifecycle of Guandu Wetlands, including initiation, planning, execution, and closure?

2. What are the trade-offs identified in terms of spatially, temporal, and reversibility?
 - a. Spatial- effects of trade off felt locally or distant?
 - b. Temporal- effects take place relatively rapidly or slowly?
 - c. Reversibility- likelihood that a disputed ecosystem service may return to its original state?

C-6.2 The rights, usage of and access to land and resources, along with the responsibilities of different stakeholders, are acknowledged and respected

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Please provide Stakeholder mapping with the responsibilities of stakeholders and how they use the resources of Guandu Wetlands.

C-6.3 The established safeguards are periodically reviewed to ensure that mutually-agreed trade-off limits are respected and do not destabilise the entire NbS

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. How can we ensure that agreed-upon trade-off limits are respected and periodically reviewed to prevent destabilization of Guandu Wetlands?

2. Additionally, how can existing safeguard policies, like those of the UNFCCC or the World Bank, be adapted for local contexts

Criterion 7: NbS are managed adaptively, based on evidence

C-7.1 An NbS strategy is established and used as a basis for regular monitoring and evaluation of the intervention

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Since the ecosystem is dynamic in nature, how does Guandu Wetlands adapt to various ecosystem changes and face uncertainties overtime?

C-7.2 A monitoring and evaluation plan is developed and implemented throughout the intervention lifecycle

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Is there developed and implemented comprehensive monitoring and evaluation (M&E) plan throughout the lifecycle of the Nature-based Solutions (NbS) intervention?
2. Considering the importance of stakeholder involvement, how can we ensure that the M&E plan is participatory and effectively captures both positive and negative impacts?
3. Additionally, how do we address the need for independent verification and external review, as well as adaptive management actions in response to changing conditions, while upholding accountability and compliance?

C-7.3 A framework for iterative learning that enables adaptive management is applied throughout the intervention lifecycle

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Does monitoring and evaluation done regularly to enhance the learning and adapting process?

Criterion 8: NbS are sustainable and mainstreamed within an appropriate jurisdictional context

C-8.1 The NbS design, implementation and lessons learnt are shared to trigger transformative change

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Does Guandu wetlands publicly releasing newsletters partnerships, press releases, and policy briefs?

C-8.2 The NbS informs and enhances facilitating policy and regulation frameworks to support its uptake and mainstreaming

Insufficient	Partial	Adequate	Strong
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Guided Question:

1. Does Guandu wetland currently align with government regulations and policies to support its mainstreaming and uptaking?

C-8.3 Where relevant, the NbS contributes to national and global targets for human well-being, climate change, biodiversity and human rights, including the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

Insufficient	Partial	Adequate	Strong
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