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The power of woman-to-woman mentorship in creating long-term changes in biodiversity conservation in Southeast Asia

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Growing evidence indicates that women's involvement and leadership are important to creating inclusive conservation programs, increasing likelihood of success, and achieving sustainability. Effective future women leaders can be created by providing them with dedicated mentorship, as in long-term support and dynamic learning that encompass the entirety of a person, not only their technical training. Mentorship by women is key to ensuring more women are empowered, can advance their careers, and become independent leaders in their domains. The ways mentorship contribute to a woman's career have been frequently studied in medicine, sports, and education, yet rarely in conservation. Providing real examples of long-term mentorships centered on the perspective of a mentee from the Global South will demonstrate an applicable roadmap towards recruiting and retaining women in conservation. We recount two sets of ten-year long mentor-mentee relationships—one with a foreign mentor and the other domestic—based on our personal experiences in Indonesia. We examined issues raised by Indonesian women in conservation and provided targeted solutions that may be applicable to a broader audience. The resulting group of empowered, capable women can rely on one another for technical and moral support, along with work together to shift social norms towards becoming more inclusive of women in more varied roles and at multiple career levels in conservation. In highlighting real examples, mentees can understand what they should seek out and expect from mentorship, and how women from the Global North and Global South can provide true mentorship to more women without access to the same opportunities. We hope to inspire more women from the Global South to continue their careers and be leaders in conservation.

KEYWORDS

conservation, diversity, equity, mentorship, Southeast Asia, women in STEM, Indonesia

1 Introduction

There is a geographic mismatch between conservation needs and expertise, in which experts for biodiversity-rich regions such as Southeast Asia are predominantly from the Global North instead of the region itself (Rodríguez et al., 2006; Campos-Arceiz et al., 2018). This is a form of scientific imperialism that makes it difficult for all stakeholders to participate in conservation. Unequal access to learning opportunities extends into a variety of technical and soft skills deemed essential for success in a conservation career. However, how skill gaps are framed is indicative of who the target audience a training activity is aiming to increase the comfort and ease of participation for in conservation. For example, a lack of English fluency of Global South scientists is often cited as the main barrier to advancing mentee careers instead of a lack of access to opportunities in science education. This places the responsibility more on Global South mentees to "fix" the issue even though an equivalent solution for solving the communication gap is for Global North mentors to have a basic grasp of the local language. Requiring English is only one of many examples where conservation science prioritizes the needs of the Global North mentor instead of the needs of the Global South mentee. This type of neo-colonialism must be challenged to produce effective local leadership for long-term conservation impact.

Competencies for effective leadership cannot be fulfilled by the existing institutional structures in Southeast Asia; these skills need more dedicated, long-term guidance to mature. Only 10% of available jobs in conservation are academic, while the other 90% are non-academic positions that require a greater variety of skills, many of them being soft skills indispensable for securing a job (Lucas et al., 2017). These required skills that are often not fully covered by standard undergraduate or graduate university training, such as strategic communication and leadership capabilities, leaving students unprepared for careers in conservation (Poor et al., 2021). All of these factors severely affect accessibility of education to students from rural areas in particular (including the mentee author, Sheherazade), despite these areas often being the ones that experience the impacts of biodiversity loss and habitat degradation (Sodhi et al., 2010). Formal or informal forms of professional development opportunities to address these gaps are rare in most of Southeast Asia, consequently resulting in a continued dependency on mentors or collaborators from the Global North for connectivity to the broader international network of conservationists or more resource-heavy protocols.

These challenges are even worse for women as historical gender imbalances continue to be perpetuated by inaction in addressing inclusivity issues, which is particularly acute for women in leadership (Liévano-Latorre et al., 2020). Here, we define women as individuals who internally identify as female regardless of external appearance, and/or have faced similar cultural or societal expectations and challenges associated with being female (APA, 2022). Women usually face challenges throughout their careers related to sexist prejudices, harassment, assumptions of inadequacy, and toxic power dynamics, which can result in a great degree of mental and/or emotional distress and demotivate them from staying in STEM (Jones and Solomon, 2019; Baker, 2020; James, 2020; Thornton et al., 2020). A recent study on mental health among conservationists showed that women are one of the groups with the highest risk of psychological distress (Pienkowski et al., 2022). With conservation continuing to be a male-dominated field (Poor et al., 2021), women often face difficulties finding suitable and safe emotional support because there are so few other women in similar careers.

In past discussions about capacity building in Southeast Asia conservation, women's perspectives were often excluded (Manolis et al., 2009; Poor et al., 2021). The issue we have repeatedly heard from Indonesian women is that past and existing efforts do not even bother to ask them for input and recognize their existence in the conservation space. Understanding where these issues of gender and colonialism intersect in Southeast Asia is important to developing effective strategies for increasing women in leadership roles. For example, racism and ageism are discussed at length as major forms of discrimination in the US (Jones and Solomon, 2019), whereas religion and local culture intersect more with gender issues in Indonesia. When the patriarchal nature of many Southeast Asian societal structures (Nilan and Demartoto, 2012) is combined with the lack of safe and/or inclusive spaces, women can be discouraged or demotivated from pursuing a career in conservation. This is often the first barrier that needs to be overcome. Even if affordable training became more available, the number of women applying would not necessarily grow and the expected positive impact would not be achieved equally across genders. Indonesian societal expectations deem women unsuitable for jobs that require strenuous activity, which conservation fieldwork often entails. Instead, they are expected to have a family and stay at home or have a job indoors. Given these expectations, young women are often not given any career advice that enables them to envision a career trajectory in conservation. Young women are often told that they are "going to be a housewife anyway," therefore getting more training is "useless"—an experience that is common to a significant majority of young women we have spoken to over the past decade. In Indonesia, the average age of marriage is 22 (The World Bank, 2017) and the importance placed on marriage is heavily tied to cultural and religious reasons, often leading to young women abandoning their education (The Economist, 2021). For example, the majority of undergraduates in the Biology Department at Andalas University in Sumatra were women, but many of them ended their careers in conservation after graduation due to cultural reasons (Havmøller et al., 2015).

This is a critical issue to address, as growing evidence indicates that women's involvement and leadership are important for creating inclusive conservation programs, increasing the likelihood of success, and achieving long-term sustainability (World Bank, 1995; UN Water, 2006; UNHCR, 2019).

Many of these societal and systemic inequity issues are likely better understood by a woman mentor who has experienced similar challenges, making a woman-to-woman mentorship an important relationship to nurture. Woman-to-woman mentorship can be an enabling factor to greater empowerment, career advancement, and independence and provide support to the mentee to better navigate the challenges embedded in existing social systems (Jones and Solomon, 2019; Larasatie et al., 2020; Thornton et al., 2020; Nocco et al., 2021). Yet, mentorship as an action and how it can support the next generation of conservationists has not been discussed thoroughly and leaves a great deal of untapped potential for how we can improve capacity building efforts for conservation. A truly equitable mentorship is a relationship that promotes growth of the mentee as a person in totality instead of only specific technical or professional competencies (Winston and Dahlbergh, 2019). Mentorship is often treated as only a complement to technical workshops (Chao et al., 2022), but it should be deemed an important component in its own right if the goal is to have more women in leadership roles in the future. The mentor is a stable force through which the mentee can receive long-term, regular feedback, and promote growth through guidance, intensity, reflection, and regulated learning. The mentor can also provide the mentee with an understanding of intangible aspects to attaining "success," such as the culture of the discipline, and help the mentee build a strong sense of personal identity in order to be confident and independent into the future—that is, be empowered. The scope of a contemporary mentorship thus expands outside of solely a career function and into psychosocial development of the mentee (Winston and Dahlbergh, 2019; Mullen and Klimaitis, 2021). By promoting woman-to-woman mentorships, the mentee can access relevant advice about how to overcome societally and culturally specific challenges.

In this article, we provide real examples of the impacts of two sets of long-term woman-to-woman mentorships (one foreign mentor and one domestic mentor), centered on the perspective of a mentee from the Global South along with anecdotal data from others to demonstrate an applicable roadmap towards producing and retaining future women leaders in this field. We first conducted literature reviews through Google Scholar to ensure we all references related to mentorship of women in conservation. We first used keywords on the discipline as a whole ("mentorship women biodiversity conservation"), and then more specifically on our regional focus ("Southeast Asia") and country ("Indonesia"). The combined insights from other Indonesian women were gleaned from the authors having worked with larger groups of students during training or professional development activities over the past ten years. Based on our literature review, there were few references that speak to the experiences and challenges faced by women in conservation in Indonesia. The voices of Global South mentees are largely under-represented in the literature about mentorship, and what is available is limited in scope (*e.g.*, Neils, 2015; Larasatie et al., 2020; Chao et al., 2022; Poor et al., 2021). Existing studies often analyze the experiences of mentees from the perspective of mentors from the Global North and do not fully capture the challenges early career conservationists may face (Poor et al., 2021). From a combination of the literature review and our past decade of experience and collected anecdotes, there are many factors that contribute to the continuing lack of scholarship on mentoring from Global South conservationists, such as the lack of capacity to write scientific articles in English, inadequate time to write amid busy schedules, and safety and security issues of disclosing their experience publicly. Additionally, it does not occur to many of them that writing this kind of case study based on their experience can be impactful for making a change.

We are not implying that men should not mentor women but are showing how women mentors can provide support that is particularly beneficial for young women mentees who are new to science, conservation, or academia. There are few existing examples of woman-to-woman relationships in Indonesia due to the rarity of truly non-exploitative mentorships between mentors and mentees, much less one that involves women only. We utilized our personal experiences as specific examples for those observations and recommendations in order to maintain the anonymity of others who have spoken to us about these issues in confidence. We examined challenges faced by Indonesian women which may be applicable to others in the Southeast Asia region and provided targeted solutions to fill in knowledge, skill, and mentoring gaps.

2 Recommended actions

2.1 Mentorship needs to address intangible needs of mentees

2.1.1 Provide emotional support

Through woman-to-woman mentorship, early-career women scientists can find long-term emotional and mental support that is needed the most by women to address challenges together (Stonewater et al., 1990). Studies on public and private organizations suggest that compared to mentors who are men, women provide more personal and emotional support, career development facilitation, and role modelling (Fowler et al., 2007). Building strong, positive relationships is critical for helping mentees become more resilient (*e.g.* Apriani and Zulfiani, 2019).

For mentors seeking to improve their ability to guide mentees, working on skills related to improving their own emotional intelligence will ultimately improve their ability to connect with mentees. This is particularly important to breaking down hierarchical barriers that act as obstacles hindering mentee desire to open up about their own struggles. Along with other existing

imbalanced relationships of professor and student, mentor and mentee, older and younger, a foreign mentor brings the additional pressure of the Global North to Global South relationship that can only be overcome by mentors being emotionally intelligent and capable at handling cross-cultural collaborations. Historical factors related to past colonialism and current forms of neo-colonialism (*e.g.*, scientific imperialism, "parachute" science) can create unintended barriers to mutual understanding between mentors and mentees.

Particularly in Southeast Asia, the power imbalance that exists between a foreign mentor and potential mentee makes it difficult for young women to ask something outright, and the mentor must be proactive in recognizing this in their interactions with their mentee (s). This observation is based on conversations that both the mentee and mentor authors have had with Indonesian students who have had varying degrees of experience with a foreign collaborator or mentor, ranging from brief interactions (less than one week) to sustained regular advising over multiple years. The mentor must ask specific questions about the mentee's circumstances or offer to do something specifically. A mentor should recognize that mentees are often unfamiliar with the types of support that can be given, and laying out those options explicitly to the mentee both reduces potential mentee hesitation in asking for assistance and sets expectations of what the mentor is willing to provide as assistance. Current expectations for mentees to make the first contact are misguided and counter to the cultural norms for young Indonesian women. For instance, when the foreign mentor (S.M. Tsang) and mentee (Sheherazade) first met, they talked about her interest in ecological research and conservation. However, the mentor encouraged the mentee to continue the conversation by following up with her regularly about her progress and studies, eventually evolving the conversation to be about her long-term career goals. With the domestic mentor (A.A. Lanusi), she could provide the mentee with guidance for how to navigate sexism, discrimination, and sexual harassment in Indonesia, and helped her address family issues that impacted her career. The domestic mentor also shared with the mentee her own past experiences in rural areas, where she faced more prejudice for being an unmarried woman.

2.1.2 Create an inclusive and safe working environment

The conservation sector needs to strengthen its efforts to create an inclusive working environment for women and reduce prejudice and stereotypes towards women. In Indonesia, this would include simple actions such as eliminating gender-specific requirements in conservation vacancy listings and assignments of responsibilities. For example, women are often tasked with administrative work because they are considered tidier, or field assignments are given to men because women are perceived as physically weaker. Since there is a paucity of women in leadership positions who can make hiring decisions, this requires more awareness of the issue on an institutional level and more involvement of male allies in speaking up about these existing biases, which mentors can help encourage.

In discussions over the past decade related to fieldwork with other potential mentees, personal safety was indicated as a major concern for women working in conservation, especially since Indonesian society tends to minimalize incidents of sexual harassment and sexual violence. While there is a growing women's rights movement on the national level in Indonesia (*e.g.* Dunstan and Bhardwaj, 2019), that does not necessarily provide practical protection to women in the field. Fieldwork presents conditions where young women may feel especially vulnerable—such as being the only woman on the team, in remote and unfamiliar locations, isolation for long periods of time, limited access to external communication, and more. When both the foreign mentor and mentee traveled together to the field, there were no incidences of blatant sexual harassment, but both have experiences when traveling alone. Having two people present made it more difficult to isolate one to harass, which afforded the mentee more protection. Mentors need to be proactive in letting mentees know that their personal safety is a priority so that mentees do not feel as fearful of reporting potential incidents.

Making safe spaces for young women to even speak about sexual harassment is an important first step when societal pressure has silenced many young Indonesian women. Having a woman mentor who is more likely to empathize with the mentee can give a greater sense of security, and women mentors can also act to prevent continued inappropriate behavior. The mentor can learn how to be an active bystander to interrupt incidences of harassment, which can not only help the mentee immediately but also establish that harassment will not be tolerated in general. If organizational disciplinary action against the perpetrator is an option, the mentor can provide a more authoritative voice to the report and assist the mentee with the bureaucracy of reporting. Mentors should not accept sexual harassment as a cultural norm and minimize or ignore incidents of harassment. Giving women mentees a safe space to exist ultimately helps them in their scientific endeavors, as it alleviates a great deal of mental distress.

2.1.3 Help mentees stay motivated despite social expectations

Having other women in a variety of family situations as role models and understanding that a conservation job is a viable career choice can motivate women to stay and advance in the field. Potential mentors can reach out to mentees and share their own career journeys in the context of personal struggles, while over time building a deeper connection so that the mentee feels comfortable sharing her struggles with the mentor. Once motivation is addressed, a mentee is more likely to put effort into planning for a future in conservation, and become more resilient in the face of challenges. In our past experiences with many early career Indonesian women, they suggested that these conversations should be done through regular, open contact in either formal

(*e.g.*, office hours) or informal (*e.g.*, instant messaging) settings to provide a reliable form of communication for professional advice or moral support. Similarly, seeing the normalization of women participating in scientific research and conservation was an important motivational force for the mentee author to pursue a career in conservation. In her personal experience, understanding her mentors' decisions to not center life goals around seeking a marriage partner (A.A. Lanusi) and to have potential life partners but reject the institution of marriage (S.M. Tsang) is already empowering in itself in the Southeast Asian context which so heavily values marriage for women. By overcoming this societal expectation, the mentee author was able to understand that her personal value can encompass a wider range of experiences, including working or continuing her education, thus providing her with the motivation to continue in a conservation career.

2.1.4 Provide long-term career advice and support

Motivation and willingness to work in conservation should be coupled by professional guidance to determine future goals and what steps are needed to achieve them, thus reducing mentee confusion about their career trajectories. Anecdotal evidence about the significance of having a woman role model being an important factor for attracting and retaining women in the forestry sector has also been recognized in prior studies (Larasatie et al., 2020; Thornton et al., 2020). Mentors can share resources on the wide variety of careers in conservation, or introduce mentees to other conservationists with different perspectives or narratives that more closely align with the mentees' needs. By creating a better fundamental understanding of what a career in conservation is, mentees can then work together with mentors more effectively to create her own path. The process of forming a clear vision for the future can take years and involve a lot of trial and error and reflection exercises; therefore, mentors need to be committed to providing long-term support for the mentee.

Currently, the mentorship provided by Global North scientists is often restricted to the field season (less than three months), and often only entails the data collection step without further mentoring in the scientific process. Based on our past discussions with Indonesian students, they often have only been invited to participate in data entry and subsequently added to the acknowledgements, but have not been given an opportunity to contribute to the scientific process and become a co-author. Even when students indirectly suggested they had an interest in further engaging with the research topic, the potential mentor did not follow up with them. The lack of guidance for these early-career women scientists led to a lack of clarity of how the learned experience contributed to their overall career plan and missed an opportunity for them to take that experience to inform further development of personal research interests.

Similarly, prior to being mentored directly, the mentee author lacked clarity in her career plan, had few opportunities to develop personal research interests, and had a lack of direction on how to pursue existing research interests. Through working with the foreign mentor, the mentee developed more focused ideas for undergraduate research and conservation projects and was able to articulate them as a framework for her graduate studies and subsequent research interests. The mentee found the exercises useful and modified them into capacity building activities that were delivered throughout Indonesia through Tambora Muda, a national network of young Indonesian conservationists founded by the mentee and her undergraduate peer study group. Training encompassed technical workshops and professional development to build lasting careers in conservation. In about five years, over 1,500 students and early career conservationists joined seminars, intensive training activities (e.g., Conservation Camp), discussions, and small-scale conservation projects hosted by Tambora Muda. Many alumni of the program continue to work in research and conservation, and a few have even started their own conservation programs.

Through working with the domestic mentor, the mentee author learned how to address challenges that she and other women in Indonesia commonly faced, from being derided as an unmarried Indonesian woman past the age of 25, to being treated as being less competent or lacking in expertise because of her gender or lacking a higher-education degree, despite having 20 years of practical on-the-ground experience in conservation proving otherwise. The benefits of the mentor-mentee relationship can be bidirectional—the mentee learned how to be resilient through the mentor's advising, and the attentiveness and respect the mentee showed to the mentor helped the mentor gain confidence in her own abilities as well. The strength of this relationship led to the founding of a conservation NGO that is jointly led by the mentor-mentee pair (PROGRES, or in English, Sulawesi Regional Ecological Conservation Initiative, [https://progressulawesi.id/]), allowing for propagation of a collaborative and emotionally intelligent mindset towards doing conservation that is inclusive of local community concerns. Learning how to navigate a career in conservation and address challenges together built mentee self-confidence and certainty about her career choices. These feelings of certainty and self-efficacy reinforces personal determination to help in retention of women students and early-career scientists and practitioners.

2.2 Mentorship needs to increase technical competencies and equip early career-scientists with the necessary skills to advance in their careers, not just contribute to mentor projects

2.2.1 Provide higher quality feedback on writing

In past conversations with other mentees, mentors, and potential mentors (both foreign and domestic collaborators), English fluency of Global South scientists is often cited as the

main barrier to advancing mentee careers but is still left unaddressed in most training plans. In Indonesia, English language learning is more accessible in well-resourced, more developed areas (*i.e.* the cities and the western part of the country) (Liem and Marcella, 2021). Consequently, students at top universities in Java and or Sumatra can speak English more fluently than in other parts of Indonesia, allowing them to apply for more training activities, which are offered mainly only in English. Being unable to speak English fluently should not be a barrier to being able to do science. It highlights the need for foreign mentors to work more with domestic mentors such that training for scientific work can be delivered in a manner that is able to reach a larger trainee audience who live in biodiversity hotspots. For example, Tambora Muda aimed to address this linguistic and geographic barrier by choosing to conduct professional development and training activities in Indonesian instead of English, holding the event in eastern Indonesia (*e.g.*, Conservation Camp in Sulawesi), and actively recruiting for participants from historically under-served areas (*e.g.* Maluku).

In our past discussions with other Indonesian students, reading more scientific papers to increase exposure to English and gain more familiarity with scientific writing was often suggested as a way to improve the mentee's writing skills. More frequent exposure to English is an important aspect of improving English proficiency (Sulistiyo, 2016). But students in the Global South often cannot even access subscriptions to scientific journals. Thus, the support that mentors can provide can be as simple as responding to paper requests from students or sending papers that may interest them to ensure consistent exposure to scientific writing in English, which ultimately helps the mentee increase her self-confidence for facing an international audience. The potential downstream impact of increased confidence is increased likelihood that she will join training workshops available only in English, attend and present at scientific conferences, write scientific publications, and apply for jobs or graduate school programs.

For mentees to be able to be independent scientists in the future, addressing the language barrier and a mentee's English skill level requires commitment from the mentor to provide more detailed feedback and resources. The mentors are not being asked to continuously teach their mentees English, but to provide higher quality forms of support and feedback, especially at earlier career stages, to address the mentee's writing skills like one would for other technical skills. Written feedback should be accompanied by a meeting specifically to go over the comments and ensure that mentees understand why the mentor made those edits or comments. By having a fundamental understanding of where and why errors may occur, mentees can practice on their own to improve. This also promotes an activity where the mentor and mentee will have more face time—either virtual or physical—together to help build mutual understanding and trust. In our experience, this method was able to improve the mentee author's writing over time since she could reference the detailed comments from the foreign mentor later on as well. By better understanding why these changes were made, the fundamental differences in syntax between the mentee's native language and English were internalized and created a stronger core command of scientific writing, reducing the need for these types of corrections or comments in the long-term.

2.2.2 Diversify the types of trainings the mentee has access to

Suggestions from past studies revolved around providing structured training to fill in skill gaps in critical competencies, such as in project management, scientific communication, interpersonal communication, and leadership (Barlow et al., 2015; Sanders et al., 2021). Particularly in Southeast Asia, both formal and informal professional development programs are rare in many disciplines (*e.g.* Phan et al., 2020), and direct mentorship may be the only way to provide training. These improved competencies would help evolve the mentor-mentee relationship into a more equal collaboration over time. Through finding a variety of mentors in both formal and informal settings, a mentee can learn about a broader range of available training activities, which can expose them to other career options in conservation.

Despite mentorship being deemed an essential complement to training programs to equip early-career scientists for future success (Sterling et al., 2021; Chao et al., 2022), we were often told by Indonesian students that they are unfamiliar with what "mentorship" entails. If a limited number of mentors are available, students may agree to work on advisor projects but never gain the ability to have one-on-one career-oriented conversations with the advisor, much less lead their own research projects and develop their own interests. When the mentee author started her career in conservation in 2012, there were not many training opportunities available. Through direct mentorship from the foreign mentor, the mentee was able to identify specific tasks she needed help with and learned both basic skills, such as how to write a cold-call email in English, to more complex skills, such as how to design her own field-based research. The critical technical skills she gained from direct mentorship in statistical analyses using R, research design, and scientific writing all contributed to her ability to resolve multifaceted project challenges, oversee her own research teams, and get a job.

Furthermore, having multiple mentors who come from different professional backgrounds can be beneficial when the mentor-mentee relationship evolves to encompass different interests (Stonewater et al., 1990), resulting in a need for skill training that a single mentor may not be able to provide. For example, the mentee author wanted to switch her career goals from a pure ecologist to a conservation scientist after becoming more involved with grassroots conservation action in Sulawesi. However, the primary focus of the foreign mentor's work is on systematics and biogeography. While conducting fieldwork, she met the domestic mentor, whose 20 years of practical conservation

experience aligned with what she needed at that time to expand her experience with community-based conservation, science education, and interpersonal communication skills. Furthermore, because the domestic mentor was able to provide more support to the mentee, it reduced the burden of work for the foreign mentor, which ultimately encouraged more participation in the conservation project from the foreign mentor. In having both mentors more involved, the mentee now has more opportunities to learn critical skills directly from either mentor.

2.2.3 Help mentees put together competitive packages for training, grant, or scholarship applications

Admittance to discipline-specific training in conservation is often competitive (Chao et al., 2022), as trainers usually have a limited number of spots in order to retain a low trainer-to-participant ratio to maintain higher training quality. In the many training advertisements the authors have seen in the past ten years, applicants are often asked to explain why they deserve the spot and how the training contributes to their career plans. In Southeast Asia, not only this is a rather uncomfortable task for the mentees, as written and formal self-promotion is not common, but women often downplay their own level of competence (Stonewater et al., 1990; Jones and Solomon, 2019; Poor et al., 2021). Mentees often require the support of mentors to understand how to present themselves and create a competitive package for pursuing other training opportunities. If a mentor were to guide the mentee in a self-reflection exercise as part of preparing personal statements, this can both help the mentee with a tangible need and be a way to strengthen mentor-mentee bonds. This exercise also acts as an opportunity for mentees to visualize a career trajectory and have someone to discuss their own vision for their futures.

Workshop applications are a good place for proposal development training to start. While applications to workshops are competitive, they have lower stakes and are shorter writing assignments compared to scholarship or graduate school applications, making it possible for this to become an opportunity to improve linguistic capabilities in a lower pressure situation. Even if mentees are applying to opportunities that do not fully align with mentor interests, mentors should still provide support to their mentees, such as through assistance with overcoming bureaucratic impediments or reviewing the mentees' applications. With the Indonesian students we have spoken to, they felt foreign mentors are only interested in them if it relates to the mentor's project or they were not clear that assistance of this sort was even available. Mentors therefore need to be explicit in letting mentees know that they are willing to offer a broader scope of assistance to help mentees reach their career goals and demonstrate that they are interested in the development of the mentee as an independent scientist, not just as their research assistant.

Mentors who understand their mentees better can better highlight the mentee's strengths and help the mentee stand out in a pool of applicants. Formal training activities often require at least one recommendation letter from a current or past supervisor, which may not exist outside of the classroom for many students. In our combined experience across multiple universities throughout the Indonesian archipelago, many Indonesian faculty members do not consider providing references for students as part of their pedagogical responsibilities. Faculty members will either ask the student to write a draft reference, which they will later sign, or use a standardized reference with generic information across students. For example, the foreign mentor has read two reference letters during the same review cycle for two Indonesian students from the same department and cohort that were exactly the same. In multiple references the foreign mentor has reviewed, the reference may be only a single sentence with some generic positive statement about the mentee's academic performance. The inability to provide a more detailed reference for the student stems from the minimal amount of interactions faculty with the student outside the classroom. Because the social relationships between advisor and student are very imbalanced, there is often a lack of respect for a student's time and needs from the advisor. Rarely are students given more attention to discuss career plans, even for those who are enthusiastic, top academic performers. The combination of students being unaware of the type of content to expect from a more thorough reference and minimal communication with their advisors results in uninformative references and, most likely, a rejection of their application. More communication between the mentor and mentee also allows for strategizing of what needs to be stated in the reference to support the rest of the application. These conversations result in greater clarity for both mentors and mentees about the mentees' strengths and weaknesses.

2.2.4 Make connections to the broader conservation network, both domestic and international

Mentorship can be an open gate for mentors and mentees to meet other similarly minded scientists and practitioners. This is an opportunity for both parties to expand their professional networks and strengthen woman-to-woman support systems. For example, the foreign mentor introduced the mentee to the broader international research and conservation community, which allowed her to meet many new collaborators, potential advisors, and potential sponsors. The mentee in turn introduced the foreign mentor to other Indonesian students, scientists, and collaborators who shared similar research and conservation interests. The mentee also acted as the connective node between the foreign mentor and the domestic mentor, resulting in higher quality relationships being built with local community conservationists and nature enthusiasts, and increasing the audience and network size for sharing knowledge and expertise on conservation. The mentee's strong relationship with both mentors allowed for trust to be built quickly between foreign and domestic parties who previously were not associated in any other way. Together, they created a

well-connected, transboundary system for women to reinforce and champion one another for the betterment of conservation.

2.3 Mentorship creates future leaders in conservation

2.3.1 Be role models and lead by example

Leadership is recognized as one of the five major focal areas in conservation capacity development (Elliott et al., 2018). This is a skill that can be learned (Black et al., 2011; Bruyere, 2015) and mentors can be a crucial way to deliver this to young students (Bhatia and Amati, 2010; Porzecanski et al., 2022) through being an example through their own actions and priorities. Having a role model to help build mentee confidence and self-efficacy with regards to creating transformational change is the strongest predictor of successful conservation action (Jones and Solomon, 2019; Porzecanski et al., 2022). Therefore, mentorship is beneficial for an individual's professional development, as well as creating meaningful long-term contributions in conservation (Black et al., 2011). In our case, the combined experience of both mentors provided the mentee with a variety of situations to learn about leadership, team management, and establishing partnerships on their respective scales (international and domestic) and in a variety of settings. Having both theoretical knowledge and practical skills equipped the mentee to expand conservation programs across Sulawesi through PROGRES. More importantly, throughout the decade of mentorship, the emotional support that the mentors provided helped the mentee feel empowered and confident in leading her conservation research and work.

Views of gender roles in conservation have slowly improved and changed for the better (Poor et al., 2021). Existing women leaders in conservation in the Global South have largely been unrecognized as leaders to the wider community, and that is a problem that is only being corrected slowly in recent years through invitation of these women into more professional spaces and more attention being given to their work (*e.g.* Fauconnier et al., 2018 in water governance). External affirmation of these women as leaders by the conservation community can help overcome some cultural barriers that make them reluctant to recognize themselves as such. The growing accessibility of the internet and broad adaptation of social media increases the visibility of the work of other women scientists in recent years, providing a wider range of examples of careers as wildlife scientists and conservationists, and providing visual evidence that women are routinely leading and participating in the physical activities required for fieldwork. Over the past decade, we have repeatedly heard from Global South women scientists and practitioners that non-traditional media have been essential platforms for them to feel connected to a broader community, providing emotional support passively either through visual evidence on social media or hearing about similar experiences on podcasts. This increasing exposure to women at work inspires other women to follow a similar path. There is an audience of young women seeking out these role models, and if more senior women scientists in both the Global South and Global North fill gaps in representation and provide support to these budding women scientists, the pool of candidates to becoming future leaders in conservation increases significantly.

3 Conclusion

The recommendations we have made above are a necessary first step for improving the mentoring of women in the biodiversity hotspot of Indonesia but covers a slew of issues that are applicable to others in the Southeast Asia region, along with more broadly in the Global South. We recognize that our experiences throughout Southeast Asia may be similar to those faced by other women in other parts of the Global South and our recommendations may prove valuable to address similar issues or modified to fit more sit-specific situations internationally. While we have presented our decade-long mentorships as primarily anecdotal evidence of how to improve mentorship, the importance of these narratives should not be underestimated. We reiterate that there are so few woman-to-woman mentorships to draw from within Indonesian science where the relationship constitutes a true partnership, but it is an important one to understand if we are to create a more equitable and inclusive future. Again, the reflections and observations here are not just the experiences of the authors, but the cumulative frustrations we have heard from countless other Indonesian young women in biodiversity science who we have both trained, mentored, or studied with. We will lose another generation of women conservationists if we continue to use the lack of robust data as an excuse to do nothing. While women mentors from the Global South are currently relatively rare, their inclusion can be invaluable to mentees and to the field of conservation. As the number of Global South women conservationists slowly increase, we encourage them to reach out to be role models for the next generation.

The narratives we have presented here is, to our knowledge, one of the only ones in the literature that center around the mentee's experience. The mentee's experiences are not only valuable to scholarship on mentoring in the context of being a mentee, but her thoughts on what has made her successful is very applicable to her more recent development into a local conservation leader and mentor herself as well. In writing this paper, she also gained more insight as to why her mentors made the choices that they did to mentor her and allowed her to grow more into the next phase of her career as well. This type of narrative illustrating how a Global South scientist grew from a naïve mentee to skilled mentor is rare in the existing conservation capacity building literature, despite the high need

for them to better understand mentee perspectives, priorities, and pressures to find solutions for recruitment and retention for the betterment of conservation in biodiversity hotspots. There is a need for more voices from Global South mentees to be included in the conversation around mentorship and collaboration, as these have long-term consequences for many global biodiversity hotspots.

Improving outcomes for mentee careers requires that mentors—both men and women—empathize more with the struggles of their mentees and communicate better with one another. The most important recommendation we can make to any potential mentor is to improve their emotional intelligence and cross-cultural understanding such that they can provide the emotional support their mentees need. Particularly in the Global South, as mentors and leaders, we should do our utmost to advance others, not only offer assistance to those who can help our own endeavors. The exploitation of mentees from the Global South purely for mentor career advancement will result in them being subordinate to the mentor from the Global North, even in the future, making the development of truly equal peer partnerships for transboundary conservation unlikely. This type of exploitation can easily develop in societies like Indonesia where women are usually not given as many opportunities to add their viewpoints, and mentors must try to make a safe space where mentees feel that they can share their own concerns. Mentors need to remember that the success of their mentees is a reflection of their own success as mentors and celebrate mentees who become independent leaders. Over time, empowered women will inspire other women to work in conservation, creating an inclusive and diverse field of conservation to secure biodiversity into the future.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material. Further inquiries can be directed to the corresponding author.

Author contributions

S and SMT conceptualized the case study. All three authors listed have contributed substantially to the writing of this manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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