

Intentional, bold leadership for a modern, gender-balanced hydrospatial workforce

Authors

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Abstract

This Note joins the conversation of the IHO Empowering Women in Hydrography and Women in the Hydrospatial domain (Hains et al., 2022) in a broader sense, elevating key points and commonalities with the goal of contributing value by taking the position that the pursuit of Gender Balance is a Leadership issue – not a “Women” issue – that must be addressed to succeed as a 21st Century organization. Successful gender-balanced efforts are underway in the global Hydrospatial community, and these models can be leveraged as a communal map for progress in this realm. Lastly, this note offers a simple synthesis of expert perspectives on necessary leadership steps and strategies for achieving business or professional goals with a gender-balanced team.

1 Introduction

Gender diversity has been established as an area of focus for businesses and organizations for over a decade in response to statistics pointing to the need to address women’s representation (Wittenberg-Cox, 2014; Fig. 1). Recent research transforms this to more than a question of proportional representation; a 2022 study concludes that teams of scientists do more impactful and more innovative work when those teams are cognizant of diversity, and made of men *and* women in equal representation. However, while teamwork, female participation, and policies of inclusiveness in science are all on the rise, and gender-balanced research teams are proven to be more beneficial to outcomes, gender-diverse teams remain significantly underrepresented in scientific research (Yang et al., 2022).

These 2022 research results point to a potentially transformative way to think about gender balance as an essential ingredient to capturing human potential for innovation and problem solving. If gender balance is critical for innovation and impact at a team

level, it logically follows that gender-balancing can accelerate success for an entire organization and community, as well.

This argument reinforces other research on the effect of gender diversity in professional spaces, including recent Notes in The International Hydrographic Review (IHR). In “The Empowering Women in Hydrography Project: Fix Your Leaking Pipeline”, Bhatia et al. (2022) explored the various gaps in leadership, forms of discrimination in work cultures and other “unnecessary and arbitrary burdens to advance [women] in their careers” (Bhatia et al., 2022, p. 190) that drive women from developing and furthering their careers at various pivotal points in the professional advancement pipeline. One premise of the leaking pipeline that this note incorporates, is that the “Leaking Pipeline is a leadership problem, not a “women” problem. Women cannot fix the Leaking Pipeline or the challenges listed [...] on their own” (Bhatia et al., 2022).

The Leaking Pipeline Note uses research and anonymized personal accounts to highlight the various

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stages where women choose to escape-by-departure the disadvantages and discrimination of the pipeline, resulting in the substantial diminution of the presence and therefore contribution, expertise and innovation from women with STEM (Science, Technology, Engineering and Mathematics) backgrounds (Fig. 2). These discriminatory phenomena causing the pipeline to narrow and female talent to leave the field include gender biases in recruiting and promoting; self-fulfilling cycles of insufficient feedback and mentoring; emphasis of potential over performance; the Motherhood Penalty; and biases against women behaving in stereotypically masculine ways. The net effect of these combined problems is a steady attrition of women from the field.

When leaders take up the mantra of “Building 21st Century Organizations”, they lead the way to a broader understanding that achieving gender balance is about “optimizing and modernizing our organizations”.

Avivah Wittenberg-Cox, 3rd IHO General Assembly, May 2023

The Leaking Pipeline Note focused on how gender biases and discrimination affected women and their levels of participation in the Hydrospatial industry. This Note focuses on how the steady attrition of women from the Hydrospatial workforce affects the organizations in the field – intergovernmental organizations such as the IHO, government Hydrographic Offices (HOs), academic institutions, nonprofit institutions, and private sector businesses. The authors aim to (i) highlight the business implications, inspiration, and strategies to achieve organizational Gender Balance and (ii) elevate the natural alignment of the Hydrospatial domain’s most relevant problems with strategies for Gender Balanced teams. Achieving organizational Gender Balance would be a step towards practically addressing the broader discourse of diversity and inclusion and the United Nations Sustainable Development Goal 5 – Gender Equality.

2 Gender Balance Makes Good Business Sense

In order to innovate and thrive in the face of modern challenges, 21st Century business leaders must envision and establish mission, vision and implementation strategies that remove barriers to gender balance throughout an organization and particularly in senior leadership roles so that valuable perspective, experience and skills are included, cultivated and elevated. This is the message of Avivah Wittenberg-Cox, an established and prolific expert on Gender and Generational Balance, who was invited to speak at the IHO General Assembly in May 2023. Wittenberg-Cox’s message from the main stage of the 3rd Assembly argued that the necessary shift from the

view that “gender imbalance is a women’s problem” to the more modern view that “gender imbalance is a leadership challenge” and adds caution against shifting the “fixing” from women to men, as well (Wittenberg-Cox, 2014).

As Wittenberg-Cox described in a 2014 article titled “Gender Balance is Hard, but It’s Not Complicated” organizations and business have accepted that gender imbalances are a business problem and leadership issue. This shifts the emphasis from arguing that there is an issue worth solving to designing that solution, which she argues has 3 non-negotiable elements (Wittenberg-Cox, 2014):

1. Lead the Charge – Organizational leadership needs to take responsibility for gender equity in their workplace and commit to addressing structural barriers that cause inequitable treatment.
2. Explain Why It Matters – Obtain factual information on how inequity in the workplace is damaging the organization’s overall mission, and show that information to stakeholders.
3. Build Skills – Equitable workplaces do not magically appear. Building and keeping an equitable workplace requires having the skill sets to recognize how inequities form and to address them in meaningful ways.

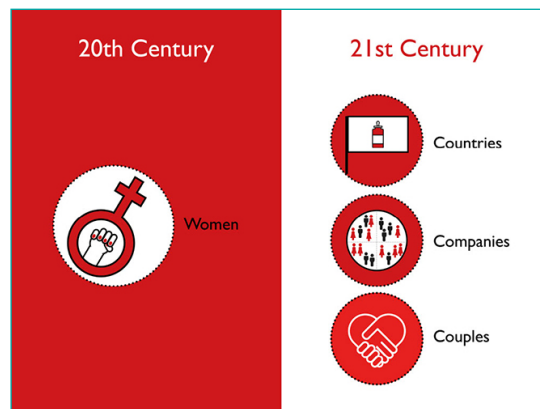


Fig. 1 Avivah Wittenberg-Cox presentation slide, 3rd IHO Assembly, May 2023.

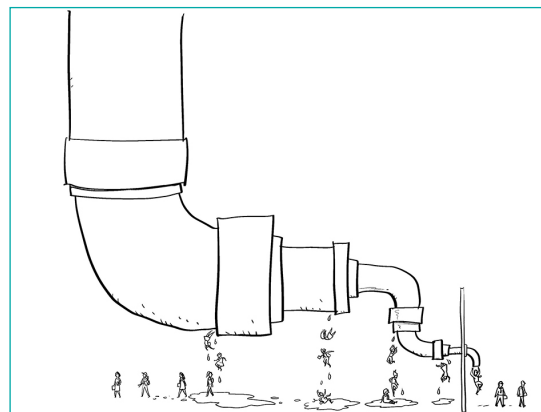


Fig. 2 The Leaking Pipeline. Artist Credit: Gareth Hinds as included by Bhatia et al. (2022).

These three elements together are synergistic – if executed together, the overall result is stronger than any one effort can be on its own. All three steps – lead the charge; explain why it matters; build skills – must be substantially present and none skipped in order to make change to entrenched business practices that may embody gender biases or other traits of the Leaking Pipeline.

As with the Leaking Pipeline Note, the authors of this Note will use a real-life case study to illuminate how gender bias causes problems within organizations that drive female attrition while hindering the success of the organization's mission as a whole. Unlike the Leaking Pipeline Note, however, the case study here will not be anonymized: instead, we will use a recent report on inequitable assignment of laboratory space, office space, and storage space at the Scripps Institute of Oceanography published in January 2023 (UC, 2023). Per the report, female faculty members were assigned disproportionately less office space, less lab space, and fewer on-site storage units than male faculty members, and the disparity “cannot be explained away on the basis of time at the institution, funding expenditures, or group size... (and) also cannot be attributed to differences in the kind of research carried out by women versus men”.

For the Ad Hoc Task Force at Scripps, it is vitally important to recognize that nobody in Scripps' leadership set out to intentionally discriminate against women faculty. There is no evidence in the report of systemic bad faith or bad behavior on the part of Scripps leadership. What the Scripps task force did find is a lack of institutional leadership, lack of communication pathways, lack of a unified space allocation program, and lack of fair, transparent, and well-understood policies which created a *de facto* discriminatory environment for its women employees.

Exploring the Scripps response to their own unintentional discriminatory environment is a useful exercise for IHO leadership in how to support its own goals of achieving a diverse, equitable membership and delegate pool.

#1 Lead the Charge

A simple three-word mandate – Lead the Charge – conveys a challenging and deceptively painful starting point. Leading the charge starts with vulnerability: take responsibility. Where has your leadership fallen short? What is the status of gender balance in your organization? You cannot address a problem until you understand the severity of it. As Bhatia et al. (2022) recommend to the IHO in the final portion of their note that a survey be conducted across hydrographic offices to harvest the data on women in different levels of seniority, so does Wittenberg-Cox (2014) require leaders to make the truth transparent from the highest roles, “Whatever the exact language, the CEO and the core of the company has to take responsibility [...] It takes courage and years of proactive, public pushing from the top to make gender balance

happen. You get what you envision”. Awareness and acknowledgment of an imbalance is fundamental in driving change. While cultural sensitivity and societal expectations can play a significant role, at least within an organization, senior leadership of an organization are well positioned to make changes and create momentum for change down the levels.

A key part of leading the charge is understanding who has power and what type of power it is. Both men and women could be a change leader in this regard. However, placing the onus of correcting systemic problems on the people suffering most from them, such as expecting women in an organization to fix systemic gender discrimination problems in hiring, workplace management, and promotion, is a frustrating and disheartening exercise in futility. Both direct power – such as who has purchasing authority – and indirect power – such as influence in workplace networks – are not evenly distributed, and expecting a person with little direct or indirect power to affect longstanding change on their own is not helpful. In the case of the Scripps report, the investigation team found that early-career research and teaching staff were highly likely to report difficulty in negotiating for their own office space. Early-career professionals do not have the protections afforded to tenured faculty, and early-career women (who face gender biases for acting in a stereotypically masculine-coded way) reported particular problems in negotiating for space. By contrast, men (who were not acting counter to expected gender roles) and long-term faculty who have existing workplace networks and, in some cases, direct power to allocate space were less likely to report perceived bias. The Scripps Ad Hoc Task Force specifically calls this out in their findings:

An important priority for such policy design, given the inherent power imbalance in space assignment, should be to minimize the need for “hard negotiation” in space assignment, as such negotiation inherently places those with less power at a disadvantage.

Ad Hoc Task Force on Space Allocation

By putting the responsibility for change on the shoulders of people who have both power and authority – organizational management – the effort to make systemic changes is much more likely to be successful.

#2 Explain why it matters

Like any business initiative, leaders need to have the facts straight on why gender balance and gender equity matter to the bottom line or achievement and then explain those facts to management and line workers passionately, convincingly, and repeatedly. While using the language of ethics and social responsibility alone is enough to convince a certain percentage of an organization's workforce to accept

changes for gender equity, others will respond better to language focused on business outcomes and success of the organization's business goals. Ethical organizational behavior and good business outcomes are not mutually exclusive, so using both conceptual frameworks to address workforce concerns is a valid technique.

Here we provide two examples of "explaining why it matters", one with a very straightforward and obvious business justification, and one where the underlying results are more subtle.

In a previous Note regarding women's safety at sea (Stewart et al., 2021), the authors discuss how gender bias in the provision of workplace personal protective equipment – specifically, lack of small-sized aviation survival suits for women working in offshore oil and gas installations – leads directly to women being forbidden to board helicopters on their scheduled crew change day. Not only does this problem directly harm the women in question, who were prohibited from going to their job site, it financially harms the company employing both on-signing and off-signing crew, who must pay for rescheduled transportation, meals, and lodging while waiting on correctly sized suits to be provided.

A reactionary policy of prohibiting women from working on these installations entirely will not fix the problem of not having the correct size survival suits, and this is obvious with only a cursory amount of examination. First, not all women are small, and this policy would exclude women whose survival suits fit correctly for no good reason. Second, small-bodied men also work on offshore installations, particularly seafarers from the Philippines, Malaysia, and Indonesia, who form a large part of the global maritime workforce, and they may not have correctly fitting survival suits either – so a blanket ban on female participation will not solve that problem. Finally, these small-bodied women were hired for a reason – *because they had the necessary skills for the job* – and the reactionary solution of barring women from the offshore installations may very well mean that nobody is available to do those jobs at all. Buying correctly fitting suits has a substantially lower cost in money and in time than advertising new positions, interviewing people, onboarding new staff, paying for any necessary training or certifications, and training new hires. The smart business decision of buying survival suits in the correct size also happens to be fairer and more equitable and supports a gender diverse environment.

At Scripps, explaining the business rationale is more challenging due to the systemic and nuanced nature of the Task Force's findings. Although the reasons for women facing inequitable burdens were subtle and more complex, the *de facto* discriminatory environment nevertheless led to negative outcomes for the institution itself:

- Without sufficient lab space, researchers *are less likely to be awarded grant funding*, or less likely to be awarded adequate grant funding for their work.

- If women researchers cannot get adequate grant funding, *the institution does not recoup monetary costs* related to their work (facilities, equipment, materials, transportation, etc.).
- Women researchers who are allocated less space, have smaller grant awards, and lower access to collaboration (such as by having team members dispersed across a campus), are more likely to have lower publication rates relative to their less-burdened peers and are thus more likely to leave academia through the Leaking Pipeline (Jebesen et al., 2022), which means the institution has a *reduced return on its investment*.
- People from underrepresented groups, including women and minoritized individuals, are more likely to create innovative scientific research pathways or solutions than majority individuals (Hofstra et al., 2020), meaning that an institution with a discriminatory environment where women leave via the Leaking Pipeline is *less likely to achieve patents or intellectual property protections* (and thus income!) on novel scientific advances.
- Organizations with a documented track record of discriminatory behavior may *suffer reputational damage*, deterring talented prospective faculty from applying or more senior faculty from staying.

From a cash flow perspective, which matters even for a non-profit research institution (facilities, payroll, equipment, and aquariums for studying marine life all cost money), tolerating a workplace environment that simultaneously does not bring in all possible income while not recouping costs is a poor business decision. From the perspective of seeking institutional excellence, tolerating a workplace environment that arbitrarily puts a ceiling on its own success or deters potential top talent from joining in the first place does not make rational sense. Again, while it will require more work from leadership, the better business solution is also the more equitable and ethical solution.

#3 Build Skills

Once the mission imperative of gender balance has been established and championed by leadership, and the rationale has been internalized throughout the organization or community, the next step is to build capacity within management of the organization (Fig. 3). Again, this starts with understanding the nature and status of gender balance in the company and should also include education on gender bias, differences and preferences of men and women as compared to stereotypes, and the penalties often experienced for behaving outside of stereotypes (Wittenberg-Cox, 2014).

Aligning this skill-building with step 2, or *why it matters*, is vital to the transformation sought here. If gender balance 'training' builds capacity for seeing new opportunities or addressing previous blind spots (e.g., internally, with clients, in product design, etc.), participants can understand their active role in and the impacts of successful gender balance.

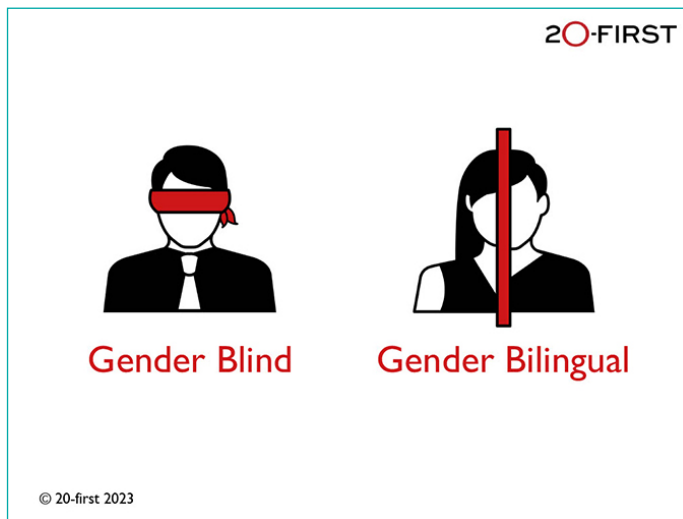


Fig. 3 Optimizing the 21st century organizations means developing gender bilingualism (Wittenberg-Cox, presentation slides).

Using the two examples in the previous section, and with an understanding of the role of leadership and of who has power in an organization, we can see the expected level of difficulty and skill-building required to make meaningful changes directly reflected in the work organizational leadership and membership must do to create those desired changes. Informing a safety manager that the organization is losing money because of a lack of survival suits in a wide range of sizes, and requiring that person to find and purchase new survival suits, does not require the organization to create any new roles, create any new policies, hire new staff, or begin the long process of changing team behavior. The safety manager already has the power and authority to purchase personal protective equipment, and the cost of purchasing new aviation immersion suits is offset by lowering the additional travel expenses for field personnel when one person was prohibited from boarding the crew-change aircraft. The new skill sets required are learning how to proactively assess safety equipment for gender-specific challenges and finding suitable sources for acceptable safety equipment.

Deeper-rooted problems require deeper breadth and depth of skills to address. The Scripps Ad-Hoc Task Force found systemic policy failures at multiple levels of the Scripps organization. Different divisions had the authority to make space allocation decisions for different people, but these people did not have clear roles or communication checkpoints. Junior researchers, without the power or authority of more senior people, were required to negotiate for space themselves, putting them at a disadvantage. Existing space allocation policies relied heavily on historically-based practices that favored men, and retired or emeritus faculty (who are mostly male) are allocated a disproportionate amount of floor space relative to active faculty. Removing these systemic barriers to

women will take time, and a good part of that time will be finding out where skill gaps (such as interdepartmental communication) continue to exist and resolving them.

The process of addressing systemic discrimination (intentional or unintentional) in an organization is iterative, not a single-point-in-time event. In the example related to safety, once an organization discovers that it is purchasing unsuitable personal protective equipment for its members, after purchasing new aviation survival suits, leadership can review other safety policies for gender-awareness and adequacy. In the Scripps report, the Ad Hoc Task Force noted that if an unintentionally discriminatory environment existed in workspace allocation, it was likely to exist in other places, requiring leadership attention. The Task Force recommended that Scripps leadership start the cycle of Take Charge → Explain Why It Matters → Build Skills for other “possible gender inequities beyond space” (UC, 2023).

3 Leveraging the IHO’s Leadership Capability for the Future

The end goal of the Empowering Women in Hydrography Project is not to simply elevate women for its own sake. Beyond the token representation of women and achieving set targets of female headcount, it is to provide the opportunity for fair recognition of all persons in Hydrographic fields, including women and taking advantage of their unique perspectives and carefully-cultivated talents in doing so, effectively elevate Hydrography as a profession, elevate the IHO, and elevate the missions of HOs, academic institutions, and for-profit enterprises. It is clear from observing its actions that the IHO has embarked upon a leadership campaign to pursue gender balance. IHO staff invited Ms. Avivah Wittenberg-Cox to make a keynote speech to the General Assembly on the power of building gender-diverse workforces. The Empowering Women in Hydrography Project is now an Action of the United Nations Ocean Decade.

Beginning with (Biron & Flier, 2021), IHR has been a forum for women Hydrographers to publish and to document this important issue, its innate challenges and facts. This forum and its contributors act as an informal version of the Ad Hoc Task Committee assembled by the Scripps Institute of Oceanography mentioned previously. The authors of these Notes have described the challenges that women face, offered case studies and examples on how to help women thrive, detailed where critical data gaps exist, explored how structural inequities in the Hydrospace workforce develop and persist, and of and now, with this Note, have described how organizations thrive when they follow good business practices that cultivate women’s talents and skills. We have provided this information to the IHO to *help its leadership explain why* creating gender diverse Hydrospace workforces matter and how to *build gender-aware skill sets* for the future.

Although it is not a for-profit business enterprise, the IHO is an intergovernmental organization with an unquestionable *leadership* enterprise to be a world model in equity, diversity, inclusion and access. Following evidence-based, research-driven business leadership practices related to fostering equitable workforce development is good for the IHO, national HOs, and all nonprofit and for-profit organizations in the whole Hydrospace domain. The IHO and greater Hydrospace community are likewise unanimously invested in finding the Hydrographers of the Future, and pursuing gender balance is part of that mission. We therefore suggest that the IHO considers and Member State representatives lead by example and thereby help build gender diversity, equity, and inclusion by considering and undertaking the following goals:

1. Plenary panels at IHO-sponsored events have at least one woman on the panel. We also recommend that panel membership be reviewed to ensure that panelists are from different regions and ethnic groups.
2. Member States send gender-balanced representation to regional and global meetings, with a target of at least 30 % by 2030 (with a goal of 50 % by 2035) of delegates to the IHO Council are women. Setting and achieving benchmarks for gender balance will plug holes in the Leaking Pipeline, meaning that more female hydrographers are available to create higher-performing, gender-diverse teams.
3. Committees or Working Groups formed by or at the behest of the IHO include at least one woman for every four men by 2025 and one woman for every three men by 2030. Again, these Committees and Working Groups should have leeway on how to execute that task.
4. Commission the design and inclusion of gender-focused coursework and education as a routine part of the Capacity Building mission, including during scheduled technical visits. Understanding the needs of people working for HOs and the technical needs of the HOs as organizations are not interchangeable. Building technical capacity and building a diverse workforce talent development pipeline are deeply intertwined activities.
5. Make remote/virtual meetings, hybrid in-person/remote meetings, and Virtual Teleconferencing common practice for all Committees, Working Groups and Task Force Teams as a means of increasing female and otherwise diverse participation:
 - Even at senior levels, women are likelier than men to have care work burdens (such as caring for elders). Reducing the amount of mandatory travel reduces the burdens to potential women candidates and eases systemic barriers to their participation. It also provides men the opportunity to fulfill their parental duties, promoting a more balanced hydrographic community.
 - The cost of technology access should not be an issue. When telecommunication and bandwidth is possible, offering the proven existing platforms used for two years plus during the pandemic would suffice as a tool.
 - Holding virtual or hybrid meetings is a strategy to minimize bad-faith arguments against women's participation – if there are no travel costs for anyone, any attempts to portray gender-balanced meetings as too expensive will not survive scrutiny. This should not be interpreted as an excuse to have men attend hybrid meetings in person and women attend remotely.
 - We note that having hybrid in-person/virtual meetings is a viable strategy for overcoming barriers to participation from visa delays or inability to book visa interviews, a problem that disproportionately affects women from Low and Middle-Income Countries.
 - We also note that holding virtual meetings where possible encourages expanded participation from women representing low- and middle-income countries who face barriers for other reasons (cost, work burden, other non-visa travel limitations) and demonstrates opening, access and transparency of meetings. As explored in (Hofstra et al., 2020), increased diversity in organizations includes people of all backgrounds, not only women.

As the authors stated previously, these recommendations are evidence-based, and in this Note and others, the authors contributing to the IHR have provided information for the IHO leadership to explain why seeking gender diversity is important. As we seek these changes, we want to not only explain why these changes matter, but *show that they work*. These proposed actions have the desired effects of plugging holes in the "Leaking Pipeline", increasing women's participation and visibility in significant meetings or events, and in achieving higher performance by using gender-diverse teams, as Yang (2023) posits. If effective, these recommendations, largely related to providing women equal opportunities to be empowered, should someday not be requirements or mandated targets, but an intuitive consideration for all and objective evaluation of individuals in an inclusive sector.

Direct intervention via organizational policy changes to encourage or require women's participation in international governing bodies is not new, and is in fact a proven method of increasing women's participation in very public, visible, and meaningful ways. The International Olympic Committee (IOC) has shown this type of leadership, encouraging all National Olympic Committees to have one male and one female athlete jointly carry their flag. IOC added this near-mandate to

its broad efforts at gender balance in the Japan 2020 games, which boasted 49 % female athlete participation (IOC, 2021). The breadth and depth of success of the International Olympic Committee's deliberate, intentional policy change is illustrated by the stories of Hanieh Rostamian, an Iranian sports shooter, and of Esraa Khogali, a Sudanese rower, who were the first female flag-carriers for the Islamic Republic of Iran and the Republic of Sudan, respectively (TehranTimes, 2021; Fig. 4). If direct policy changes encouraging or requiring women's participation produce the desired outcome of more women participating in international sport, it is reasonable to enact similar direct policy interventions.

The evidence for making these changes is also present in the government and private sectors. Changes to national laws (or institutional bylaws, in the case of an organization like the IHO) are shown to not only increase women's participation, but to plug holes in the "Leaking Pipeline": Iceland, which has required certain levels of female participation at the directorship level since 2009, is the only European Union country to currently exceed 40 % women at the Non-Executive Director level (ISS, 2023). Private businesses such as the banking group BNP Paribas have likewise changed their corporate policies to require 35 % female membership in Europe, North America, Australia, New Zealand, and South Africa and 20 % in other regions, a 5 % increase over the previous requirement (BNP Paribas, 2023). There is abundant evidence for the IHO to adopt a similar minimum participation requirement.



Fig. 4 Hanieh Rostamian, Iranian sports shooter and 2020 Olympian and Flag Bearer. Image credits: Tehran Times.

4 Conclusion

Who benefits from the IHO's Bold Leadership in support of Gender Balance of the international hydrographic and hydrosatial community? Who benefits from the simple result of having more interested, capable minds at the table and with balanced perspectives represented?

Quite simply, all of us. Each stakeholder – individual professionals, international hydrographic offices, industry partners, and organizational leadership – benefits and thus the community as a whole benefits, as it already is from the existing diversity of experience. The tasks ahead for the Hydrosatial Community are large (e.g. map the world's waters by the year 2030), and using the talents and creativity of women and the innovative power of diverse groups is a practical need. We need the most vibrant community we can assemble, so we can together attain the integrated, innovative and resourceful solutions required.

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