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About WCRP

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Impressum

This report was written by the WCRP Academy:

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1. Introduction

The World Climate Research Programme (WCRP) is a global initiative that coordinates and advances scientific research on climate-related fields, employing a multi-sectoral and interdisciplinary approach in examining both the natural and social systems that affect climate. Acknowledging the importance of capacity development, the WCRP Academy was established in 2021 to serve as its research training advisory and coordination arm. The Academy strives to equip current and future climate scientists with the knowledge, skills, and attributes required to tackle the world's most pressing and challenging climate research questions, particularly by acting as a hub that facilitates learning for stakeholders at all career levels.

Since its establishment, the Academy has grown and evolved to fulfill its mission in advancing capacity development within the sphere of climate science. In 2023, the Academy website was launched at the WCRP Open Science Conference, featuring an online catalogue that connects training providers with prospective training recipients. A year later, the Support Unit (SU) of the Academy was launched at the Manila Observatory, which was followed by the first in-person Scientific Steering Group (SSG) meeting. This gathering facilitated a rich discussion among SSG and SU members, consequently producing a roadmap for a long-term Future Leaders Programme, which is composed of three components.

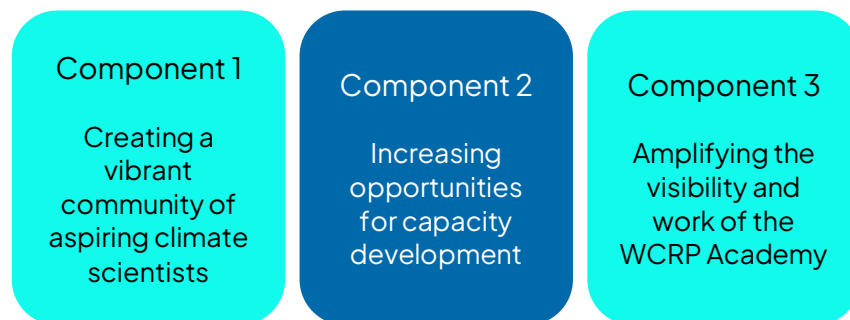


Figure 1. The three components of the Future Leaders Programme

Seeking to immediately follow through on the programme, the Academy conducted several key activities in 2025: relaunching the website with better functionalities and analytics (Component 1), presenting the Academy at events such as the Asia Oceania Geosciences Society (AOGS) Annual Meeting in Singapore and the Asia Pacific Adaptation Network (APAN) Forum in Bangkok (Component 3), and, most recently, organizing the Future Leaders Development Workshop in Cape Town, South Africa (Component 2).

This workshop, organized in a hybrid modality from September 12 to 13, 2025, gathered a diverse pool of capacity-building experts and climate scientists from around the

world, representing various fields, career stages, and backgrounds, to discuss and develop best practices on capacity and leadership development. This activity serves as a critical milestone in the Future Leaders Programme, allowing the Academy to reflexively assess and learn from the participants in formulating its leadership initiative. The workshop had the following objectives:

- To discuss and understand best practices on capacity and leadership development around the world, particularly for Global South and marginalized stakeholders;
- To acknowledge and elaborate on barriers that hinder scientific communities and partner stakeholders from being capacitated, especially for the Global South;
- To create a roadmap that would capacitate and empower young climate scientists to become climate scientist leaders;
- To design the WCRP Future Leaders Programme by learning from best practices from around the world;

Acknowledging the critical role of the Future Leaders Development Workshop in the short- and long-term plans of the Academy, this report seeks to synthesize the key insights and action points that emerged from the event.

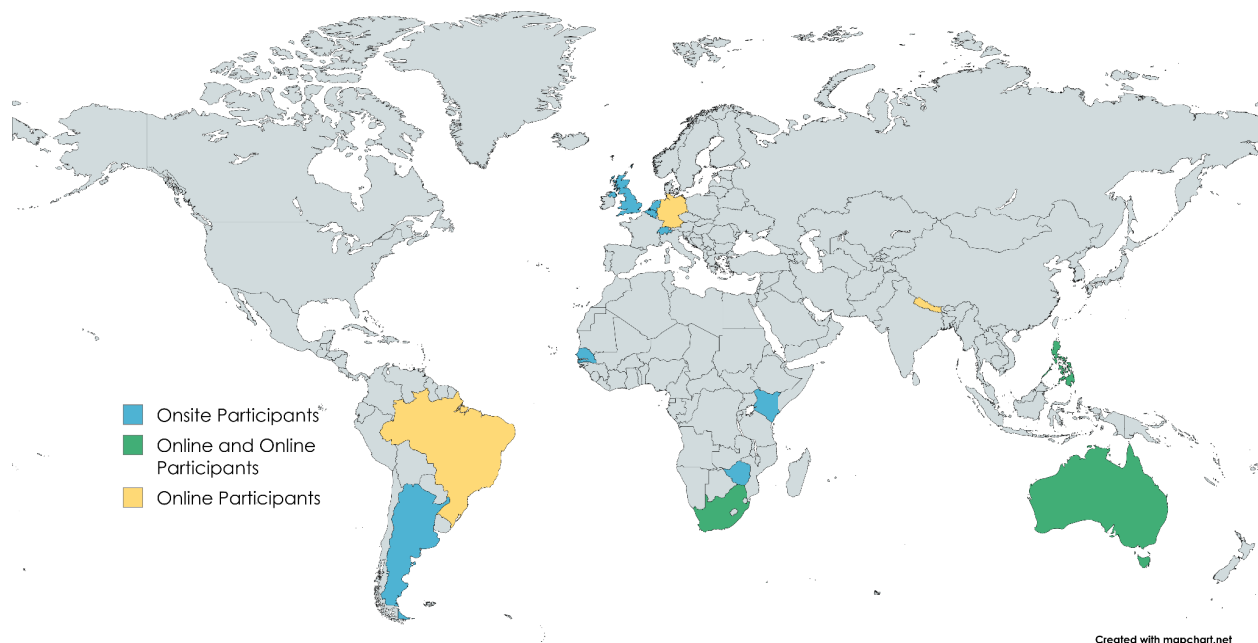


Figure 2. The geographical representation of the workshop participants based on their current university affiliation

2. Capacity Development around the World

The Academy strives to offer capacity development and training opportunities at a global level. Tapping into the expertise of academics and researchers from Africa, Asia,

Latin America, and the Global North, the Future Leaders Development Workshop commenced through a panel discussion that sought to learn from best practices across different regions. Each panelist gave a 'lightning' presentation, which was followed by an interactive exchange of ideas among panelists and participants to explore and discuss emerging themes.

2.1. Best Practices in Africa

Highlights from the presentation of Mzime Murisa, representing Africa as part of START International

Working in both Africa and Asia, START International seeks to provide capacity development opportunities that integrate science and society, particularly by targeting early- and mid-career researchers and practitioners. Drawing from her experiences, Mzime highlighted the importance of *ensuring sustained support and contextualizing opportunities* in training initiatives. Students and training recipients may be unable to finish capacity-building programmes if continuous support is not provided; thus, any leadership or skills development opportunity must ensure that support is given until participants are capacitated enough to translate, apply, and share their newly acquired skills. Examples of continuous support include rendering networking opportunities and maintaining ties with alumni of training programmes. On the other hand, contextualizing opportunities allows organizers to acknowledge the different realities and circumstances of their participants: in Africa, for example, researchers are also expected to carry out other administrative and teaching responsibilities, even if they are not necessarily trained and equipped to do so. Understanding the context must be accompanied by designing capacity-building programmes to be flexible and adaptive, which means that the content and delivery of these opportunities must be guided by funding priorities and the realities on the ground. This must be supplemented by considering intangible, yet impactful factors in designing and delivering training activities: proper communication, power dynamics, and social and emotional dimensions. Apart from these, Mzime noted that impact at the national, regional, and international scales must be central, and interdisciplinary, multidisciplinary, and transdisciplinary opportunities must be prioritized.

2.2. Best Practices in Asia

Highlights from the presentation of Nikki Carsi-Cruz, representing Asia as part of Ateneo de Manila University.

Nikki, elaborating on her capacity-building experiences in Asia as part of Ateneo de Manila University, introduced a framework that dissected actions into three tiers: *top-level* initiatives work at the global and national levels, focusing on policy direction, funding flows, and global frameworks; *middle-range* activities target institutions, public and private

agencies, and universities, looking into partnership management, organizational skills, and applied research; and *grassroots* action collaborate with local communities and citizens, assisting in local resilience and scientific literacy. Identifying the tier is crucial as it directs the content and delivery of training opportunities.

This tripartite framework was further elaborated by providing three best practices in the Asian context. The first describes the experiences in *Science Diplomacy Trainings*, which are organized by institutions such as the Association of Southeast Asian Nations (ASEAN) and the Asian Development Bank (ADB), among others. Bringing together scientific researchers and policymakers in one setting, this opportunity fosters collaboration by implementing a programme that includes an online component and an on-site exposure visit. The *Reverse Brain Drain Programmes* held in the Philippines, India, Korea, and Thailand were then presented. As Brain Drain is rooted in the extractivist principle of colonialism – that is, the transfer of resources from the periphery to the global centers – this initiative seeks to redirect the flow of knowledge back to the origin country. Successful scientists who are based overseas are encouraged to return to their country to capacitate their countrymen and share their knowledge. In the process of doing so, local knowledge systems simultaneously shape the returning scientist’s epistemology and practice, resulting in a reciprocal relationship. Finally, *Bottom-Up Knowledge Flows and Grassroots Mentoring* were presented. Using the case of Vandana Shiva’s Earth University as the model, this best practice locates the source of knowledge in the daily practices of communities and grassroots actors. There is a deliberate effort to put more value on the traditional agricultural practices and indigenous knowledge systems, amplifying these in the national, regional, and international spheres.

2.3. Best Practices in Latin America

Highlights from the presentation of Valentina Rabanal, representing Latin America as part of the Young Earth System Scientists (YESS) and the Servicio Meteorológico Nacional Argentina.

Drawing from her involvement in the WCRP-affiliated YESS Community and the National Meteorological Service of Argentina, Valentina delineated six types of capacity building activities she has encountered. Webinars are an effective and flexible tool to delve into specific topics or themes, while also showcasing tangible examples of research works and projects in an online modality. Learning Groups, on the other hand, facilitate a collaborative learning process among members of small groups, which are formed based on common research interests. For example, the YESS Community used this capacity-building method to delve into the topic of “Machine Learning applications to Earth System Science.” Over four months of collaboration, five learning groups with eight members each were formed to explore this topic. Apart from these, perspective papers are also used to synthesize key discussions and highlight specific experiences or projects. Colloquiums,

which typically gather participants in a more formal and institutional environment, can be effectively organized either as a one-day event or a series of small lectures to explore selected themes. On top of these, workshops such as the 2023 WCRP Early to Mid-Career Researchers (EMCR) Symposium in Rwanda and the 2024 GEWEX Early-Career Researchers (ECR) Workshop in Japan are effective in facilitating mutual learning among participants. Network expansion is another strength of this type of training. Finally, organizing side events and courses can allow organizations to create capacity-building opportunities from scratch, giving them the flexibility to develop well-curated programmes for specific skills and audiences. For example, a side event in the 2023 WCRP Open Science Conference focused on EMCR perspectives on South-North inequalities.

2.4. Best Practices from the United Kingdom

Highlights from the presentation of Rachel James, representing the Global North as part of the University of Bristol.

With a long-term objective of generating a deeper understanding of African climate models, LaunchPAD is an initiative that connects African expertise with modeling technologies and competencies based in the United Kingdom. Synthesizing insights from LaunchPAD and other affiliated programmes and activities, Rachel shared various lessons on capacity building that can be integrated into other training opportunities. In her experiences with LaunchPAD, creating a diverse core research team composed of researchers at different career stages and backgrounds effectively facilitates mutual learning and greater collaboration. In their case, including an African Early Career Researcher in the core research team greatly enhanced learning and development. Moreover, smooth team dynamics and open communication are formed through time and trust, which will surface lessons about the various circumstances of the team members. Given these, Rachel emphasized that any capacity-building opportunity must be empowering and collaborative, ensuring that confidence is built in all team members. Apart from highlighting these lessons on team dynamics, key insights on the content and modality of training initiatives were also discussed. It was shared that research training often overlooks components such as the peer review process – these areas, though undoubtedly invaluable, are often neglected in most learning spaces. Moreover, the potential of remote modality was also pointed out, noting that this can increase collaboration if time and funding are properly invested.

To conclude her presentation, Rachel narrated her experience in the UK Research and Innovation-organised Future Leaders Fellowships she attended. This programme included discussions on oft-overlooked themes such as *self-leadership*, *self-doubt* and *the inner critic*, and *values and purpose*, among several others. While these topics are often discounted in capacity building programmes, it was shared that these allowed participants to be reflexive and empathetic towards themselves and their peers, consequently

transforming how they view themselves and how they interact in their respective workplaces.

Reactions and Discussion Points
<ul style="list-style-type: none">● Recognising Barriers: Discussions on Gender, Generational, Cultural, and Geopolitical Gaps Capacity-building opportunities must be carefully constructed to ensure the effective delivery of technical and soft skills to their target audiences. Complementing this principle, the workshop participants discussed how there are barriers inflicted by gender, generational, cultural, and socio-spatial differences, which may not be acknowledged when designing training initiatives. It was narrated, for example, how women are more acknowledged and listened to in certain cultures, while there are regions where they are not treated fairly. There are also intergenerational and cultural gaps that may prevent a shared understanding of key issues, such as mental health awareness and gender sensitivity. Apart from these, expectations and standards from the Global North can be imposed on Global South actors, consequently contorting the value, experiences, and expertise of the latter group. Thus, it was emphasized how awareness of these barriers is a critical step to design equitable training programmes. Contextualizing and applying intersectionality would allow organizers to understand the various compounding barriers experienced by their participants.● Hacking the System: Discussions on Leveraging Existing Systems to Create Better Training Programmes Developing successful and effective capacity-building activities involves leveraging existing institutions, structures, and processes to create opportunities that address capacity gaps. Workshop participants believed that innovative training opportunities can be integrated and built into programmes and routines that already exist, consequently ensuring that these initiatives will remain sustainable in the long run. For instance, the gender gap in current activities can be addressed by introducing a quota system, which requires organizers to recruit according to a certain predetermined demographic profile that favors marginalized communities such as women. Moreover, integrating an incentivizing mechanism may also direct existing training opportunities toward a certain goal or outcome.

Box 1. Reactions and Discussion Points from the Panel Discussion on Best Practices on Capacity Development Around the World

3. Capacity Development within WCRP

The World Climate Research Programme, being composed of Core Projects, Lighthouse Activities, and other groups and communities, is active in providing diverse capacity development opportunities. This panel discussion convened representatives from four WCRP-affiliated organisations, eliciting from them useful insights on identifying, designing, and implementing training events within their respective groups and contexts.

This session provides an invaluable understanding of what it takes to organise events as part of the large WCRP network.



Figure 3. Panelists for the Panel Discussion on Best Practices on Capacity Development Around the World

3.1. Capacity Development in Fresh Eyes on CMIP

Highlights from the presentation of Cheikh Modou Noreyni Fall, a member of the Fresh Eyes on CMIP working group. This sub-group aims to highlight the perspectives and capacities of early career researchers and practitioners within the Coupled Model Intercomparison Project (CMIP) Core Project.

Drawing lessons from past and existing capacity development and research initiatives, Cheikh provided a roadmap on how organizations such as Fresh Eyes on CMIP could play a critical role in contributing new and innovative perspectives. To further enrich the WCRP experience, training opportunities could be embedded in existing projects and initiatives, rather than creating entirely new “add-ons” that may be detached from the current structure. Furthermore, as Fresh Eyes is an “example of how new voices can challenge assumptions and highlight overlooked opportunities,” facilitating intergenerational and inter-regional dialogues could generate insightful discourses that would allow ECRs to contribute. This is transformed into a two-way learning process: younger scientists receive hands-on experience in technical knowledge, while senior researchers hear new ideas and perspectives. In the case of Fresh Eyes on CMIP, the community is enabled to provide critical feedback and drive much-needed innovation. For example, African members are encouraged to highlight the unique circumstances faced by

communities and researchers, which are then acted upon by the community. Some initiatives they have contributed to include the Fresh Eyes on CMIP Around the World workshop and the Scenario Model Intercomparison Project for CMIP7 (ScenarioMIP-CMIP7).

3.2. Capacity Development in My Climate Risk

Highlights from the presentation of Shachi Truong, a member of the My Climate Risk (MCR) Lighthouse Activity. Working with institutions around the world, this LHA is composed of a worldwide network of MCR hubs that all aim to mainstream bottom-up approaches in understanding and responding to risk.

Focusing on the vast Hindukush Himalayan region, the Himalayan University Consortium serves as a My Climate Risk Hub that collaborates with more than 50 higher education institutions (HEIs) and 250 fellows, spread across eight countries. This MCR Hub recognises the rich biological and cultural diversity within the region, and also acknowledges how these communities, dependent on glaciers, are impacted by climate change. Putting forward an inter- and trans-disciplinary approach, Shachi shared that employing a cross-cutting perspective is critical in capacity building – agriculture, tourism, and the mountains, for example, must be treated as integrated spheres. Similarly, capacity-building initiatives must recognise intersectionality in the programme: each actor is uniquely situated in distinct intersections of race, class, gender, locality, and culture, among others. It is by acknowledging this positionality that one can be viewed as part of a collective, which leads to an even larger ecosystem that fosters mutual support and guidance, especially for junior members. This approach means that capacity building becomes a scaffolding that encourages learners to take steps to climb towards a certain goal.

Perspective is another important factor to be considered. How one reads shapes how one thinks, and capacity building provides an important opportunity to acknowledge various perspectives that may be undervalued. Wisdom, for example, is not only held by scientists; it is also present in community elders and grassroots actors whose knowledge is often discounted. Training programmes, then, must also factor in these matters in its design and implementation.

3.3. Capacity Development in APARC

Highlights from the presentation of Mohamadou Diallo, a member of the Atmospheric Processes And their Role in Climate (APARC) Core Project. The links between atmospheric processes and climate variability are explored by this Core Project.

Being a well-established Core Project, various lessons can be derived from the experiences of the Atmospheric Processes And their Role in Climate (APARC) group. Moha acknowledged that while there are efforts to reflect inclusive representation in the

leadership of WCRP, more can be done in enhancing the partnership between Global South and North institutions and actors in capacity building. On this note, strategies must be crafted to limit brain drain in the academia, while simultaneously strengthening local research and innovation to reduce dependence on external interventions. Moha also reiterated that training opportunities must be responsive to the demands of their participants, particularly by covering *future skills*. Apart from shaping capacity building opportunities, ensuring that leadership is inclusive and diverse, and instilling the values of solidarity and resilience, are critical.

3.4. Capacity Development in the WCRP Secretariat

Highlights from the talk of Narelle Van Der Wel, a member of the WCRP Secretariat. The Secretariat functions to coordinate activities and initiatives of all Core Projects and Lighthouse Activities, providing critical support in maintaining day-to-day operations and establishing strategic oversight.

Representing the Secretariat, Narelle presented an overview of how WCRP has evolved in the past years, concluding that the Academy could play a critical role in building on capacity development successes. While WCRP has engaged with early-career researchers for some time, it has organically evolved into a larger effort to work with early-to mid-career researchers (EMCRs) at-large. Manifested in countless workshops for EMCRs and their inclusion in Scientific Steering Groups and Working Groups of different Core Projects and Lighthouse Activities, this engagement has been institutionalized and deeply embedded within WCRP. On this note, Narelle pointed out that WCRP has invested significantly in organizing workshops and capacity building opportunities. However, there remain gaps in ensuring that the training resources can be reused and in selecting a diverse pool of participants. For instance, in selecting “Global South representatives,” there is a tendency to invite a similar pool of individuals repeatedly, hindering other scholars and practitioners from accessing these capacity building opportunities. With this, investing in people, especially from the Global South, is seen to be an important step forward. This is a critical step as there is strong willingness within the WCRP network to amplify the inclusion of Global South in its structure and processes.

Synthesizing the above-mentioned points, the Academy is well situated to become a hub where networks can be maintained and expanded, training opportunities can be created and implemented, and barriers can be reduced and overcome. This can become a platform that integrates and coordinates different tracks and initiatives, especially when it comes to regional approaches and individual projects.

Reactions and Discussion Points
<ul style="list-style-type: none">● Innovating Capacity Development: Discussions on Democratizing Knowledge and Training

Opportunities

While mainstream knowledge systems and training opportunities only consider the formal scientific enterprise as the valid source of information, the workshop brought to light the importance of acknowledging local epistemologies and traditional wisdom. Doing so does not entail rejecting mainstream scientific knowledge, but rather involves uniting alternative epistemologies with modern research tools and methods. Moreover, the process of producing and sharing knowledge ought to be democratized by advancing co-production rather than instilling a unilateral flow of information. Capacity development becomes more horizontal, with various stakeholders acting as both givers and receivers of knowledge at the same time. Consequently, enriched collaboration and leadership emerge through this perspective.

Apart from these discussions on integrating local knowledge systems, capacity development can be innovated by introducing microcredentials into training programmes. This allows individuals to be properly certified whenever they complete a course, which consequently boosts their career. Moreover, responding to the concern that many training resources go to waste, it was suggested that optimizing online platforms can be an effective way to reuse content.

- Acknowledging the Gap: Discussions on the Complexity of WCRP

WCRP is a large and complex institution. Some participants shared that the bureaucracy within this massive body may hinder people from participating, given that involving oneself in this network may be daunting. For instance, it was acknowledged that countless acronyms are utilized within WCRP, making it difficult for new researchers and practitioners to be more involved. Moreover, the delineation of tasks may also be obscured or confusing, as the Terms of Reference (TORs) of various responsibilities can be unclear or intimidating. Thus, it was shared that some members and officers within WCRP find themselves not knowing what to do, or not being capacitated to do their tasks efficiently.

*Box 2. Reactions and Discussion Points from the Panel Discussion on
How can We Build on Successful Capacity Development Efforts to Enrich the WCRP Experience*

4. The Future Leaders Programme

Bringing together capacity-building and leadership experts from around the world, the Future Leaders Development Workshop was a tremendous opportunity to recalibrate and refine the WCRP Academy Future Leaders Programme. Integrating three invaluable components into one massive leadership initiative, the Future Leaders Programme promises to be an exciting opportunity that can transform leadership within the sphere of climate science. Thus, the Academy designed the workshop to allow participants to directly shape the leadership programme. Participants designed capacity-building initiatives for Day 1 and Future Leaders activities for Day 2.

4.1. Designing a Capacity-Building Initiative for WCRP: Ideas from the First Day

Group 1: Transcending the Siloes

The group recognized that various Core Projects and Lighthouse Activities within WCRP already offer numerous capacity-building opportunities. However, while each unit provides training recipients with reputable and innovative programmes, these are often

organised in siloes. The group proposed that these training opportunities, which are currently disconnected and scattered, can be organised systematically to make them more accessible to prospective participants. The Academy can play an important role in doing so.

Group 2: Institutionalizing Leadership Trainings

Highlighting the importance of inclusivity and proper leadership, the group proposed creating training programmes that tackle diversity microaggressions, inclusive leadership, and other similar topics that tackle critical issues within the work setting. It was suggested to mandate and institutionalize these as online and asynchronous modules, which can be curated by working with universities that already have existing learning packages. Moreover, it was explicitly mentioned that co-chairs of Core Projects and Lighthouse Activities, together with International Project Offices (IPOs), can also be given the opportunity to undertake training programmes on leadership and communication.

Group 3: Building Safe Spaces

While technical skills in climate-related fields are important topics, the group explained that soft skills are as critical within the context of WCRP. Apart from resources on the hard sciences, there must also be training programmes on other topics such as communication. Safe spaces must be created within the work environment, acknowledging that this would empower individuals and personnel. Apart from this, there can also be capacity-development programmes on how to be trainers or how to capacitate others - this would ensure that learnings can be passed on.



Figure 4. Workshop participants engaging in the Wheel of Power and Privilege Activities

4.2. Designing a Future Leaders Development Activity: Ideas from the Second Day

Group 1: Training the WCRP Leadership

It was suggested that, course materials on leadership capacity can be developed in 2026 by utilizing existing resources from institutions such as the United Nations. These could

be in the form of curated online modular sessions and would be made available to those in WCRP leadership roles. The following year, the Academy could implement a one-day leadership development programme aimed at Joint Scientific Committee (JSC) Members during the week where the annual JSC Session takes place. Administering a multifaceted leadership course, this should be designed to benefit JSC members who intend to renew their leadership position within WCRP. Apart from training senior leaders, the group also suggested running the same course with a group of ECRs to effectively obtain perspectives from both existing and emerging leaders, which will be instrumental in fostering better understanding between both groups. In terms of content, this leadership course can begin by evaluating the values of WCRP – *what does it mean to be part of WCRP?* – and ensuring that there is a common understanding of the identity and role of the community.

Group 2: Establishing a Tiered Leadership Programme and a Mentorship Initiative

The first proposal presented was a multi-tiered leadership programme that focuses on training ECRs. As an individual completes a certain set of modules as prerequisites, they gain access to higher tiers that explore other themes of being a leader as an early-career researcher. Moreover, completing each tier is meant to be done in cohorts, which functions as an opportunity for these participants to expand their network and build relationships as they are being capacitated.

The second activity discussed was a mentorship initiative that seeks to build a network of capacitated mentors to properly guide a cohort of mentees. An integral step to this activity is to organise mentorship workshops for prospective mentors, which will ensure that adequate support is provided to the mentees in the programme. This training will acknowledge diverse mentorship styles, while ensuring that the expectations and responsibilities of each mentor are clear. Upon building the capacity of these individuals, the Academy will gather both mentors and mentees in an in-person summit or conference, allowing them to interact with one another before prompting the mentees to select their desired mentor. Through this face-to-face component, both sides will be given the opportunity to organically build a connection with one another, rather than assigning mentors from a distance. Direct conversations are seen to be an important first step in establishing effective mentoring relationships. Ultimately, this mentorship programme seeks to build the capacity of the next generation of climate scientist leaders by facilitating direct mentorship by current leaders.

Group 3. Fostering Reflexivity through Targeted Training Types

The group recognised the utmost significance of starting with foundational competencies and values, particularly that of understanding one's positionality. This involves understanding the privilege and position an individual holds, as well as gaining awareness of one's existing and desired capacities. More concretely, assessing the

alignment between a researcher's own values and the objectives of a certain project or leadership position might be helpful. This can be done through various training types: workshops may be ideal in certain contexts, while short courses may be better in others. The Academy must ensure that the type of delivery is well-suited to the unique circumstances of its audience.

Group 4. Formulating Diverse Modules

Recognising that there is much potential in the WCRP Academy Future Leaders Programme, the group proposed a list of ideas that can be transformed into learning modules. The first focuses on ensuring inclusivity and awareness in organising WCRP meetings. As leaders play a central role in designing and coordinating critical meetings in their organisations, they must be cognizant that matters such as visa requirements, availability of funds, logistical and travel challenges should be tackled with inclusivity in mind. Other issues include religious practices and differences in time zones, among others. The second is about setting up a mentorship programme: the Academy can act as a bridge between volunteer-mentors and mentees. In connection with this, the group proposed a coaching seminar as its third idea. Members of WCRP can be trained as coaches, which will hopefully embed soft skills into their working relationships. Furthermore, the group recommended organising a training entitled "How to Play the Game as Academics," which will focus on matters related to international opportunities, work dynamics, and other seemingly intangible aspects of being a researcher. Finally, a module on team management and delegation was also suggested, noting how some senior researchers fail to trust the younger members of the team. This hinders ECRs from learning about essential skills such as writing proposals.

5. The Future Climate Scientist Leader

Through its Future Leaders Programme, the Academy aims to develop the next generation of leaders in the field of climate science. The Future Leaders Development Workshop brought together climate scientists and practitioners from various cultural backgrounds, career stages, and institutions, hoping that a diverse pool of participants would produce a holistic definition and persona of an ideal climate scientist leader.

5.1. Wheel of Power and Privilege

The Wheel of Power and Privilege, as illustrated in Figure 4, elicited a vibrant exchange of narratives and experiences among workshop participants. This was a twofold opportunity for the attendees to reflexively assess their *power and privilege*, while also learning from the lived experiences of their peers. Through these discourses, there was a shared understanding that recognizing *power and privilege*, especially when these are

concealed and embedded in norms and structures, is integral to be an effective climate scientist leader.

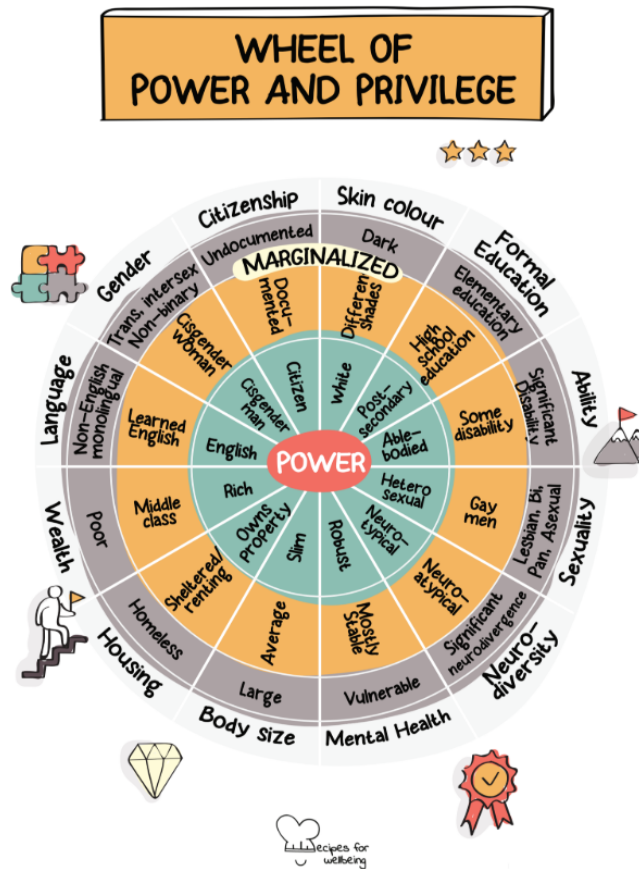


Figure 5. Wheel of Power and Privilege

This activity was guided by three reflection questions: a) Does your score align with the narrative you have in mind? b) What invisible qualities do you now find visible? c) Is this what you expect the 'picture of privilege' to look like within our community? Reflecting on these three questions, there was consensus that the wheel can be reimagined according to different contexts. It was recognised that each circumstance has its own set of power structures and norms on privileges, which consequently makes the existing wheel either complete, incomplete, or subject to much interpretation. In the United Kingdom, for instance, more power is associated with class-based differences, while ethnic factions are deemed to have more significance in Kenya. Participants shared the following *invisible privileges* the wheel failed to capture: sociolect and accents, religion, and time, among others. The wheel is also subject to much interpretation, noting how *wealth* can be valued differently across cultures.

Upon reflecting on the wheel and their own sets of powers and privileges, participants were prompted to connect their experiences and insights to the themes of capacity-building and leadership. It was unequivocally understood that capacity-building

opportunities can be enriching and emancipating, but these are often limited to individuals with much privilege. Institutions that provide these activities must also be cognizant that their participants come from various circumstances and backgrounds. Thus, activities like these must be revisited and reconceptualised to encourage people with less privilege to join. Moreover, workshop participants also concurred that there should be more capacity-building activities for climate scientists that center on the theme of self-awareness. Capacity for awareness must be built, especially for those who wield much power and influence in the field.

Building upon these implications on capacity development, the Wheel of Power and Privilege also shaped the discourse on *who* a climate scientist leader should be. While privilege is often linked to responsibility and greater opportunities to become a competent leader, it was also acknowledged that not all privileged individuals become effective leaders. In a similar vein, people with less privileged backgrounds still hold significant potential to become capable leaders – a participant used Nelson Mandela as an exemplar of this truth. This prompted a recognition that empowering people, especially those without much power and privilege, must be a goal of a climate scientist leader. This ideal archetype should be aware of invisible powers and privileges, embodying empathy and perceptiveness in collaborating with peers. Moreover, a privileged leader can also wield their stature to change structures and processes, consequently lowering the barriers that hinder people from accessing opportunities. It was conceded that countless leaders are already being untapped and underutilized due to these invisible constraints; it is the role of existing leaders, then, to be instrumental in actively removing these impediments to empower more people. Only then will leadership become more diverse and inclusive.

5.2. Defining a Climate Scientist Leader

Synthesizing discussions on effective leadership within the sphere of climate science, participants were asked to define who a climate scientist leader is, particularly within the context of WCRP. These ideas were elicited by asking them to fill this prompt: *A leader within the WCRP is _____*. Upon collecting numerous responses that look into different components of leadership, workshop facilitators compiled these into three main categories: *who*, *how*, and *why*. The attributes and characteristics of a leader are grouped into *who*, the reasons behind leadership are categorized as *why*, and the processes of leadership are classified as *how*.

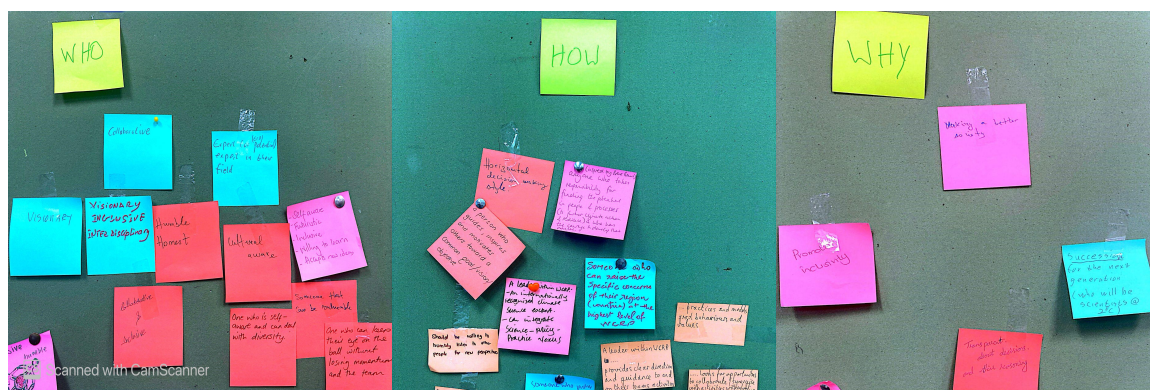


Figure 6. Sticky note answers to “A leader within the WCRP is _____”

Who: the characteristics of a leader within WCRP	How: the operationalisation of effective leadership.	Why: the principles behind their leadership.
<ul style="list-style-type: none"> • “Collaborative” • “Expert (or [has the] potential) in their field” • “Visionary” • “Visionary, inclusive, interdisciplinary” • “Humble and honest” • “Cultural aware” • “Self-aware, futuristic, inclusive, willing to learn, accepts new ideas” • “Collaborative and inclusive” • “One who is self-aware and can deal with diversity” • “Someone that can be vulnerable” • “One who can keep their eye on the ball without losing momentum and the team” • “Brave, inclusive, supportive, thoughtful, forward-looking” • “Someone sensitive to their own positionality (especially if coming from positions of privilege) and to socio-cultural nuances” • “A person who inspires others, not solely relying on authority given to them” • “Open-minded, considerate, supportive, and motivating” • “Motivate and inspire” • “Self-aware, imaginative, inclusive, and competent” • “Respectful of everyone’s opinions despite personal contradictions” • “A force for good” • “A bridge between scientists and society” • “A leader within WCRP is self-aware, empathetic, motivated, strategic thinker” • “Is open to new ideas and ways of doing things” • “Inclusive, humble, creative, courageous” • “A leader within WCRP is (ideally would be)... someone who is self aware, always questioning how they can be 	<ul style="list-style-type: none"> • “Horizontal decision-making style” • “(Inspired by Brené Brown) Anyone who takes responsibility for finding the potential in people for processes (to further climate action and resilience) and who has the courage to develop that potential” • “A person who guides, inspires, and motivates others toward a common goal/vision/objective” • “A leader within WCRP <ul style="list-style-type: none"> - an internationally recognized climate science expert - can integrate science-policy-practice nexus” • “Someone who can raise the specific concerns of their region (countries) at the highest level of WCRP” • “Should be willing to humbly listen to other people for new perspectives” • “Someone who is able to discern interconnections and encourage collaboration among the different moving parts within WCRP and among its external network and stakeholders” • “Someone who pushes for Global South inclusion within the organization, while fostering genuine collaboration between GS & GN” • “Provides clear direction and guidance to and on their teams’ activities” • “Practices and models good behaviours and values” • “Looks for opportunities to collaborate/synergise with activities within/out WCRP” • “One who can motivate, inspire, influence, nurture growth working with diverse stakeholders/web of actors towards a common goal (greater good) and growth” • “Shares opportunities and experiences” • “A leader within WCRP is (should ideally be)... someone who recognises the diversity of climate science and 	<ul style="list-style-type: none"> • “Making a better society” • “Promotes inclusivity” • “Succession for the next generation (who will be scientists at 2°C)” • “Is actively involved in building the community of the WCRP” • “Transparent about decisions and their reasoning” • “(1) Grow the climate science community to (2) positively impact decision making to (3) increase and improve adaptation practices”

<p>more inclusive, and strives to make the table bigger (So more people can sit at it)"</p> <ul style="list-style-type: none"> • "Inspirational" • "Well informed" • "Self-aware" • "Someone who is attuned to societal needs around climate action and the research needed to underpin it" 	<p>application and is able to take a big picture, holistic vision of what WCRP should do"</p> <ul style="list-style-type: none"> • "An animator who inspires and encourages people to move together" • "Look after qualities in individuals to find meaningful ways for everyone to contribute" • "Provides mentoring and support" • "Listen to everyone and ask again if they don't understand" • "Takes the responsibility to get the job done but let the people decide how to get there (as long as it works, otherwise also responsible to find out the how)" • "Someone who lifts other people up (both within WCRP and beyond)" • "Prioritize the leadership and respond to peoples requests fast" • "Culture builder, fosters collaboration, boosts morale, dialogical" • "Nurtures and gives opportunities to ECRs to further their careers" 	
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Table 1. Typewritten answers to "A leader within WCRP is ____"

The attributes of being self-aware and inclusive emerged as central in the suggested characteristics of a leader within WCRP. Coupled together with strategic oversight, competence, and humility, an ideal leader could foster a healthy and collaborative work environment wherein the nexus of science and society can be addressed. Addressing the question of *how one should lead within WCRP*, workshop participants put a premium on collaboration and empowerment, allowing individuals to share their expertise in the process of working for the environment. This leader must also have the capacity to discern synergies within WCRP, create transformative partnerships with external stakeholders, and provide clear direction and guidance for the network. All these are rooted in the principles behind their leadership - the *whys* of being a leader. This persona must act towards a better society and community, while simultaneously recognising intergenerational components, such as capacitating ECRs and young practitioners to be competent leaders. This leader must also be dedicated to transparency and accountability.

Integrating all insights, the workshop participants organically discussed three key themes that are inherently interconnected: a) balancing horizontal decision-making with decisive leadership, b) resolving divergence and conflicts, and c) creating a leadership toolbox. As much as there was unequivocal support for participatory and horizontal leadership, there was also a collective acknowledgement of the need for decisive leadership. As the discussion progressed, it became clear that leaders ultimately have to step up in making key decisions, but only after fostering a safe space for dialogue among team members. Participants were well aware that without a clear purpose and direction, rich discussions and exchanges may render little tangible results. Thus, as ideas and perspectives are exchanged, the leader must ensure that the vision and objectives of the team are clarified. Transitioning from this theme, the issue of properly resolving divergences

and conflicting perspectives became apparent. While differences are not unwelcome, leaders must be capacitated to handle situations wherein actors hold dissimilar perspectives, particularly by viewing these as creative tensions. Qualifying one's opinions, learning how to build consensus, and fostering healthy deliberations are some of the suggested capacities a leader must have. Similarly, the threefold act of listening, synthesizing, and echoing back is perceived as another effective way of resolving tensions, as well as role-playing among participants to encourage individuals to take different perspectives. Acknowledging that WCRP leaders must have various competencies that transcend technical skills, the group concluded that providing a leadership toolbox can develop effective leadership. This is a repository of capacity-building resources that focus on effective leadership, which may be made mandatory for individuals holding leadership positions within WCRP. Topics may include values and inclusivity training, consensus building, and peer-mentoring. This repository, together with the activities listed in Sections 4.1 and 4.2, is a tool that can enhance leadership within WCRP and the field of climate science, at large.

6. Conclusion

In a unique opportunity that gathered capacity-building experts, climate scientists, and practitioners, the Academy facilitated a rich exchange on the topics of capacity development and leadership. The workshop reinforced the collective belief that climate scientists must also be capacitated to become effective leaders, consequently highlighting the importance of the WCRP Academy Future Leaders Programme. Seeking to integrate the insights learned from this workshop, four components emerged as central:

1. A mentorship programme is critical, but this will only be effective if mentors are capacitated to become effective in providing guidance and support.
2. A personal development component must be integrated, serving as the basis of the leadership training programme.
3. Mentorship, personal development, and leadership resources can be developed into training modules, which will serve as critical toolkits for capacitating individuals.
4. Equity and inclusion must be established as core pillars of the programme.

Building on these key components, the Academy seeks to further develop and implement Its Future Leaders Programme in the years ahead. As it seeks to shape the future of climate science and practice, the programme has immense potential in producing significant impacts around the world.