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# Controversy over 'Science and Equity' at Bonn climate talks

26 June, Delhi (Radhika Chatterjee) -Following highly contentious negotiations, Parties adopted draft conclusions on matters related to science at the recently concluded climate talks of the 64th session of the UNFCCC's Subsidiary Bodies [SB64] in Bonn, Germany, held between 8 – 18 June.

The agenda item on 'Research and Systematic Observation' [RSO], was dealt with by the Subsidiary Body on Scientific and Technological Advice's (SBSTA), which adopted an outcome that is weak in terms of substantive issues covered in it. In particular, it failed to include any reference to the need for incorporating equity in research related to climate modelling and development of scenarios as part of the messages that should be communicated to the wider scientific community for further research related to climate change.

At SB64, under this item Parties considered the way research findings and gaps that were presented and discussed at the 18th meeting of the Research Dialogue held on June 9, 2026 would be communicated to the wider scientific community. Another document that informed these discussions was a mapping of how research gaps identified by SBSTA were being addressed by the scientific community. The Research Dialogue focused on three themes:

- Advances in climate modelling and scenario development.
- Pathways for sectoral transformation.
- Understanding climate risks, impacts, and tipping points.

[The SBSTA Research Dialogue provides a setting to discuss needs for climate change research and research-related capacity-building, particularly in developing countries, and to convey research findings and lessons learned from activities undertaken by regional and international research programmes and organizations in support of the implementation of the Convention and the Paris Agreement (PA).]

Negotiations on this RSO item occurred over eight informal consultations conducted over the two weeks of SB64, and presided over by **Patricia Nying'uro (Kenya)** and **Frank McGovern (Ireland)**. Discussions amongst Parties became highly contentious as negotiations progressed.

The main flashpoint was the issue of how language on scenarios related to limiting temperature rise to 1.5°C [since pre-industrial levels] and 'overshoot scenarios' would be reflected in the conclusions, particularly in light of concerns related to implications for food

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security and livelihoods as such scenarios would require reliance on large scale land based carbon dioxide removal (CDR), as well as the manner in which research gaps and advances would be reflected, especially in the context of the need for incorporating the issue of equity in such scenarios. Also under contestation was the issue of how language related to the question of whether misinformation and disinformation should be referenced in the text.

## IMPLICATIONS ON FOOD SECURITY DUE TO RELIANCE ON CDR IN OVERSHOOT SCENARIOS

**India, Arab Group,** and **Kenya** stressed the importance of highlighting the implications of reliance on large scale land-based CDR on food security in developing countries while referring to overshoot scenarios. India also pointed out that pathways related to overshooting 1.5°C and those where pathways overshoot 1.5°C and come back to the limit are very different, and should not be spoken of in the same manner as that would be unscientific. It was supported by the Arab Group and Kenya on this.

On the other hand, the **Alliance of Small Island Developing States (AOSIS), Least Developed Countries [LDCs]**, supported by the **European Union (EU)**, and **United Kingdom (UK)** emphasized the need for "developing scenarios that limit the magnitude and duration of overshoot of 1.5°C as much as possible, that achieve net zero greenhouse gas emissions [GHGs] as soon as possible in the second half of this century, and that bring warming below 1.5°C as far as possible by 2100, while taking feasibility and sustainability constraints of large-scale CDR into account."

**Chile** and **Guatemala** said CDR "encompasses a diverse range of technologies and solutions, including ecosystem-based ones, which would need to be feasible and their negative impacts minimized."

The final text related to these issues is captured in para 7 of the conclusions adopted at SB64 that reads: "The SBSTA noted with appreciation the discussions at the 18th meeting of the Research Dialogue on climate scenarios and modelling, pathways for sectoral transformation, and understanding climate risks, impacts and tipping points. It noted the scientific information and advancements, as well as knowledge and research gaps and research needs presented at the dialogue and encouraged the scientific community to continue advancing research to address these knowledge and research gaps and needs."

## ADVANCES AND GAPS IN RESEARCH, AND THE ISSUE OF EQUITY IN CLIMATE SCENARIOS

**India** acknowledged that while advances had been made in research, gaps still existed when it came to incorporating equity in climate scenarios. It pointed out that the presentation in the 18th Research Dialogue on this theme referred to the work of only one group from the developed region. It said "the lack of any representation of the initiatives being undertaken in developing countries in building their own models and scenarios, is a serious limitation." It stressed the need for capturing this important distinction in the text so that these discussions can be expanded in the wider scientific community. It was supported by **Kenya** and the **Arab Group** on this.

**AOSIS** said the text should be able to make a distinction between advances and gaps in research and pointed out there were differences between what is achieved and what the gaps are and the two need to be separated. It said it saw that significant advancement was presented in the Research Dialogue but the lack of differentiation or nuances in this context "would send a misleading message to the scientific community and policy makers." This it said would "undermine the science."

The **EU** on the other hand said while it is important to maintain distinction between advances and gaps, it stressed the need for highlighting the progress made on research in equity in climate scenarios. It also said that it cannot accept reference to equity in the context of advances and gaps in research. **UK** too emphasized the need for highlighting progress made in research on equity in scenarios. The final text related to this issue is captured in para 7 of the conclusions adopted (see reference to this above.)

## CLIMATE CHANGE INFORMATION INTEGRITY, MISINFORMATION AND DISINFORMATION

The **EU** proposed the need for highlighting climate change information integrity and countering misinformation and disinformation in the conclusions. It was supported by **UK, Japan, AOSIS,** and **LDC** in this.

**India, Kenya** and the **Arab Group** on the other hand acknowledged the importance of referencing climate change information integrity but shared concerns related to the misuse of the terms 'misinformation' and 'disinformation' against anyone who questions the status quo while engaging with science. India pointed out it has seen evidence of this at SB64 when talking about carbon budgets [in relation to the temperature goals] was labelled as 'misinformation' in another negotiating room (See related TWN update for details). It highlighted that carbon budget was part of the scientific evidence that was presented in the 5th assessment report of the Intergovernmental Panel on Climate Change (IPCC). Kenya also proposed alternative language to address climate denialism, especially from particular regions.

The final text related to this issue is captured in para 3 and reads: "The SBSTA noted the need to enhance efforts to promote and support the integrity of information on climate change."

## HIGHLIGHTS OF INTERVENTIONS

**India** said research "needs and gaps cannot be addressed simply by ensuring that the topics are spoken about here. They require deeper engagement with structural barriers and recognising that significant efforts will be needed to close the gaps. Efforts that include the provision of support to developing countries to build their capacities to ensure that they do so, do not simply remain data points for observation by institutions in developed countries, but can undertake observation, data processing, and analysis themselves." It noted that while equity in scenarios was flagged as a major gap, the presentations in the 18th Research Dialogue referred only to "the work of one group based in a developed region. While these efforts are not unwelcome, the lack of any representation of the initiatives being undertaken in developing countries in building their own models and scenarios, is a serious limitation. To really address some of these fundamental issues, it is important that conversations do not remain limited to small groups and initiatives in some regions only, but in fact expand significantly to cover wider research communities in developing regions as well."

Underlining the constant importance of science and engagement of the political process with it on a regular basis, it underlined "the responsibility of Parties in communicating scientific messages accurately, with their attendant nuances, uncertainties, and limitations." It also emphasised the need for ensuring that Parties "preserve balance and clarity of communication so that scientific results and outputs do not get misrepresented or misused."

On the messages that should be captured from the Research Dialogue, it said, "there is much confusion on the use of the term overshoot pathways. There are also serious concerns about what would be required to reduce temperatures after a temporary period of overshoot – particularly given the pressure this would create for land-based mitigation and therefore on food security. This is already indicated to be a serious concern in the scientific literature. Any discussion of overshoot scenarios must therefore balance the trade-offs between stabilisation scenarios at a certain level above 1.5°C vs. overshoot scenarios that return temperatures back to this level."

It said further that "another serious issue is the often, incorrect use of the term tipping points. We also witnessed this in the Research Dialogue…, regions being referred to as tipping points. The term is overused and there is also significant disagreement and contestation within the scientific literature itself on its use. Unless it is used in references to specific systems in the scientifically correct context and manner with all the attendant uncertainties clearly stated, we will not be in a position to accept blanket statements on tipping points." Adding further, it said, "it is our responsibility to ensure that we do not miscommunicate science or, perhaps even worse, communicate incorrect science in our desire to produce some messages that we think are important" and urged caution while including such messages.

It pointed out that in one of the presentations at the 18th Research Dialogue, "the entire Hindukush

Himalayan Range was referred to a "global tipping point"" and that this is "an inaccurate use of the term. There were also multiple references to projected "irreversibility" as tipping points. In fact, irreversibility and tipping points are not synonymous. While there is some relationship with the concepts. A change is irreversible if it cannot be undone, but a tipping point is a critical threshold beyond which a small perturbation can cause a qualitatively different system state through self-reinforcing feedbacks. This is why we think that we need to in fact have a clear call on ensuring that we are correct in communicating science."

Regarding language on scenarios related to exceeding 1.5°C, it cautioned against using the phrase "every increment above 1.5°C", especially in the context of scientific integrity and said, "it is very difficult to establish that every tenth of warming above 1.5°C is going to cause impacts. There is no scientific evidence on this yet."

It said using the word 'accurate' in the context of scenarios was inappropriate because scenarios are about different possibilities for the future, and it is not known yet as to which of the many scenarios is accurate.

Responding to EU's proposal of using 'tipping elements' while talking about ongoing research, it said that would make it more obscure without an explanation of what tipping elements are and how they are different from tipping points.

It said there has been a major advancement in the RSO room and pointed out that a few years ago even mentioning equity was a very contentious thing, "but now it is easily acknowledged as an intrinsic aspect of science" and emphasised that science is not separate from the social world. Adding further, it said this was also why it was constantly reiterating in the RSO consultations that while it is not opposed to including a reference to overshoot pathways, any such discussions "must be clear in underlining the serious implications for food security, biodiversity and rural livelihoods" due to reliance on large scale land-based CDR and emphasized that "just saying there are feasibility and sustainability concerns" of using large scale land-based CDR in overshoot pathways for a huge drawdown of carbon dioxide was very weak and therefore unacceptable to it. It also highlighted that IPCC's 6th Assessment Report [AR6] produced by its third working group, …[which] has also pointed out the food security implications of very stringent mitigation pathways even those that have limited overshoot.

It did not support specific calls to develop overshoot scenarios because that would be completely unbalanced given that "there are all kinds of scenarios that need to be developed" and "singling out one specific kind of scenario" was unacceptable to it.

It pointed out that saying 'achieving global net zero by or around mid-century with a view to keeping 1.5°C within reach' is "not scientific" and stressed, "we have heard in the Research Dialogue we are going to overshoot. We do not think pathways to come back to 1.5°C should be spoken of in the same way as overshoot scenarios… the two have very different pathways." Expressing confusion in this context, it asked when we say keeping 1.5°C within reach, does that also apply to overshooting 1.5°C and returning to it by the end of the century? If so, then that would be "a narrative" and not science. It pointed out that scientifically it is important to note that exceeding 1.5°C could mean reaching 1.7 C in the light of overshooting and stabilising. It pointed out that it is not known yet which of the two would be better: exceeding 1.5°C and returning or exceeding and stabilizing. This it said is not settled in the literature and not known with certainty.

On the issue of how advancements and gaps related to research are reflected in the conclusions draft text, it said while there is no problem in acknowledging that scientific research has advanced, there is a need to be "careful about claiming that we know all that is there to know. This can be misused and we must acknowledge where more research is required. This is not just a matter about clarity of communication" and is also related to scientific research. [It was referring to the gaps in research related to tipping points.] It also stressed that in the context of equity in scenarios, while some advancements have been made, they can no means be described as "significant". On the contrary, it pointed out that gaps are significant in this and that "researchers have said themselves that not enough work has been done on equity."

It supported the importance of climate change information integrity but expressed worry while talking about misinformation and disinformation. Words like 'misinformation' and 'disinformation' can be used in any way to counter science that people do not like, evidence of which was seen in SB64 when India was told it was spreading misinformation while speaking about carbon budgets (in another negotiation room) which are considered scientific evidence in IPCC's AR5 report. It said if these words are included in the text, then they must be accompanied with necessary explanations. It highlighted the fact that it gave rationales for every argument that it made in the RSO room and called that the essence of scientific process. "Our arguments have not been engaged with in a manner it requires in this room, this undermines the multilateral process. We have narratives being created about information and science outside this room – yet there is no engagement with science in this room." [India was referring to the press conference held by 'Friends of Science' in which speakers from **EU, Switzerland, Nepal, Fiji, Vanuatu** and **Panama** claimed that science was being undermined in the negotiations at SB64.]

At the closing plenary, after the adoption of the decision on RSO, India expressed its disappointment with the final outcome and said, "while we had the basis to achieve robust substantive outcomes, we had to settle for a very weak outcome that prevented us from discussing critical issues, such as the integration of equity and justice into climate models and scenarios. India has always engaged actively and constructively in this agenda item, as we are firm in our commitment to scientific and evidence-based policy making on climate change. Given that we discuss science in these rooms, India has always ensured that we explain our positions and provide substantive arguments for what we say." It stressed "science is not removed from people and from society. So, discussions of equity are central to discussions of science. This includes the consideration of both the disproportionate distribution of climate impacts and the disproportionate use and distribution of the global carbon budget. It is unfortunate indeed that there is a growing narrative that suggests that asking questions, examining assumptions, and ensuring the inclusion of diverse perspectives is equivalent to questioning the science. We submit that this is, in fact, fundamental to the scientific method."

**Saudi Arabia** for the **Arab Group**, in the context of research gaps and capacity said, "further work should improve regional balance, developing-country research capacity, and nationally relevant evidence, particularly for developing-countries and data-sparse areas. This should include regional research networks, sustained institutional capacity, equitable access to tools, computing resources, funding and participation opportunities, and data governance arrangements that respect national ownership, access conditions, and countries' capacities to generate, manage, and use their own data."

On climate modelling and scenario use it noted "that significant uncertainties remain in downscaling, data availability, model assumptions, aerosols, cloud processes, carbon-cycle feedbacks, natural variability, high-end outcomes, and regional representation. Scenario work should not be limited to pathways associated with 1.5°C, but should also provide a broader range of policy-relevant pathways that reflect different temperature levels, national circumstances, sustainable development priorities, and response options." It highlighted "the need for further research to address equity and justice issues in scenario development."

On technology systems, sectoral transformation, and food systems, it said "discussions should be grounded in national circumstances, sustainable development priorities, energy security, infrastructure readiness, feasibility, costs, benefits, trade-offs, and equity implications. Greater attention is needed to access to affordable finance, reducing the cost of capital in developing countries, and strengthening technology transfer, while supporting a broad range of nationally determined technologies without assuming uniform energy pathways. Research on food systems should protect food security, livelihoods, water needs, and rural development."

It expressed concerns about the broad manner in which the term tipping points is used and pointed out that the term "is receiving disproportionate attention relative to the level of scientific certainty surrounding it. The concept of tipping points

remains complex, and there continues to be considerable discussion and differing views within the scientific literature regarding its application and interpretation. Unless the term is used in reference to specific systems, in a scientifically accurate manner, and accompanied by a clear reflection of the associated uncertainties, we would not be in a position to support broad or generalized statements on tipping points."

Adding further, it said, "it is our collective responsibility to ensure that scientific findings are communicated accurately and responsibly. In our efforts to highlight important messages, we must avoid oversimplifying or overstating scientific concepts. We therefore urge caution regarding both the use of the term and the prominence being given to it in the outcomes of these discussions."

It said any reference to overshoot scenarios and returning to 1.5°C must be consistent with IPCC's special report on 1.5°C and highlighted concerns related to land and water security in this context. It pointed out its region suffers from water scarcity and frequent sandstorms and that all scenarios don't include that. It cautioned the need for being careful of that when information related to climate change is downscaled. During the consultations, it also proposed that the text should note "the advances the engineered CDR approaches that minimize trade-offs" related to the reliance on large scale land- based CDR in overshoot scenarios.

Expressing support for integrity of scientific information, it said the statement on misinformation and disinformation is vague and could be potentially weaponized due to which it could not accept that references to that.

**Kenya** supported language of equity in reference to scenarios. For overshoot pathways, it strongly supported singling out the impacts of land-based CDR as that was critical for developing countries, particularly in Africa. It asked for including a reference to implications for land use, food security, biodiversity, rural livelihoods in the context of overshoot scenarios in the text. Sharing a similar position as India on language related to overshoot scenarios, especially exceeding 1.5°C and coming back to it, it said this should be in line with human and social impacts of these scenarios and asked for including language that consider these human impacts. It also pointed out that there will be many dynamics when the world will overshoot 1.5°C , which are not known yet.

While acknowledging the importance of countering misinformation, it said mentioning that in the text can be problematic because it can open the door for anyone who asks questions of science to being labeled as spreading misinformation, or when one challenges the status quo. Adding further it said, "being climate scientists, we shouldn't give room to climate skepticism. We should support inclusivity and transparency." Responding to EU's proposal of using the UNESCO definition on misinformation and disinformation, it said the definition was very generic and open to interpretation and asked if language around climate denialism, particularly from some regions of the world would be agreeable instead.

**Chile** for itself and **Guatemala** highlighted gaps remained in capacity building requirements of developing countries which "has a stark impact in our process as the lack of representation in the mainstream literature can lead to an underestimation of the overall climate-related impact for some developing country sub-regions and prevent having robust findings on some topics for said regions." Adding further, it said "We should be able to quantify and qualify these gaps and request that knowledge in this gap is included as a gap to be addressed by the scientific community and reiterate that the Convention already contains provisions regarding strengthening systematic observation and national scientific and technical research capacities and capabilities, particularly in developing countries, and also to take into account the particular concerns and needs of developing countries and cooperate in improving their endogenous capacities and capabilities to participate in research and systematic observation efforts."

On equity and justice, it said, "we would further like details on how this is done, not just that it needs to be done so as to take the step from discourse to action without leaving anyone behind or creating more injustices."

It said there are issues related to the reliance on CDR in overshoot scenarios and keeping 1.5°C within reach in the way they have been referenced

in the text. It said CDR may be required in various sectors. Adding further, it said, CDR "encompasses a diverse range of technologies and solutions, including ecosystem-based ones, which would need to be feasible and their negative impacts minimized." This it said should be reflected in the text and not just "engineered CDR".

In the context of sectoral transformations, "it noted gaps in knowledge regarding resilient energy systems and the lack of attention to the increasing need of critical energy transition minerals for energy transformations and the impacts to ecosystems and to Indigenous Peoples as well as local communities."

**Antigua and Barbuda** for **AOSIS** said tipping points have increased at every additional degree of global warming and shared concerns about accelerated sea level rise, ice melting, glacier loss and the serious implications for water security. It welcomed progress in climate modelling and scenario development and said scenarios are important to explore potential mitigation measures, among other things. It welcomed climate scenarios that facilitate vulnerability assessment and also welcomed downscaling of climate information and said the use of machine learning should be reflected in this. It welcomed incorporation of equity and regional issues in scenarios and said alignment with 1.5°C goes hand in hand with distribution of equity. It said there is a need to reflect language in the text related to limiting the overshoot of 1.5°C to the smallest degree possible, achieve net zero in the second half of this century, and come as close to as possible to 1.5°C by the end of this century. It said such overshoot scenarios are needed to minimize tipping points and climate impacts and proposed the following language to be included in the text:

"The SBSTA welcomed the scientific information and significant advancements in research related to climate scenarios and modelling, including in providing downscaled climate information, and the consideration of equity and justice. It also encouraged the scientific community to continue to strengthen regional climate information and downscaling initiatives, particularly for SIDS and LDCs, and to further develop scenarios that limit the magnitude and duration of overshoot of 1.5°C °C as much as possible, that achieve net zero greenhouse gas emissions as soon as possible in the second half of this century, and that bring warming below 1.5°C °C as far as possible by 2100, while taking feasibility and sustainability constraints of large-scale CDR into account." In the later consultations, it emphasized the need for reflecting "to see global net zero by or around mid-century with a view to keep 1.5°C within reach" in the text. [This text was a joint proposal from AOSIS and LDCs.]

It said the text should be able to make a distinction between advances and gaps in research and pointed out there were differences between what is achieved and what the gaps are and the two need to be separated. It said it saw that significant advancement was presented in the Research Dialogue but the lack of differentiation or nuances in this context "would send a misleading message to the scientific community and policy makers." This it said would "undermine the science."

It supported EU's suggestion of reflecting statement on information integrity, combating misinformation and disinformation, and strengthening science policy interface. **Grenada, Palau**, **Fiji, and Vanuatu** aligned with **AOSIS**.

**Fiji** also stated that for **Pacific Small Island Developing States (PSIDS)** reference to the 1.5°C limit is crucial and added, "that is from the Paris Agreement, which has one goal of 1.5°C." This it said was an absolute red line for PSIDS. [Temperature goal of the Paris Agreement in Article 2.1(a) states: "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."]

**Sierra Leone** for **LDCs** endorsed the proposal of including this language in the text: "to further develop scenarios that limit the magnitude and duration of overshoot of 1.5°C as much as possible, that achieve net zero GHGs as soon as possible in the second half of this century, and that bring warming below 1.5°C as far as possible by 2100, while taking feasibility and sustainability constraints of large-scale CDR into account."

It also aligned with AOSIS on having more distinction between advances and gaps in research in the text. It also supported inclusion of misinformation and disinformation in the text.

The **EU** supported the joint proposal made by AOSIS and LDCs on the need for developing scenarios that limit the magnitude and duration of 1.5°C overshoot, achieve net zero GHGs by 2050 and bring back warming to below 1.5°C by the end of this century. It said it would like to work closely with Parties to keep temperature rise to as close as possible to 1.5°C . It said just referring to the development of scenarios for warming pathways was vague and instead there is a need to talk about pathways that exceed 1.5°C and also decline back to 1.5°C after exceeding it.

On the risks of large scale CDR to food security, it said the reference was too broad and general and expressed a preference for the proposal made by Chile. Adding further, it said "we need a balanced narrative on these issues."

[The relevant part of the text it was referring to was from the iteration dated 15th June, 2026, which read: "It noted that 'overshoot scenarios' may rely on large-scale carbon dioxide removal, and that certain land-based carbon dioxide removal methods have implications for land use, food and water security, biodiversity and rural livelihoods."]

It asked for a clear differentiation between advancements and gaps in research and that considerable advances have been made by the international community and mentioned equity, justice, trade in development of scenarios in this context. It stressed the importance of highlighting this progress. In later consultations, it said it could not accept a reference to equity in the context of mentioning advancements and gaps in research. It also expressed a preference for using the term "tipping elements" instead of "tipping points" and said that the former is "scientifically more accurate".

It stressed the importance of integrity of climate information and said it should be highlighted. It said the topic of information integrity is a prerequisite for policy guidance. It also proposed that the need to counter misinformation and disinformation should be highlighted and suggested UNESCO definition of these terms could be used.

The **UK** said it would like the conclusions to recognize ongoing work on equity in scenarios and said while speaking of gaps in research that efforts are already underway in the consideration of equity. In the context of overshoot scenarios, it said it is important to retain focus on 1.5°C pathways in line with the Paris Agreement temperature goals. Regarding the reliance on CDR, it supported Chile's proposal on mentioning diverse types of CDR. It said there is a need for further research on risks and implications of large-scale land-based CDR on food security and land use changes.