



INSIGHTS FROM
CONFERENCE **O**F
PANCHAYATS (2.0)

LOCALLY LED
CLIMATE ACTION
IN JHARKHAND

PRESENT AND
FUTURE

About PDAG

Policy and Development Advisory Group (PDAG) is a social impact organisation, working at the intersection of public policy advisory, research, and strategic communications. PDAG's work is focused on achieving outcomes that are evidence-based, data-driven, and facilitate people-centric policymaking to drive impact at scale. Over the years, PDAG has collaborated with policymakers, multilateral institutions, impact investors, civil society organizations, and academic and research institutions on large scale partnerships across our key practice areas- *Migration and Future of Work, Climate Change and Sustainability, Governance and Political Economy, and Digital Cultures and Futures.*

About Asar

Asar works on social and environmental issues by conducting research, ground truthing, and understanding local contexts in order to build innovative strategies that are rooted in reality. Asar convenes conversations and helps build relationships between various stakeholders to be able to sustain collaborations essential to catalyse momentum and result in change.

About Damodar Bachao Abhiyan

Damodar Bachao Abhiyan is an organisation committed to making Jharkhand's rivers pollution-free, especially those in the Damodar Valley region. The organisation focuses on water, forest, and land conservation in the Damodar region, as well as biodiversity, cultural conservation, and environmental protection. Committed to a balanced environment, this organisation is actively working in six districts. A central committee has been formed consisting of members from these six districts. District committees are functioning in Bokaro, Dhanbad, Ramgarh, Giridih, Hazaribagh, and Chatra.

Locally Led Climate Action in Jharkhand: Present and Future

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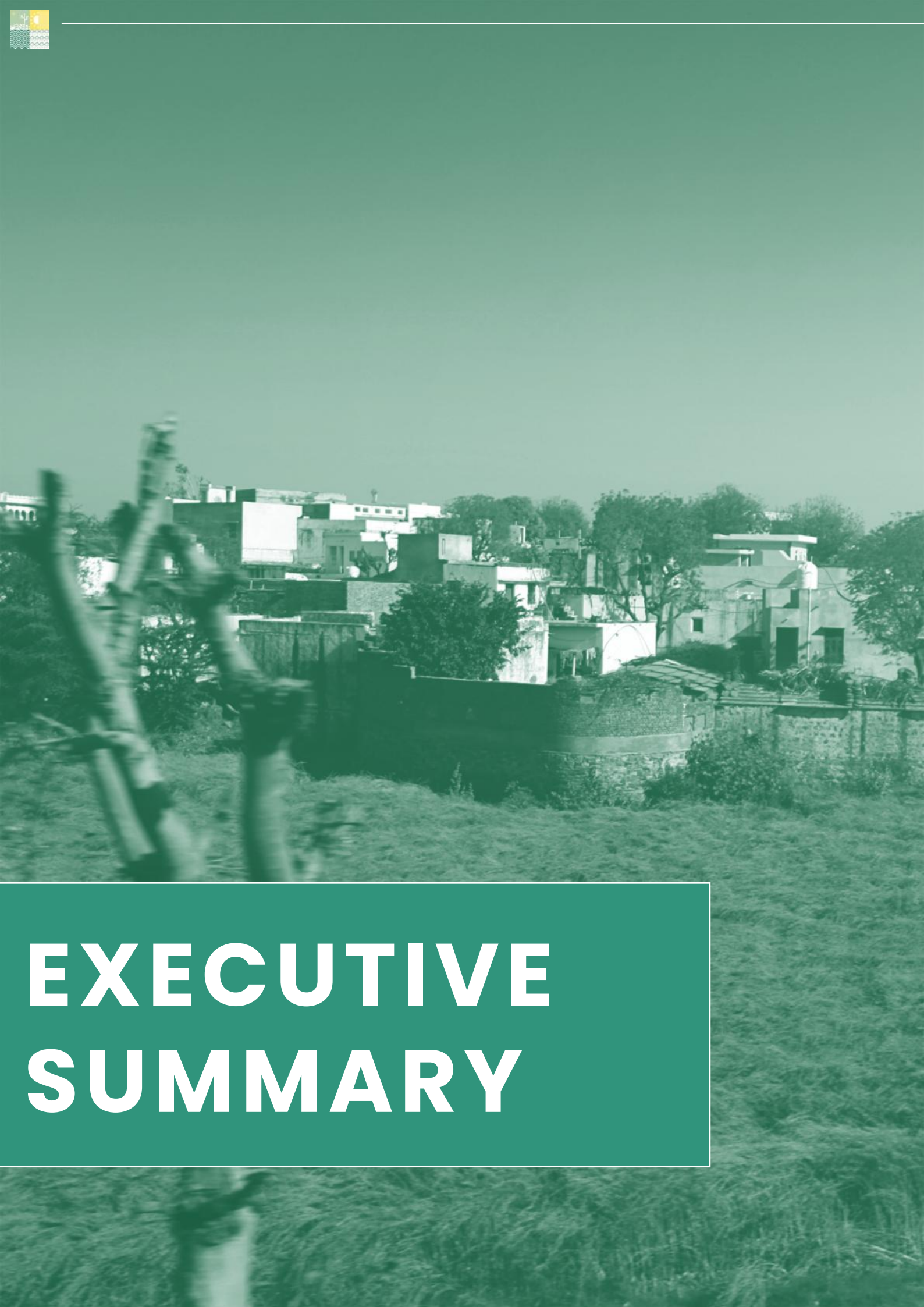
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EXECUTIVE SUMMARY



Taking a cue from the global Conference of Parties on Climate Change (COP-CC), the Conference of Panchayats (CoP) was first conceptualised and hosted by PDAG and Asar in March 2022, adopting a bottom-up, inverted pyramid approach emphasising the critical role of Panchayati Raj Institutions (PRI) to drive localised climate action. It provides a dynamic platform for multi-stakeholder engagement, and showcases field and community experiences while emphasising the pivotal role of Gram Panchayats in enabling localised climate action. With the aim to empower vulnerable communities to cope with increasingly frequent and severe shocks and ecological pressure, CoP aims to foster, build and amplify community dialogues, build synergies at the local and regional levels to address specific climate challenges and map potential avenues for financing a climate resilient future in Jharkhand.

Across all the sub-regional consultations in CoP 2.0, several workshops and convening sessions were held to facilitate awareness of climate change issues, focusing on locally-led action. The discussions

evaluated existing climate vulnerabilities, and ongoing climate-adaptive livelihoods, and explored climate finance for adaptation and strengthening resilience through leveraging the role of Gram Panchayats and PRI members. These multifaceted discussions also brought forth the significant role of women and women-led collectives to drive effective climate actions.



Participants during CoP 2.0 presenting local climate action plan

BOX 1.1

The second edition of the Conference of Panchayats (CoP 2.0) organised by PDAG in collaboration with Asar and Damodar Bachao Abhiyan, was held between July 2023 and January 2024. It brought together over 250 elected PRI representatives, community leaders and key government stakeholders from Jharkhand's five administrative regions to understand, discuss and find ways to address the impacts of changing climate patterns on communities. The CoP 2.0 also focused on deliberations around the critical role of local communities and public institutions at the Gram Panchayat level to advance climate action.

BOX 1.2 – Key Outcomes

The CoP organised by PDAG, Asar and Damodar Bachao Abhiyan in different divisions of Jharkhand illustrated the need to amplify contextual understanding of climate change struggles and develop participatory approaches to enhance climate resilience. The following are some key trends and findings that emerged from the consultations organised during 2023-24.



Community experiences and climate impacts



Community capacity strengthening



Role of Gram Panchayats in climate action



Climate action initiatives and collaboration



Climate financing through convergence and collaboration



Community experiences and climate impacts

Participants shared personal experiences of significant climate shifts, including deforestation, erratic monsoons, and unseasonal rains. These changes were linked to health problems, agricultural disruptions, loss of non-timber forest produce, and shifts in traditional lifestyles. The decline of natural ecosystems, drying rivers, and reduced water tables were highlighted as consequences of deforestation and pollution.



Role of Gram Panchayats in climate action

Panchayats identified critical challenges such as insufficient funds, inadequate resources for implementing schemes like Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), and the top-down nature of government initiatives. Participants underscored the importance of tailored solutions to their specific needs, increased budget allocation for climate planning, and improved coordination between local bodies and higher authorities.



Community capacity strengthening

Building adaptive capacities within the community is vital. Training programs focused on practical skills, such as crop diversification, resilient tree plantation, and topsoil conservation, have proven successful in increasing agricultural yields and profits. Notable mentions included initiatives for women's empowerment through agricultural schemes and the need to further identify and support the most vulnerable families through existing community institutions like self-help groups (SHGs) and farmer producer organisations (FPOs) for building resilience.



Climate action initiatives and collaboration

The CoP showcased a wide array of initiatives undertaken by Gram Panchayats to combat climate change, including rainwater harvesting, afforestation, forest conservation, and waste management. Participants emphasised the importance of traditional knowledge in Adivasi communities, and community-based management systems for climate resilience.



Climate financing through convergence and coordination

Channelling financial resources towards climate adaptation emerged as a crucial discussion point. Participants discussed the need to prioritise adaptation, facilitated through the convergence of existing schemes and coordination between various stakeholders. By aligning resources from initiatives like MGNREGA and District Mineral Fund Trust (DMFT), Panchayats can ensure financial support for sustainable development projects, including renewable energy installations and water conservation structures. This highlights the existing implementation gap of several schemes.

Looking Ahead

Through the convenings and consultations organised during the second edition of CoP, it emerged that for any prospective alignment with India's pledge to achieve its Net Zero target by 2070, there is an urgent need to leverage local community institutions and strengthen capacities of communities and PRI members to develop locally led resilient solutions that effectively mitigate the impacts of climate change.

The extensive discussions held by community members, PRI members and administrative officials across the state identified three key pillars for a climate-resilient future:

- Strengthen collaboration and knowledge sharing**

Initiate comprehensive awareness programmes/events/platforms that educate local communities about climate change and its impacts. These programmes should engage Gram Panchayats, local leaders, and community members, especially local women collectives for regular knowledge sharing to facilitate the exchange of best practices, innovative solutions, and technical expertise, fostering a collective approach to climate action and ensuring that local knowledge informs decision-making at all levels.

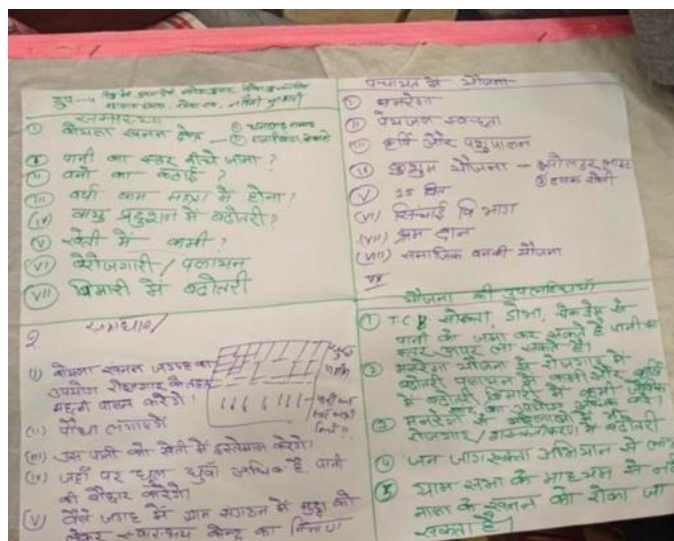
- Strengthen capabilities and resource utilisation in Gram Panchayats**

Empower Gram Panchayats with greater financial autonomy and decision-making capabilities to effectively implement climate resilience initiatives. Efficient utilisation of funds by leveraging the DMFT and leveraging Corporate Social Responsibility (CSR) allocations is crucial. These funds should be directed towards planned sustainable development projects,

including renewable energy installations such as solar rooftops, and water conservation structures. Enhancing the planning capacities of Gram Panchayats will enable them to spearhead local climate actions, ensuring that initiatives are tailored to the specific needs of the local communities.

- Prioritise climate-smart agriculture and diversified livelihoods**

Investment in climate-smart agriculture techniques, such as millet crops, water-efficient irrigation, and agroforestry is necessary to help farmers adapt to changing weather patterns and reduce vulnerability. Simultaneously, the promotion of diversified livelihood options beyond agriculture, such as sustainable eco and nature tourism and non-timber forest product-based enterprises, to build economic resilience in the face of sudden climate shocks.



Presentation by PRI members during CoP 2.0



CONFERENCE OF PANCHAYATS (CoP)– AN OVERVIEW



The Global Conference of Parties on Climate Change is a pivotal international forum where nations unite annually to tackle the pressing issue of climate change. It showcases the power of collaborative decision-making in addressing complex environmental challenges. Countries review emissions data at the Conference of Parties (COP), assess progress towards climate goals, and collectively determine the most effective course of action.

In India, the National Action Plan on Climate Change (NAPCC) sets nationwide climate priorities, which are then adapted for local implementation through State Action Plans on Climate Change (SAPCCs). Gram

Panchayats, or village-level self-governing bodies thus have a critical role to play in translating these strategies into action at the grassroots level.

Drawing upon the broader relevance of the globally recognised Conference of Parties (COP), the host organisations, **Policy and Development Advisory Group (PDAG)**, **Asar and Damodar Bachao Abhiyan** have conceptualised, designed and initiated the **Conference of Panchayats (CoP)** - a series of sub-regional consultations on climate change, locally led climate actions and Just Transition in Jharkhand.

In 2022, the first edition of CoP was held through

administrative division-level convenings in the North Chotanagpur and South Chotanagpur divisions of Jharkhand. Adopting a bottom-up approach, these conferences aimed to foster collaboration and knowledge exchange by bringing together and providing a platform for local communities and Panchayati Raj Institution (PRI) members from various panchayats across different districts. Apart from local communities, it also engaged other key stakeholders including government officials, academics, and civil society organizations (CSOs), to drive localised climate action and develop a participatory approach to implement effective adaptation, mitigation, and resilience strategies at local, regional, and national levels.

Key stakeholders from government, academia, and civil society gathered to deliberate on three main themes:



Climate change adaptation and mitigation strategies



Decentralised renewable energy systems



Ensuring a just transition in coal mining regions

The discussions underscored the importance of implementing impact and adaptation measures for the planned transition, conducting skill assessments, and leveraging government schemes and funds, such as the District Mineral Foundation Trust (DMFT), to promote the use of renewable energy sources.

The workshops identified critical gaps, including the need for a socio-economic assessment of people living around coal mining regions who are likely to be affected by the repurposing of mines. The first edition of CoP emphasised the importance of developing an ecosystem involving community members, local elected representatives, civil society organisations, think tanks,

government officials, and thought leaders to enhance participation and ensure a comprehensive approach to climate action.

CoP 2.0: Scaling Up Climate Action

Building on the success of the previous CoP, CoP 2.0 broadened its reach to deep dive into exploring local solutions to climate change. A critical step was to understand community awareness of climate change, its impacts, and the emerging local challenges and climate effects on livelihoods.

BOX 1.2 - Key Outcomes

The plan for CoP 2.0 included division-level convenings across Jharkhand's five administrative divisions. It saw participation from a diverse range of stakeholders involving local communities, PRI members, district-level government officials from the agriculture and rural development departments, local CSOs and journalists reporting on climate change issues. All consultations witnessed two-day long stakeholder engagement sessions with panel discussions, convenings and group activities, focussed on addressing three key themes:



Enhancing climate change awareness in Gram Panchayats

Foster dialogue among participants on local impacts of climate change, gather insights and raise awareness amongst PRI members to drive community-led climate action.



Develop adaptation strategies for sustainable livelihoods

Facilitate a deeper understanding of climate urgency and explore existing and potential adaptation strategies, government programs, and mitigation measures like agroforestry to build resilience and secure livelihoods.



Explore mitigation strategies for a resilient future

Identify and discuss potential mitigation strategies to address the future impacts of climate change, including sustainable agricultural practices, water-efficient crops, and educational initiatives such as school gardens to promote environmental stewardship.



North Chotanagpur Consultation under CoOP 2.0



Background of the divisions hosting CoP 2.0: Socio-economic, cultural, and ecological aspects

12
Feb'24

Palamu



Daltonganj



Attended by: PRI members, CSOs representatives and government officials from district agriculture office district rural development, district forest office and JSLPS

Palamu Division is characterised by its hilly terrain, tropical dry deciduous forests, and the presence of the Betla National Park. The region's economy is predominantly agricultural, with paddy, wheat and pulses being the major crops. However, the lack of adequate irrigation facilities and frequent droughts have hindered agricultural productivity in the region. The area faces environmental challenges like deforestation, wildlife habitat loss, and water scarcity.

11-12
Oct'23

North Chotanagpur

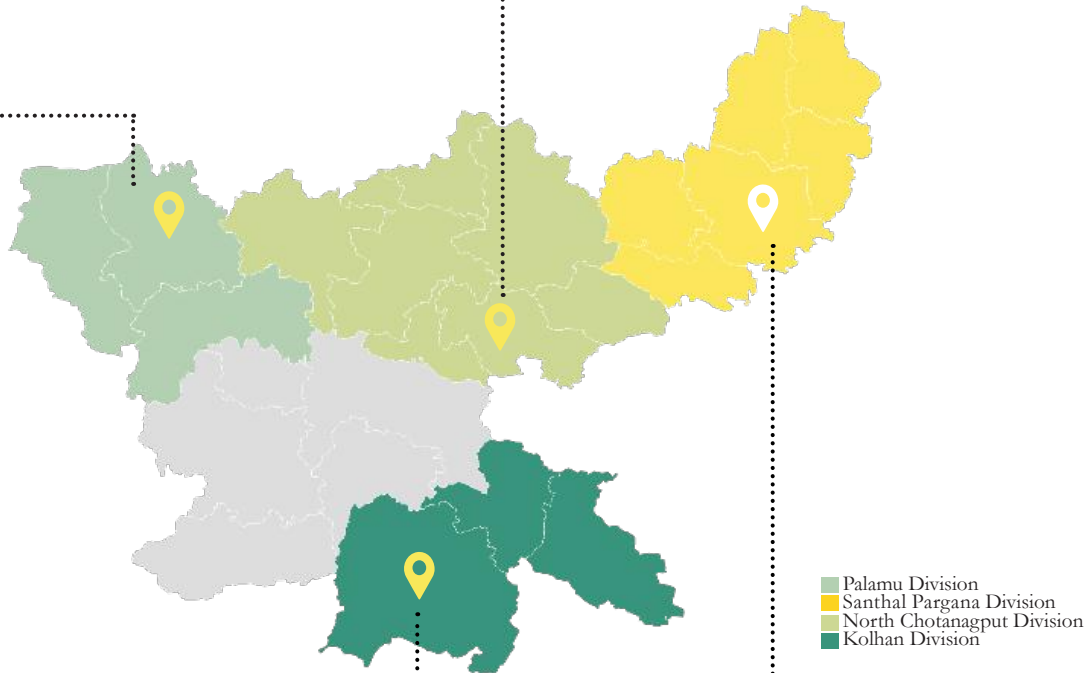


Bokaro



Attended by: PRI members, representatives from CSOs and government officials from district agriculture office and JSLPS

North Chotanagpur Division is characterised by its hilly terrain and dense forests, part of the Chotanagpur Plateau. The region has a rich biodiversity, including numerous flora and fauna species, and significant mineral resources. The region is characterised by its industrial landscape and mining activities, particularly coal mining. However, this dependence has also brought forth environmental challenges like deforestation, air and water pollution due to mining and soil erosion, impacting the ecological balance.



7
Feb'24

Kolhan



Chaibasa



Attended by: PRI members, representatives from CSOs and government officials from district agriculture office district rural development, horticulture and JSLPS

Kolhan Division is characterised by its lush forests, rolling hills, and rich mineral resources. The region is home to diverse flora and fauna, including endangered species. Kolhan is rich in mineral resources, particularly iron ore. The mining industry in the region has contributed to social disparities as well. Environmental challenges in Kolhan include deforestation, mining impacts, and water pollution, threatening local biodiversity and natural resources.

29-30
Nov'23

Santhal Pargana



Dumka



Attended by: PRI members, representatives from CSOs and government officials from district agriculture office and JSLPS

Santhal Pargana Division is known for its undulating terrain and dense deciduous forests. The region features diverse ecosystems, including rich wildlife and significant flora. The economy is predominantly agrarian, with agriculture and allied activities being the primary source of livelihood. The area faces ecological challenges such as deforestation, soil erosion, and water scarcity, often exacerbated by agricultural practices and population pressures.



INTRODUCTION





The Intergovernmental Panel on Climate Change (IPCC), through its landmark 6th Assessment Report, (AR6 Climate Change 2021: The Physical Science Basis, 2021) has unequivocally declared a climate emergency. The Paris Agreement, adopted at COP 21, further solidifies the global commitment to limit global warming to 1.5 degrees Celsius above pre-industrial levels. Central to this endeavour is the concept of a ‘Just Transition,’ a transformative shift towards renewable energy sources that prioritises equity and social justice for those most vulnerable to the impacts of climate change and the transition itself.

Globally, strategies have been outlined to address such transitions, including assessing affected populations, evaluating economic costs, restructuring resource allocations, establishing independent committees to evaluate impacts, and fostering stakeholder engagement through surveys and consultations (Sovacool et al., 2021).

However, the global discourse on climate action has traditionally revolved around setting emission reduction targets, outlining financial commitments, and high-level negotiations. The lack of representation of local communities, particularly indigenous populations in climate decision-making processes has hindered effective policy implementation and often led to solutions that are inapt to local contexts.

1.1 India: A Case Study on Climate Vulnerability and the Role of Sub-National Actors and Indigenous Communities



India is a poignant case of climate vulnerability, and its distinct issues require acting at a localised level. The National Disaster Management Authority (NDMA) reports an average annual loss of two per cent of India's Gross Domestic Product (GDP) due to extreme weather events and climate-related disasters. This economic toll is compounded by projections from the World Bank (Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience, 2013) that indicate a potential 10% reduction in crop yields by 2050 due to climate change, exacerbating existing vulnerabilities and potentially pushing millions into poverty and displacement. A recent study (Difffenbaugh & Burke, 2019), suggests that climate change could force over 720 million people back into poverty and displace 140 million people by 2050.

In this context, climate change isn't just an environmental issue; it is a threat multiplier that deepens social inequities and undermines development gains. It is already causing significant disruptions to livelihoods,

particularly in rural areas, with the potential to undo decades of progress in poverty reduction. The urgency of the crisis demands a paradigm shift in our approach to climate action. It necessitates deviating from a narrow focus on top-down policies and international agreements towards a more inclusive and grounded approach. This sentiment is echoed in reports by IPCC and UNESCO, which emphasise the importance of engaging local knowledge and community engagement to address global challenges.

The participation of vulnerable and indigenous communities in climate negotiations is indispensable. Inclusivity in global climate forums allows their voices to be heard, enabling the incorporation of their perspectives into policy frameworks. Empowering these communities with representation in decision-making acknowledges their frontline role in climate resilience and fosters more comprehensive and equitable strategies that address their specific needs and challenges.

1.2 Just Transition and Beyond: The Role of Gram Panchayats in India

India, a signatory to the Paris Agreement at COP 21, has committed to significant targets such as reducing the emission intensity of its GDP by 33 to 35 per cent by 2030 and increasing the share of non-fossil fuels-based electricity generation. While such measures are imperative for transitioning towards sustainable energy sources, concerns mount over potential labour displacement within the existing coal-dependent economies, which will face the immediate brunt of such a transition.

Expanding the scope of Just Transition is thus equally crucial. Climate change is not merely an energy sector issue; it is a multifaceted crisis with far-reaching consequences on food security, water availability, and livelihoods for communities.

The 73rd Amendment Act of the Constitution, enacted in 1992, significantly strengthened the role of Gram Panchayats in rural governance. The amendment tasked the gram panchayats with the preparation of village-level plans by identifying local needs and resources and creating plans that address specific issues such as infrastructure development, education, health, sanitation, and agriculture. Gram panchayats are the closest administrative unit to the people who have a deep understanding of local ecosystems and traditional practices. Empowering them to participate in climate decision-making and implementing adaptation measures is essential for effective and equitable solutions. The Ministry of Panchayati Raj has also recognised the importance of Gram Panchayats in climate action with initiatives like the 'Clean and Green Village' campaign that empowers panchayats to take up activities related to natural resource management, waste management, and afforestation. Additionally, integrating climate resilience plans into Gram Panchayat Development Plans (GPDP) ensures that climate concerns are factored into local development strategies.

Empowering local communities and PRIs, amplifying marginalised voices, and expanding the scope of Just Transition are not just ethical imperatives; they are strategic necessities for building a climate-resilient future. This approach necessitates significant investments in research, development, and capacity building in sectors like agriculture, water management, renewable energy, and livelihoods. By fostering innovation and knowledge sharing, we can empower communities to adapt to the changing climate, diversify their livelihoods, and build a more resilient future.

1.3 Climate Vulnerability of Jharkhand

India's pledge to achieve Net Zero by 2070 necessitates a pivotal shift from primarily depending on fossil fuels towards renewable energy sources. To support the national target, the state government of Jharkhand has introduced several progressive programmes and policies, like the 'Jharkhand Solar Policy' in 2021 which aims to increase the uptake of solar energy across the state (reduce the coal-based power dependence and ensure access to renewable energy) and in 2022 constituted the 'Just Transition Task Force', a first-ever inter-departmental governmental task force by any state government in India.

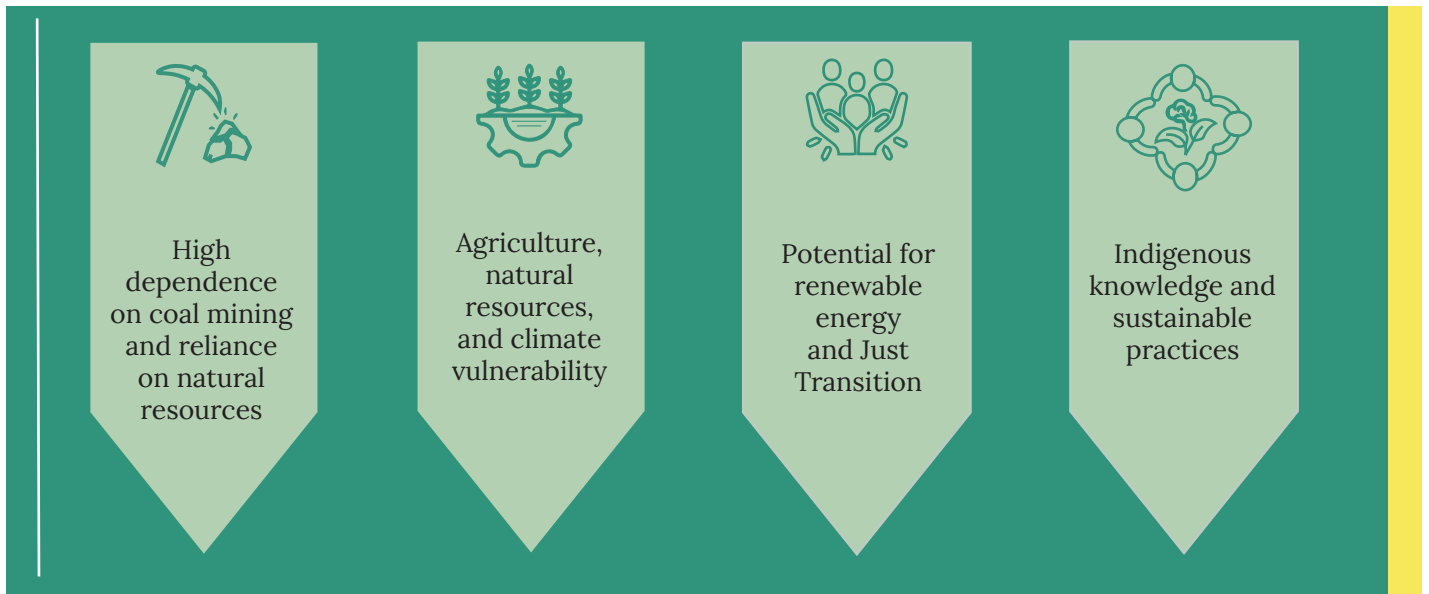
The Task Force has been mandated to provide recommendations focused on reducing the state's dependence on fossil fuels and promoting green energy, including developing an institutional mechanism for a potential transition from coal toward renewable and sustainable sources. These public policy initiatives are particularly important for Jharkhand as the state has India's largest coal reserves. Nearly half of Jharkhand's 24 districts are severely dependent on mineral resources and mining with more than 80 percent of their GDP, directly or indirectly being generated, from the coal economy, with significant employment, both in the formal and informal workforce.



A woman working on a field impacted by climate change



The state thus emerges as a compelling case study for India's climate resilience endeavours owing to its intricate interplay of factors.



High dependence on coal mining and reliance on natural resources

Coal accounts for 93.7% of the energy production in Jharkhand, making it largely susceptible to climate change repercussions and cost-competitive issues for global energy shifts. This makes India's target of achieving Net Zero Carbon status imperative by 2070.

Jharkhand's focus on skilling its workforce for sustainable livelihoods offers a model for other coal-dependent regions.



Potential for renewable energy and Just Transition

The shift away from coal presents an opportunity for Jharkhand to become a leader in developing renewable energy. This transition can be 'Just' by ensuring new opportunities and skill development for workers affected by the decline of coal mining.



Indigenous knowledge and sustainable practices

The state's rural populace, with their deep-rooted indigenous knowledge, plays a vital role in climate adaptation and mitigation. Scheduled Tribes (STs) make up 26.2% (Census 2011) of the total population, out of which nearly 91.7% reside in villages. Their holistic practices, grounded in community and sustainability, offer valuable lessons in resilience and ecosystem restoration.

These efforts are crucial in the context of Jharkhand's diverse and complex socio-economic landscape, where adaptation and resilience-building against climate change are imperative. The primary objective is to assess the tangible impact of climate change on critical sectors such as agriculture, health, education, and employment, while also recognising the pivotal role of decentralised governance, particularly through initiatives like Panchayati Raj, in devising effective solutions.

Setting the context for climate action, Jharkhand's community-based climate narrative sets the stage for understanding climate change's implications and how the state's experience can guide others.



Agriculture, natural resources, and climate vulnerability

As per the Department of Science and Technology report, Jharkhand ranks as the most vulnerable state in India. With an economy intertwined with agriculture and natural resources, it is among the eight Indian states most vulnerable to climate change, despite having 40% of the country's mineral resources. The majority of its districts face heightened risks as indigenous and marginalised communities are disproportionately affected due to the lack of economic diversification and their limited resource capacities. With approximately five million people migrating out of the state as of 2017, Jharkhand has a high rate of out-migration. Additionally, there has been a growing trend of increasing frequency of droughts and heat waves across the state.



UNVEILING CLIMATE CHANGE IMPACTS ON COMMUNITIES IN JHARKHAND: INSIGHTS FROM THE CoP (2.0)



Drawing from the lived experiences of people, Panchayat Raj Institution (PRI) members, and CSO representatives, the regional consultations as part of the Conference of Panchayats (CoP 2.0) illuminated the complex interplay of factors contributing to climate change across Jharkhand, India. The participants identified several key indicators of climate change in the region, including a noticeable rise in average temperatures, increasingly unpredictable rainfall patterns, more frequent and intense hailstorms, and a decline in air quality in villages around coal mines.

Mining and industrial activities have been a major contributor to climate change, particularly in regions like Kolhan and Bokaro, where large-scale industries like Tata Steel, SAIL, Rungta Mines, have significantly affected the environment. Deforestation, driven by industrialisation and unsustainable practices, has disrupted rainfall patterns, degraded soil, and reduced access to non-timber Forest Products (NTFP). In addition, the excessive use of chemical fertilisers and dumping of plastic waste has further contributed to soil degradation and water pollution, impacting local ecosystems. These changes have not only affected the physical environment but also impacted cultural practices, dietary habits, and overall well-being.

Key Findings on the impact of climate change at CoP

Through inclusive discourse and consultation during the conference, the following key indicators of climate change were identified - rise in temperature, erratic rainfall patterns, hailstorms, and pollution

“ The length of the summer season is increasing every year, while the length of the rainy and winter seasons is decreasing every year...The region is also hit by drought almost every year. The temperature in the region has increased by two percent ”

- a common refrain/opinion shared by participants across the consultations.



During CoP in Kolhan, people indulging in the chart paper activity to point how climate change is impacting their life and how they tackle it

The participants shared the key impacts of climate change observed across the five divisions:

Water scarcity:

A consistent and alarming theme across all locations (North Chotanagpur, Santhal Pargana, Kolhan, and Palamu) was the drying up of water sources like wells, ponds, and handpumps, indicating a declining groundwater table. This scarcity, as emphasised by community members, directly impacts agriculture and triggers migration from villages.



Dry riverbed, Santhal Pargana

Rajendra, a farmer from Kolhan, supported the argument by highlighting the historical shift in water availability. He pointed out that nalas are drying up earlier than before, making traditional practices like water offerings during festivals like Chhatt impossible due to scarcity.

In Bokaro, Rajendar from Ramgargh, Mando shared his perspective as a farmer. He reminisced that around 15–20 years ago, there used to be water until May–June, and a reduced water level was an indication that monsoons were due. However, now the nalas are drying up by November–December. He also noted that the monsoon, which used to be uniform everywhere, is now changing every 10 meters.

Reduced crop production:

Unpredictable rainfall patterns and lack of water for irrigation during dry seasons were reported to severely affect crop yields across all locations. This decline, as shared by farmers, leads to reduced income and migration from villages.



Paddy cultivation in Santhal Pargana

PRI members across regions noted the decline in agriculture production as a major consequence of climate change.

Shifting agricultural patterns from multiple to single crop cultivation has caused concern to locals over products such as mahua, phutkal, and gundli that are important sources of income and nutrition for locals in the North Chotanagpur Division.

Reduced natural resources and land degradation:

Participants reported deforestation as a significant factor contributing to disrupted rainfall patterns, soil degradation, and reduced access to NTFPs in areas with forest cover, particularly in Kolhan and Palamu. Additionally, a decline in grassland and pastureland due to erosion and mining has been observed and even the forest fire incidents occasionally affect forest and grazing lands.



Haat selling Non Timber Forest Produce (NTFP) in West Singhbhum

In Kolhan a PRI member shared that – the population in villages have a relationship with forests. NTFP collection contributes to the livelihood of many. The NTFP collection is now restricted. There are restrictions from the Forest Department, but the overall NTFP collection is now on a decline. This might be an effect of climate change. Many medicinal plants, edible plants, and small animal species are now rare to find.

In Palamu, Lah (Lacquer) cultivation by farmers and collection (an NTFP) from forests has completely stopped.



Impact on vulnerable population groups

Participants highlighted the disproportionate impacts of climate change on women and children. For instance, longer summer seasons impact children's education and as men often migrate, it leaves women to manage households amidst worsening environmental conditions. Even though migration is highlighted as a major issue, its connection with climate change was not directly established. It was rather attributed to the lack of livelihood opportunities available locally (low agricultural productivity and low mining opportunities).



A mother with her child- the group disproportionately impacted by climate change

In Dumka, the panel discussion brought to light the plight of farmers who are often seen abandoning agriculture due to low yields and insufficient revenue generation. The farmers are either migrating or working on someone else's farm, reluctant to cultivate their own land.

"Incidents of diseases in livestock have increased due to climate change. A village household is dependent on poultry, goats, and cows for an additional income. Diseases have reduced the income that a household used to generate apart from farming", shared during Palamu CoP.

Other impacts

Additional observations included a decline in grassland and pastureland, extinction of native crop varieties, increased forest fire incidents, and negative impacts on traditional medicine practices in Kolhan. Participants from Palamu reported increased livestock diseases and recurring droughts.



UNDERSTANDING ADAPTATION STRATEGIES IN JHARKHAND: INSIGHTS FROM CoP (2.0)





Jharkhand, a state grappling with the impacts of climate change, is home to communities actively adapting through diverse strategies. Existing literature highlights a range of approaches, from traditional knowledge-based practices to government-led initiatives, including livelihood diversification, water conservation, climate-smart agriculture, and early warning systems. The CoP provided a platform to delve deeper into these strategies, exploring both successes and challenges.

Key findings from the CoP sessions

During the CoP sessions, participants shared their experiences and insights on a variety of adaptation measures in Jharkhand:

- **State Government initiatives for employment generation**

Programs like Didi Bagiya Yojana were highlighted for their role in empowering women and providing alternative livelihoods, especially during periods of drought and water scarcity. A local participant highlighted:

“ For 7-8 years, women had no work. Now, thanks to Didi bagiya yojana¹, they are engaged in animal husbandry, horticulture, and agriculture. ”

- **Focus on water security**

The construction of soak pits using MGNREGS funds was identified as a successful community-driven initiative to improve rainwater harvesting and address declining water tables.

- **Promoting climate-smart agriculture**

The government's focus on millets, like the distribution of ragi seeds in Dumka, and the promotion of drip irrigation under the Jal Jeevan Mission were seen as positive steps towards promoting climate-resilient agriculture.

- **Solar energy adoption**

Solar energy in the North Chotanagpur region is currently limited to streetlights, lamps, and some water pumps. While some civil society organisations offer subsidised solar-powered water pumps and inverter batteries for irrigation, these remain largely unaffordable for small-scale farmers. A key barrier to wider adoption is the lack of awareness about government schemes and programs offered by the Jharkhand Renewable Energy Development Agency (JREDA).

The CoP discussions highlighted the importance of a context-specific approach to climate change adaptation in Jharkhand. Addressing the unique challenges and opportunities in each region requires a combination of government support, community-led initiatives, and knowledge sharing. By building upon existing strengths and addressing the identified barriers, Jharkhand can foster a climate-resilient future for its diverse communities.

¹Didi Bagiya Yojana is an innovative initiative by the Rural Development Department of Jharkhand. Under this scheme, Self Help Groups (SHGs)

Table: Emerging challenges, strategies and solutions emerging from CoP

Location	Strategies	Implementation	Challenges	Solutions
Palamu	Modernisation of agriculture	Adoption of modern agricultural practices, including drip irrigation and solar-powered water pumps (Kusum Yojana ²)	Reluctance among farmers due to unfamiliarity and capital intensity of modern practices	Inculcating awareness and providing training to encourage adoption of sustainable agricultural techniques
Dumka	Rainwater harvesting and afforestation	Construction of soak pits for rainwater harvesting afforestation drives led by Panchayat members (MGNREGA)	Rapid decline of rainfall, lack of tree cover exacerbating climate impacts	Leveraging MGNREGA funds for sustainable water management, promoting community-led afforestation initiatives
Bokaro	Incorporating climate action discussions into local governance (Gram Panchayat involvement)	Construction of soak pits, wells through MGNREGA to increase water table, NADEP in panchayats for biogas.	Limited involvement in climate action due to limited budgets for panchayats, reliance on MGNREGA and other external funding.	Training for Mukhiyas (elected Panchayat member), field cadres, and community members to explore other sources of funds like CSR Funds, DMFT Funds and how van samitis can be formed in discussion with forest department.
Kolhan	Promotion of organic farming and animal husbandry	PRADAN has been involved in providing training and support to farmers on organic farming practices and animal husbandry techniques.	Convincing farmers to adopt organic practices due to concerns about yields and lack of awareness, as well as limited access to resources and markets for organic produce.	Leveraging government schemes like Birsa Harit Gram Yojana ³ and Didi Badi Yojana to promote the cultivation of fruit trees and medicinal plants and collaborating with Jharkhand State Livelihood Promotion Society (JSLPS) to provide additional support and resources to farmers, including access to livestock and organic farming inputs.

² The Kusum Yojana in Jharkhand is part of the Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) scheme, which aims to promote the use of renewable energy sources and reduce dependence on conventional energy.

³ The Birsa Harit Gram Yojana (BHGY) launched in 2020, is a Jharkhand government scheme promoting afforestation and income generation for farmers through fruit tree plantation and allied activities.

Leveraging Government support in climate adaptation

Existing work by practitioners highlights the need to leverage governance performance to enhance climate resilience. This presents an approach for assessing governance performance in social-ecological systems (SES) and identifying leverage points to enhance climate resilience. Studies (Rölfer et al., 2022), have also identified a few leverage points that include improving support from the provincial government, prioritising climate change in integrated development plans, enhancing collaboration frequency, and allocating funds for climate actions. Overall, government support plays a vital role in enhancing climate resilience.

Focusing on promoting grassroots innovations for climate adaptation, it is integral to understanding the potential of existing government programs to enhance climate adaptation. In Jharkhand, government institutions such as Jharkhand Livelihood Promotion Society (JSLPS), Agriculture Technology Management Agency (ATMA), Jharkhand Tribal Development Society (JTDS) and Panchayat bodies along with various Civil Society Organisations (CSOs) play a vital role in supporting village level initiatives. Key insights and learnings were shared by government officials, providing a comprehensive understanding of various programs, their accessibility, challenges, and opportunities.



The District Planning Manager, JSLPS, **Bokaro**, shared the success of women's self-help groups (SHGs) in livelihood development, and emphasised their potential as agents of change. However, they noted challenges in adopting clean energy solutions due to limited awareness and affordability concerns. Leveraging the SHG network and investing in awareness campaigns were identified as potential pathways to overcome these barriers.



In **Palamu**, the discussions centred on agricultural adaptation, where participants including the District Agriculture Officer, emphasised the need to promote crop insurance, livestock insurance, and climate-resilient crops like maize and pulses. The importance of selecting suitable crops, varieties, and manure for the region's climatic conditions was stressed. However, challenges such as limited access to quality seeds, lack of awareness about sustainable farming practices, and inadequate irrigation infrastructure were identified as key barriers to agricultural adaptation. Training programs on horticulture, soil health, and agricultural machinery were highlighted, along with the potential of agroforestry under MGNREGA and Birsa Harit Gram Yojana, with participants suggesting the development of market linkages for these products and the provision of training and extension services to farmers.



Participants in **Kolhan** emphasised the potential of traditional farming and tribal knowledge in offering solutions. Strengthening PRI capacity to support organic farming and address farmers' concerns has been useful. Challenges included the loss of traditional ecological knowledge, barriers to organic farming adoption, and ensuring the effective implementation and outreach of social security schemes.



In **Dumka**, participants highlighted the role of ATMA in building farmers' capacities through training, fairs, and exposure visits, to promote sustainable agriculture. Collaboration with ATMA was seen as an opportunity to access resources like hybrid seeds and plant saplings, essential for climate resilience. JSLPS officials shared their ongoing work on alternative livelihoods, which could provide additional income to communities in the next five years. Participants also recognised the potential of leveraging localised SDGs and GDPDs to plan local climate initiatives, with the annual Gram Sabha and Mahila Sabha serving as platforms for community participation and decision-making.



MITIGATION STRATEGIES: SUB- REGIONAL ANALYSIS AND SOLUTIONS FROM WITHIN





From the coal belt of North Chotanagpur, where environmental degradation and livelihood concerns intersect, to the agricultural region of Santhal Pargana and Kolhan, and the water-stressed landscapes of Palamu, each region presents a distinct set of challenges and opportunities for climate action. The participants emphasised the importance of community driven efforts, sustainable practices, and empowerment of the local population in addressing climate change. Following the discussions on the existing climate change issues and localised adaptation mechanisms, the CoP 2.0 panel discussions/workshops delved into the specific mitigation strategies proposed for each region. They highlighted the importance of tailoring solutions to local contexts and harnessing the knowledge and resources available within communities.

1. Addressing environmental and socio-economic challenges in North Chotanagpur

In Bokaro, local communities are faced with several challenges that are both environmental and socio-economic. These include migration, illness, unregulated industrial pollution, and a declining water table. To address these issues, a multi-pronged approach was suggested:

- **Restoration of open-cast mines**

Transforming abandoned open cast mines into ecologically vibrant areas to mitigate environmental hazards and provide new habitats for local wildlife.

- **Implementation of MGNREGA**

Harnessing the potential of the Mahatma Gandhi National

Rural Employment Guarantee Act (MGNREGA) for creating employment opportunities through activities such as soak pit construction and afforestation.

- **Promotion of social forestry for afforestation**

Encouraging social forestry initiatives to augment green cover and enhance ecological resilience.

- **Utilisation of DMFT funds**

Leveraging DMFT funds to support initiatives aimed at enhancing living conditions and economic opportunities for the local populace.

- **Organic farming**

Promoting organic farming practices to improve soil health and foster sustainable agricultural practices.

- **Decentralised renewable energy**

Exploring the potential of decentralised renewable energy projects that can provide sustainable energy and also generate alternate livelihoods across the region.



Solar-powered overhead water tank, Bokaro

Local leaders highlighted the importance of adequate resources and effective implementation strategies, emphasising the need for decentralised planning and community participation in the coal belt. It was suggested that the Gram Panchayat should have a budget for future planning and criticised the top-down implementation of the same scheme in every Panchayat, without considering the local context. In Ramgarh district, the focus was on raising awareness at the grassroots level, afforestation, and the conservation of existing forests. The participants highlighted the importance of soil conservation and the need to conserve rainwater through the construction of soak pits or tanks. Personal testimony from a local resident showcased the effectiveness of rainwater harvesting systems at home, which included the use of bleaching powder for purification.

Based on the field experiences, a PRI member from Bokaro district emphasised the importance of constructing bunds across small rivers to manage water flow and prevent soil erosion and *dobhas* (small water bodies) and bunds at the foothill for water retention in wells. The potential for renewable energy was discussed, with plans to implement NADEP (a composting technique) and biogas production by Gram panchayats. In North Chotanagpur, the representatives suggested formation of committees in which youth and senior citizens can participate for conservation of *jal, jangal aur zameen* (water, forest and land) by strengthening local institutions like the Gram Sabha⁴, implementation of Forest Rights Act⁵ (FRA), and Panchayati Raj Extension for Schedule Areas⁶ (PESA) to ensure a true socially inclusive Just Transition pathway in the mining-affected regions.

2. Exploring alternative agricultural practices in Santhal Pargana

In Dumka, farmers are increasingly abandoning agriculture due to low yields and insufficient revenue generation. To address this, the panel discussion focused on encouraging crop diversification and exploring alternative agricultural produce like mushrooms. The key suggestions were:

- **Exploring alternative crops**

Promoting cultivation of crops that require less water but offer high market value. This can be achieved through research collaborations between agricultural experts, farmers, and relevant stakeholders. Training and resources should be provided to farmers on cultivation techniques for these alternative crops.

- **Formation of climate mitigation committees in Panchayats**

Participants proposed the formation of dedicated climate mitigation committees within Panchayats to drive local climate action. These committees would be responsible for devising and implementing location-specific strategies for climate resilience, monitoring environmental changes, and fostering community participation in adaptation efforts.

- **Revitalising redundant committees for awareness**

The participants proposed reactivating and repurposing inactive committees to focus on spreading information and raising awareness about climate change. These committees can organise workshops, training sessions, and awareness campaigns to educate community members about the causes and effects of climate change, as well as the actions they can take to mitigate its impacts.

- **Exploring sustainable irrigation**

Solar based sustainable irrigation practices can be explored to enhance agricultural productivity and reduce consumption of fossil fuels.

- **Potential for agrivoltaics**

A combination of agriculture and solar power generation can be explored for better economic prospects of farmers and sustainable use of resources.

A significant aspect highlighted by a district agriculture department official from Dumka was the distribution of drought-resistant seeds like Ragi, which require minimal water for cultivation. Through initiatives like the *Kshetriya Khadya Suraksha Mission*⁷ (Food Security Mission), efforts are underway to render farming economically viable despite water scarcity. The provision of training and subsidies, particularly for practices like drip irrigation, aids farmers in effectively adapting to limited water resources.

Additionally, a PRI representative emphasised the importance of collective thinking for societal development, particularly targeting school-going children. Given that women are often left behind to manage the households, efforts should focus on empowering them to become advocates for climate change. He proposed the introduction of 'Poshan Vatika' or school gardens in educational institutions as practical learning platforms for students. Through active participation in planting trees, growing fruits, vegetables, and herbs, students can gain invaluable insights into sustainability, nutrition, and ecosystem dynamics.

⁴ Gram Panchayat is a basic governing institution in Indian villages.

⁵ The Forest Rights Act (FRA), 2006 recognizes the rights of the forest dwelling tribal communities and other traditional forest dwellers to forest resources, on which these communities were dependent for a variety of needs, including livelihood, habitation and other socio-cultural needs.

⁶ The Provisions of the Panchayats (Extension to Scheduled Areas) Act, 1996 abbreviated as PESA Act is a law enacted by the Government of India for ensuring self governance through traditional Gram Sabhas for people living in the Scheduled Areas of India.

⁷ National Food Security Mission (NFSM) is a Centrally Sponsored Scheme launched in 2007 to increase the production of rice, wheat and pulses through (i) area expansion and productivity enhancement, (ii) restoring soil fertility and productivity, (iii) Creating employment opportunities



Coalfields of Giridh

3. Strengthening local infrastructure and promoting sustainable practices in Kolhan

The discussions at the CoP in Kolhan highlighted the need for strengthening local infrastructure, promoting sustainable practices, and empowering communities to address these challenges. Key insights and recommendations from the discussions included:

- **Water conservation and management**

Participants emphasised the critical need to address water scarcity in Kolhan, a region prone to drought and water stress. They proposed leveraging MGNREGS funds to construct rainwater harvesting structures like dobhas, recharge wells, and ponds, as well as investing in check dams and micro-irrigation projects at the Panchayat level. These measures aim to increase the water table, ensure a reliable water source for agriculture, and optimise water usage.

- **Sustainable agricultural solutions through Panchayats**

Participants highlighted the need to transition towards organic farming by promoting the use of organic manure and fertilisers, along with water-efficient irrigation techniques such as drip irrigation along with solar based irrigation. They also emphasised the importance of soil health and suggested regular soil testing within Panchayats to guide agricultural practices.

- **Awareness building drives**

The discussions shed light on the importance of organising drives in collaboration with the forest department and grassroots CSOs/NGOs for afforestation and conservation efforts.

- **Empower Village Forest Committees**

Establishing and empowering Village Forest Committees to combat illegal mining and logging activities. This initiative could safeguard forests and preserve biodiversity by actively monitoring and preventing unauthorised exploitation of natural resources.

- **Utilise Funds from Birsa Harit Gram Yojana and Didi Bagiya Yojana**

Investing funds from these schemes to establish plantations of fruit trees and medicinal plants. This effort not only contributes to environmental conservation but also promotes biodiversity and provides additional sources of income for local communities.

Participants mentioned the importance of community ownership and actions, including implementing bans on plastic plates and thermocol plates during marriages and events organised by Panchayats. Another crucial initiative highlighted was the establishment of a seed bank aimed at conserving indigenous plant varieties and enhancing agricultural diversity, while serving as a valuable resource for farmers, mobilising community efforts to prevent forest fires and protect valuable forest ecosystems.



Solar street light in Dumka



Agricultural fields in Dumka



Participants during CoP 2.0 presenting local climate action plans

4. Conservation and sustainable development in Palamu

In Palamu, discussions highlighted the region's unique challenges related to water scarcity and unsustainable agricultural practices. Participants emphasised the need for a comprehensive approach to conservation and sustainable development, focusing on water conservation, soil health, climate-smart agriculture, and community engagement.

- **Water conservation and management**

Participants discussed solutions to enhance water conservation and management, including, reinforcing farm bunds and planting trees to retain rainwater, promoting drip irrigation systems, and regularly cleaning and deepening ponds. Additionally, they suggested modifying houses and village wells to collect rainwater for groundwater recharge.

- **Soil health and sustainable agriculture**

Participants discussed the need to focus on transitioning towards climate-resilient crops like maize and pulses in water-scarce areas of Palamu, gradually reducing chemical fertiliser and pesticide use, and promoting organic fertilisers and manure. Regular soil testing within Panchayats was also suggested to monitor soil health and guide agricultural practices.

- **Climate change mitigation**

PRI members stressed upon the need to promote the use of renewable energy sources like biogas to reduce

dependence on fossil fuels and transition towards millet-based agricultural systems to combat water scarcity and adverse weather conditions. Sustainable infrastructure practices were emphasised to maintain land water percolation capacity.

- **Community engagement and capacity building**

Members urged to invest resources in training programmes on modern agricultural practices, including horticulture, soil health testing, and agricultural machinery. Participants divulged the importance of raising awareness among farmers about the various government schemes available to them and the role of PRIs in facilitating access to these schemes. Participants also suggested conducting afforestation drives and issuing Panchayat-wise manifestos to promote community engagement in water conservation and climate action.

- **Utilisation of Government funds and resources**

Utilising MGNREGS and Birsa Harit Gram Yojana funds



Agricultural field in Daltonganj



for plantation drives and rainwater harvesting structures within panchayats. Using GPDP provisions for funding water conservation structures and climate change mitigation efforts.

awareness and mobilise farmers for these programmes and offered additional support for hybrid seeds and technical assistance with farm machinery.

The District Agriculture Officer (DAO) highlighted the issue of farmers cultivating water-intensive crops like wheat and paddy, which are unsuitable for Palamu's arid conditions. **He emphasised the need for crop and livestock insurance** and explained various government schemes available to farmers, urging the role of Panchayati Raj Institutions (PRIs) in facilitating access. Sharing his own experiences as a farmer's son from Palamu, he highlighted challenges like crop failure and drought. The Deputy Project Director (Dy. PD) of ATMA Palamu **detailed the training programs and support ATMA offers**, including horticulture, soil health testing, and agricultural machinery. He urged **PRI members to raise**



Participants at CoP 2.0 discussing impacts of climate change for an activity



Participants during CoP 2.0 presenting their activities



FUTURE OF LOCALISED CLIMATE ACTION IN JHARKHAND: LEARNINGS FROM THE CoP (2.0)



The consultations held during CoP 2.0 emphasised the indispensable role of PRIs as the fulcrum of climate action planning in Jharkhand and that most of the community-led climate actions occur at the Panchayat level. As the cornerstone of rural governance, PRIs are uniquely positioned to integrate climate considerations into village-level development plans (GDPDs), ensuring that climate resilience is prioritised alongside other developmental goals. However, their role cannot be limited to planning alone; PRIs must also be empowered to implement and monitor climate action initiatives at the grassroots level. There is a need for greater transparency, accountability, and community participation in the allocation and utilisation of both public and non-public funds for climate action in Jharkhand.

To realise this vision, the CoP deliberations highlighted several key areas for action:

1. Community engagement and capacity building

Awareness programs: Initiate programs to educate local communities about climate change and its impacts, involving Gram Panchayats, local leaders, and community members to foster a deep understanding of climate issues.

Stakeholder engagement: Conduct regular meetings and consultations with community members, local elected representatives, civil society organisations, and experts to identify local challenges and co-create solutions.

2. Mapping and assessment

Occupational mapping: Identify the occupations of community members in coal mining areas and assess the impact of transitioning to renewable energy sources.

Vulnerability assessments: Evaluate the socio-economic and environmental vulnerabilities of communities and map the scale of climate-induced migration from the state. This would help in tailoring adaptive strategies effectively.

3. Adaptation mechanisms formation of working group

Community-led initiatives: Mobilise progressive farmers, students, teachers, and SHG members to form working groups focused on climate change action and adaptation strategies.

Training and support: Provide these groups with training and resources from state departments to implement small-scale irrigation solutions, rainwater conservation, and forest protection initiatives.

4. Sustainable agriculture

Irrigation solutions: Implement small-scale irrigation projects, such as check dams and rainwater harvesting at the Panchayat level, to ensure water availability for agriculture.

Forest conservation: Protect and manage local forests to secure essential resources like food, fodder, and fuel.

5. Mitigation strategies strengthening Panchayats

Empower Gram Panchayats with greater financial autonomy and decision-making power. Enhance their capacity to implement schemes like MGNREGS and invest in renewable energy infrastructure using DMFT and CSR funds.

Address transparency and accountability concerns in DMFT fund utilisation to ensure that funds are used for intended beneficiaries.

6. Skill development

Develop programmes to reskill coal workers for jobs in renewable energy and sustainable agriculture, bridging the gap between existing workforce skills and clean energy sector requirements.

7. Investing in renewable energy

Decentralised renewable energy solutions can meet local energy needs, empower communities and provide alternate livelihoods. Increasing awareness about government programmes, providing subsidies, and offering innovative financing options are crucial steps to make renewable energy more accessible and affordable.

8. Institutional framework for Just Transition

Consortium development: Establish a consortium including community members, local elected representatives, civil society organisations, think tanks, government officials, and thought leaders to develop a state-level framework for Just Transition.

Policy advocacy: Advocate for policies supporting economic diversification, social protection, and sustainable livelihoods in coal mining regions.

9. Educational initiatives

Integrate climate education into school curriculums and conduct Gram Sabha meetings to raise awareness about climate change and sustainable practices.

10. Climate resilient Gram Panchayats

In collaboration with the state government, a select few Gram Panchayats to be developed as 'climate resilient Gram Panchayat'. Learnings from this lighthouse initiative could be used to establish a standard operating procedure for replication across the state.

Conclusion

The initiative of CoP has demonstrated a bottom-up approach to tackling climate change with an initial promise in terms of how local institutions can play an instrumental role in leveraging traditional knowledge to develop and implement local climate action plans. These consultations should continuously inform the design of climate action frameworks and policies, ensuring they are responsive to local needs and grounded in traditional wisdom. Building on this success, the CoP can serve as a knowledge platform to foster further dialogues and collaborations. It can inspire the creation of similar platforms in other states, especially those bearing a disproportionate burden of climate change and its consequences.



Women sorting their produce

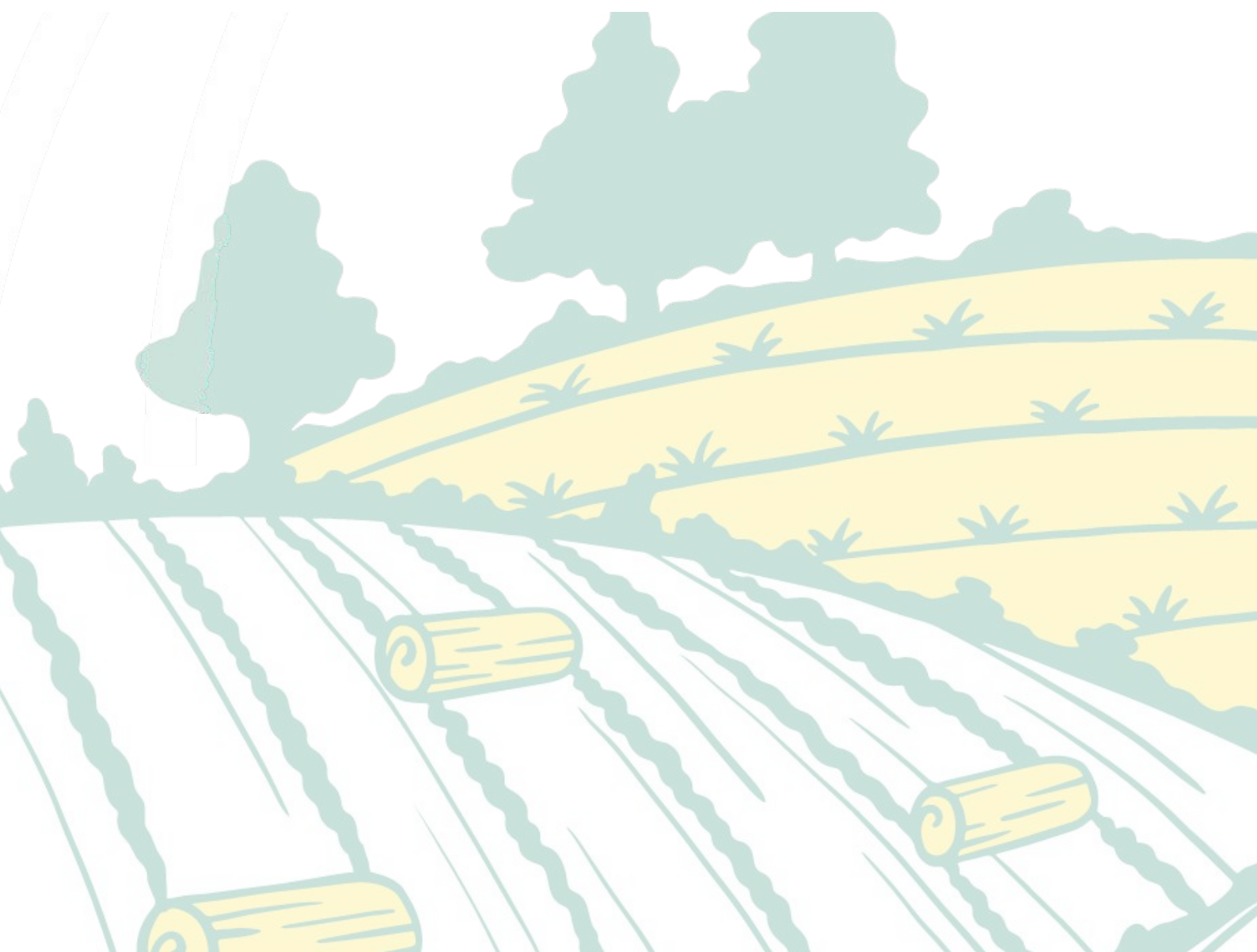


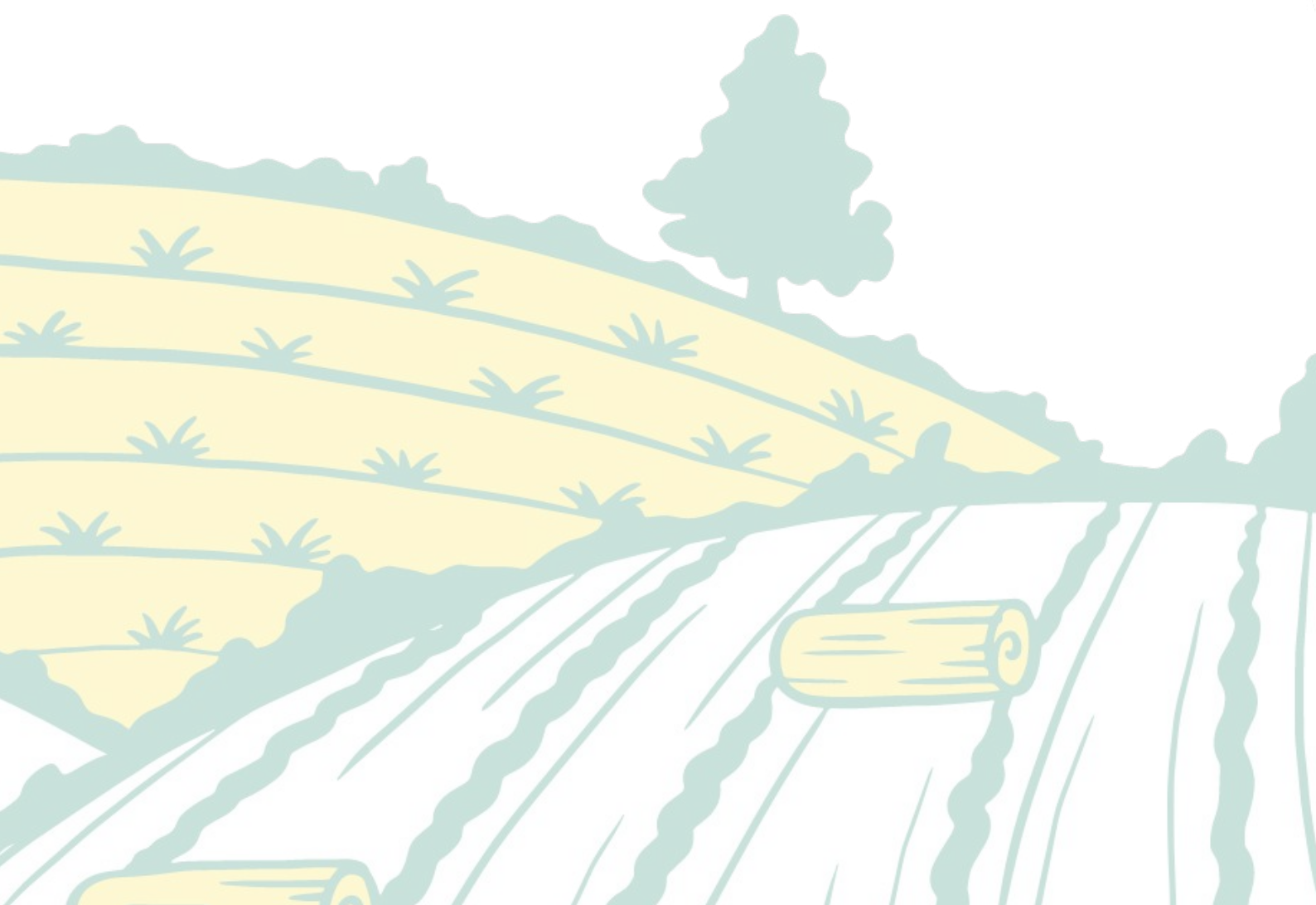
Participants and the organising team after CoP 2.0 in Palamu



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