

# Chhattisgarh State Centre For Climate Change



## Quarterly Newsletter

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### *Message from Editor's Desk.....*

**Dear Readers,**



It gives me great pleasure to present the latest edition of our quarterly newsletter, highlighting our progress in advancing climate action and sustainable development in the state.

This quarter, we organized the 2nd State-Level Consultative Workshop on the Chhattisgarh Ecorestoration Policy, bringing together a diverse group of stakeholders to refine a comprehensive and actionable policy for ecological restoration. The workshop emphasized cross-sectoral approaches, integrating sustainable practices across forests, agriculture, wetlands, and urban areas while aligning with Sustainable Development Goals (SDGs).

Additionally, we conducted a workshop on operationalizing the State Action Plan on Climate Change, emphasizing sustainable habitats and climate-smart agriculture. Expert insights on eco-cities, groundwater management, and climate-resilient farming provided a roadmap to address key challenges in Chhattisgarh.

Among this quarter's highlights, the Solar Sujala Scheme has significantly improved farmers' livelihoods through clean energy solutions, reaffirming our commitment to renewable energy and environmental conservation.

We welcome your feedback and suggestions for upcoming issues of this newsletter.

**(Arun Kumar Pandey)**

**APCCF and Nodal Officer<sup>I.F.S.</sup>**

**Chhattisgarh State Centre for Climate Change  
Aranya Bhawan, Nava Raipur**

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## 2nd State-Level Consultative Workshop on Chhattisgarh Ecorestoration Policy was held on 18th November 2024

The Chhattisgarh State Centre for Climate Change (CGSCCC), under the Department of Forest and Climate Change, organized the 2nd State Level Consultative Workshop on Chhattisgarh Ecorestoration Policy. This pivotal event brought together over 75 participants, including government officials, researchers, academicians, NGOs, and community leaders, to refine the draft policy and advance efforts in environmental conservation and socio-economic development.

The workshop began with a ceremonial lamp lighting, symbolizing a collective commitment to ecological restoration. Shri B.P. Singh, IFS (Retd.), CGSCCC, welcomed participants, emphasizing the importance of ecorestoration in mitigating climate change, fostering biodiversity, and supporting livelihoods.

Eminent speakers, including Dr. R.K. Singh, IFS (Retd.), Former PCCF & HoFF, Chhattisgarh and Dr. Sanjay Singh, Scientist G and Head at the Eco Rehabilitation Centre of ICFRE, Prayagraj highlighted critical aspects of ecorestoration. Dr. R.K. Singh underscored the necessity of a cross-sectoral approach, integrating sustainable practices across forests, agriculture, wetlands, and urban areas. He also emphasized the alignment of policy with Sustainable Development Goals (SDGs) and the vital role of local communities in restoration initiatives.



Dr. Sanjay Singh elaborated on restoration techniques, such as revegetation with native species, ecological succession, and rehabilitation of mined-out areas through soil enrichment and biodiversity conservation. He emphasized the importance of community engagement and evidence-based approaches for scalable outcomes.





**Thematic Discussions:** Participants were divided into groups focusing on specific ecosystems—forests, agriculture, wetlands, mining, and urban areas. Each group identified key challenges and proposed actionable solutions, such as:

- Promoting multilayered vegetation in forests and enhancing community involvement.
- Implementing natural farming practices and strengthening market linkages in agriculture.
- Conducting baseline surveys and enforcing regulations for wetland conservation.
- Advocating for sustainable mining practices and comprehensive reclamation plans.
- Managing urban ecosystems with a focus on pollution control and master planning.

### Conclusion and Way Forward

The workshop concluded with a vote of thanks from Shri Arun Kumar Pandey, IFS, APCCF and Nodal Officer, CGSCCC highlighted the collective effort of stakeholders in shaping an actionable policy. The recommendations and discussions will serve as a foundation for addressing ecological challenges and promoting sustainable practices across Chhattisgarh.

This workshop is an state's effort towards to ecological restoration, setting a precedent for integrating environmental priorities with socio-economic goals.



## Workshop on Operationalizing Chhattisgarh's State Action Plan on Climate Change was held on 28.11.2024

The Chhattisgarh State Centre for Climate Change (CGSCCC) hosted a landmark workshop focusing on operationalizing the Chhattisgarh State Action Plan on Climate Change (SAPCC) in sustainable habitats and agriculture sectors. The event drew a diverse group of stakeholders, including government officials, researchers, academicians, NGOs, and community leaders, all converging to deliberate on strategies for combating climate change.

### Key Highlights:

The workshop commenced with the lighting of the lamp and a welcome by Shri Arun Kumar Pandey, APCCF & Nodal Officer, CGSCCC. In his address, Shri Pandey emphasized the growing climate challenges faced by Chhattisgarh, including rising temperatures, deforestation, and water scarcity, and underscored the critical role of SAPCC in addressing these issues.

Padma Shri Uma Shankar Pandey, the keynote speaker, highlighted the irreplaceable value of water and urged collective action for conservation. His proposal for a "School of Water" and a dedicated university for water conservation in Chhattisgarh resonated strongly with the audience.



### Eminent Contributions:

The event featured special addresses by renowned experts such as Dr. Raghu Murtugudde, Professor, Climate Studies, IIT Mumbai and Dr. Kanwal Kamra Sujit, Founding Director, Terralife Envirotech Pvt Ltd., Bengaluru. Dr. Murtugudde introduced the "Drawdown Framework," emphasizing solutions like renewable energy, reforestation, and carbon capture. Dr. Sujit's vision of "eco-cities" and "Digital Twin Cities" for sustainable urban planning offered a forward-looking approach to urban development aligned with India's climate goals.





## Technical Sessions:

Technical sessions delved into innovative practices for sustainable habitats and climate-smart agriculture. Shri Abinash Mishra, IAS, Commissioner, Municipal Corporation, Raipur detailed Raipur's initiatives in groundwater management, solid waste processing, and urban greening. Shri Ritesh Saini's account of Ambikapur's zero-landfill model showcased transformative waste management practices.

In agriculture, Shri Amit Kumar, Partner, E&Y LLP highlighted vulnerabilities to monsoon fluctuations and proposed climate-smart interventions like solar-powered cold storage and agroforestry. Dr. Deepak Sharma, Professor, IGKV, Raipur presented advancements in climate-resilient rice varieties and sustainable farming methods, while Dr. Panneerselvam S. Ex. Director, WTC, Tamil Nadu, Agriculture University stressed water-efficient technologies for agriculture.

## Panel Discussions:

A panel moderated by Dr. Himanshu Poptani, Asst. Professor, NIT Raipur brought fresh insights into integrating climate-resilient strategies into urban and agricultural planning. Smt. R. Sangeetha, IAS, Secretary cum Commissioner of Excise Department, Raipur advocated for sustainable urban design and disaster-resilient housing, while Shri Bhupendra Pandey emphasized native species plantation and drip irrigation for efficient water use.

## Important Launches:

In this workshop a poster on air conditioner temperature regulation was launched along with two significant books—one documenting climate change success stories and another on mushroom varieties of Chhattisgarh.

## Conclusion:

Shri V. Sreenivasa Rao, PCCF & HoFF, Chhattisgarh applauded the CGSCCC team for organizing this pivotal event, emphasizing community participation as central to addressing climate change. He encouraged practices such as green energy adoption, plastic avoidance, and sustainable building designs.



## Solar Sujala Scheme: Improving Farmers' Economic Conditions and a Positive Step for the Environment

Among the renewable energy initiatives implemented by CREDA (Chhattisgarh Renewable Energy Development Agency) in the state, the “Solar Sujala Scheme” holds significant importance. The scheme aims to provide solar pumps to farmers for irrigation purposes. Through this initiative, farmers can avoid the use of expensive fuels like diesel due to the lack of electricity and benefit from an affordable and clean energy source. The scheme has proven to be a boon for the farmers of Mahasamund district, with approximately 5,649 farmers benefiting from it. It has gained immense popularity among farmers. For the financial year 2023–24, the district has been allotted a target of 650 solar pumps, which have already been installed.

Earlier, farmers with water sources but no access to electricity or those reliant on costly diesel pumps for irrigation now have solar pumps. This has not only reduced their expenses but also allowed their agricultural activities to continue seamlessly. Using solar pumps, farmers have found irrigation to be more affordable and convenient. Especially for those previously dependent on rainfall, water shortages are no longer a concern. Consequently, crop yields have increased, improving their economic conditions. Earlier, farmers had to spend lakhs of rupees on traditional electricity connections, and even then, electricity supply was often unreliable. Through solar pumps, farmers have achieved freedom from dependency on electricity and now have access to stable, clean, and cost-effective energy. This scheme is not only enhancing the economic conditions of farmers but is also a positive step for the environment as it promotes the use of clean energy.

For example, Mr. Muktidas Sahu, a farmer from Shankarpur village in Pithora block, shared his experience. He installed a 3 HP solar pump, which has significantly reduced his irrigation expenses while increasing crop production. Mr. Sahu mentioned that he is now able to cultivate paddy and maize efficiently on his farm. Within a short time, maize farming alone has yielded him a profit of ₹55,000.

(Source:- DPRCG, Chhattisgarh)





## Swachh Bharat Mission: Swachhta Didis Inspiring People Towards Cleanliness

The Swachh Bharat Mission aims to make India clean and free from open defecation. This campaign emphasizes the importance of cleanliness and health. Its objective is to improve waste management and promote sanitation in public spaces. The Swachh Bharat Abhiyan has been turned into a people's movement across the nation. Swachhta Didis are motivating and encouraging people to neither create mess themselves nor let others do so.

In Dhamtari district's Kurud Nagar Panchayat, Swachhta Didis are earning income from waste materials. Over the past year, these Didis have generated an additional income of ₹3.24 lakh by selling waste. An estimated ₹55,000 is still pending from the contracted company. This income has been generated from dry waste collected during door-to-door garbage collection.

Notably, Kurud Nagar Panchayat, consisting of 15 wards, has one SLRM (Solid and Liquid Resource Management) center where around 24 Swachhta Didis work. Every morning, these Didis set out to collect garbage from door to door. They collect items such as cardboard, plastic products, tin, iron materials, bottles, and newspapers from households. This waste is then brought to the SLRM center, where it is segregated. Wet waste is processed to make compost, while dry waste is crushed and packed in large sacks. Cardboard is baled using a baling machine. Every month, the dry waste is sold to the designated contracted firm by the Swachhta Didis.

Each SLRM center sells dry waste worth ₹30,000 to ₹50,000 every month. The income is deposited into the group's account, and the Didis distribute the earnings among themselves. In this way, apart from their monthly honorarium, the Didis earn an additional ₹1,500 to ₹2,000 every month.

(Source:- DPRCG, Chhattisgarh)



## India's participation in various Side-events during CoP29 UN Climate Change Conference at Baku, Azerbaijan

India collaborated with various agencies to organize side events on several aspects of climate action during the CoP29 UN Climate Change Conference at Baku, Azerbaijan, from 11th-22nd November, 2024. India participated in these side events and shared experiences/initiatives to deal with the climate challenges. India effectively articulated and showcased its commitment to climate action and various initiatives being taken at the international as well as domestic level.

### **Integrating Disaster Resilient Infrastructure into the Adaptation Strategies, 13.11.2024 (CDRI Pavilion)**

Organizers: Govt. of India (MoEFCC) and Coalition for Disaster Resilient Infrastructure (CDRI)

The session was designed as a panel discussion to explore key approaches, challenges, and opportunities for integrating disaster risk reduction (DRI) into national adaptation strategies, offering a pathway toward more resilient and sustainable development. The panel deliberated on how countries can better assess infrastructure vulnerability in the face of changing climate risks, how DRI can be embedded into national adaptation strategies and long-term development goals, innovative financing mechanisms, collaboration among stakeholders to advance DRI.

It was highlighted with 88 per cent of all adaptation costs attributed to infrastructure, holistic and integrated approaches to resilient and climate-compatible infrastructure development will play an increasingly critical role in strengthening the global climate adaptation agenda. Investing in resilient infrastructure not only mitigates risks but also yields significant long-term benefits, including sustainable growth, environmental sustainability, and improved quality of life.

CDRI's initiatives, such as the Infrastructure for Resilient Island States (IRIS), the Global Infrastructure Resilience Initiative (GIRI), and targeted efforts for critical infrastructure resilience, are actively assisting countries with technical support, data, and tools for resilience building.



**COP29**  
Baku  
Azerbaijan





## India's Green Recovery

Forests play a vital role in combating climate change by absorbing carbon, preserving biodiversity, and providing clean air and water. However, growing environmental pressures are challenging these essential ecosystems. In India, though, there is a positive shift. The India State of Forest Report (ISFR) 2023 shows that the country's Forest and Tree cover now spans 827,357 square kilometers, covering 25.17% of the nation's total land area. This includes 715,343 square kilometers (21.76%) of forest cover and 112,014 square kilometers (3.41%) of tree cover. This progress reflects India's successful efforts to balance development with environmental conservation.

### ISFR 2023: A Snapshot of India's Forests:

The India State of Forest Report (ISFR) 2023, published by the Forest Survey of India (FSI), is a biennial assessment of the country's forest resources using satellite data and field information. The first report was published in 1987, and the ISFR 2023 marks the 18th edition.

### The report is published in two volumes:

- Volume-I provides a national-level assessment, covering aspects like forest cover, mangrove cover, forest fires, growing stock, carbon stock, agroforestry, forest characteristics, and decadal changes.
- Volume-II offers detailed information on forest cover and field inventory data for each State/UT, including district and forest division-wise forest cover data.

### Growth in Forest Cover:

The India State of Forest Report (ISFR) 2023 highlights positive growth in India's forest cover, increasing from 698,712 km<sup>2</sup> in 2013 to 715,343 km<sup>2</sup> in 2023. Fire incidents have also decreased, with 203,544 fire hotspots recorded in 2023-24, down from 223,333 in 2021-22. In line with India's Nationally Determined Contributions (NDC) target, the country has achieved a carbon sink of 30.43 billion tonnes of CO<sub>2</sub> equivalent. This represents an additional 2.29 billion tonnes of carbon sink in Forest and Tree Cover since 2005, nearing the target of 2.5 to 3.0 billion tonnes of CO<sub>2</sub> equivalent by 2030. These advancements in forest cover and the reduction in fire incidents highlight India's progress toward sustainable environmental conservation.



(Source:- Press Information Bureau, Govt of India)



## The Impact of Climate Change on Medicinal Plants: A Growing Concern

**By:- Dr. Devyani Sharma, Chhattisgarh State Centre for Climate Change**

Medicinal plants, integral to human health for centuries, are now under threat due to climate change. These plants form the backbone of traditional healing systems and modern pharmacology, with over 50,000 species used globally for medicinal purposes. In Chhattisgarh, often referred to as the "Herbal State of India," medicinal plants are deeply embedded in the cultural and healthcare practices of local communities. However, climate change is causing a significant decline in the availability and diversity of these valuable resources.

Chhattisgarh is home to over 1,800 medicinal plant species, many of which are endemic to the region. Species such as *Aristolochia indica*, *Asparagus racemosus*, *Baliospermum montanum*, *Boerhavia diffusa*, *Ceropegia bulbosa*, *Eclipta alba*, *Embelia tsjeriam-cottam*, *Mucuna pruriens*, *Terminalia arjuna*, *Operculina turpethum*, *Stereospermum chelonoides*. (Chandrakar, A. "Threatened Medicinal Plants Species From Chhattisgarh." Life Sciences International Research Journal (2018)) are near threatened and need conservation efforts.

The effects of climate change on medicinal plants in Chhattisgarh are evident in multiple ways. Habitat loss and range shifts are significant concerns, as many plants are endemic to specific climatic zones. Irregular rainfall patterns have impacted the fruiting of *Buchanania lanzan*, directly affecting the livelihoods of local communities. Similarly, higher temperatures have reduced the growth rates of *Terminalia chebula*, a key species in Ayurvedic medicine. Phenological changes, such as shifts in flowering and fruiting seasons, disrupt the availability of bioactive compounds. For instance, studies in Chhattisgarh have observed altered growth cycles of *Emblica officinalis* (Amla), affecting its medicinal efficacy and harvesting periods.





Invasive species and diseases also exacerbate the problem. Plants like *Lantana camara*, an invasive species, have encroached on the habitats of several medicinal plants, reducing their populations. The spread of plant pathogens, facilitated by changing climatic conditions, poses additional threats to medicinal plants in the region.



Efforts to address these challenges must involve conservation, sustainable practices, and research. Protected areas and initiatives like the "Herbal Garden Scheme" in Chhattisgarh have shown promise in safeguarding rare species. Educating local communities about sustainable harvesting practices can help prevent overexploitation. Developing climate-resilient varieties of medicinal plants is another crucial strategy. For example, drought-resistant strains of *Asparagus racemosus* (Shatavari) are being developed by research institutions to withstand changing climatic conditions.

Policy support and enhanced research are also essential. Integrating climate adaptation strategies into biodiversity conservation plans and studying the impact of climate change on the phytochemical properties of medicinal plants will be critical for long-term sustainability. The decrease in medicinal plants due to climate change is not just an environmental concern but a public health issue, particularly in a state like Chhattisgarh, where traditional medicine is a lifeline for many. Urgent action is needed to protect these plants and ensure the health and well-being of future generations.



**The country's first and largest  
100 MW solar power plant is  
located in Rajnandgaon district.**



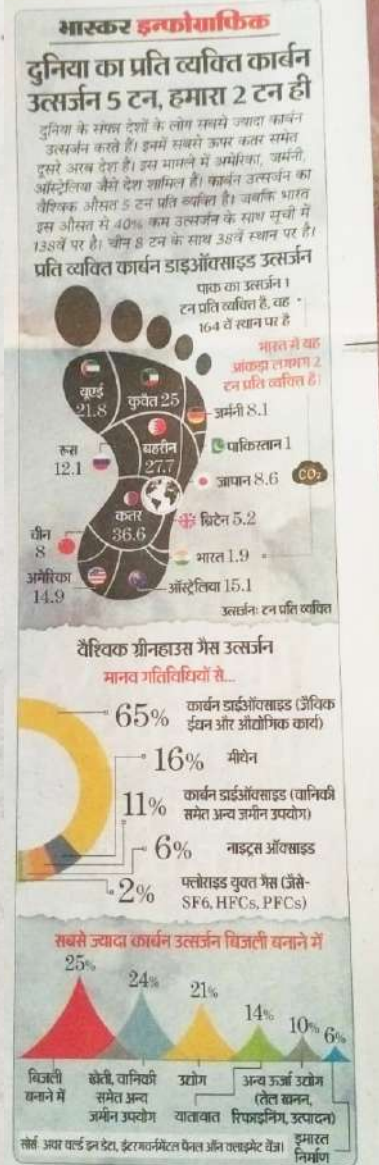
(Source:- Press Information Bureau, Govt of India)



## मौसम परिवर्तन से फलों की प्रजातियां हो रही हैं प्रभावित: डॉ. सतीश शर्मा



छत्तीसगढ़ राज्य जलवायु परिवर्तन केन्द्र में गुरुवार को व्याख्यानमाला का आयोजन किया गया। इंडियन इंस्टिट्यूट ऑफ साइंस के डॉ. एनएच रविन्द्र नाथ ने जलवायु परिवर्तन के क्षेत्रीय प्रभाव के बारे में बताया। फाउण्डेशन ऑफ इकोलॉजिकल सिस्टमेटिक्स के विशेषज्ञ डॉ. सतीश शर्मा ने फलों की प्रजातियों पर जलवायु परिवर्तन के प्रभाव के बारे में बताया। कार्यक्रम में वन संरक्षक वी. श्रीनिवास राव, अरुण कुमार पाण्डेय शामिल हुए।



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