

**IN THE HON'BLE NATIONAL GREEN TRIBUNAL
NEW DELHI**

OA No.632 of 2023

IN THE MATTER OF SUO MOTO COGNIZANCE

**In Re: News Item Published in The Hindu dated 06.10.2023 titled
"Pollution takes a front seat as Stubble Fires Spike in Punjab"**

INDEX

Sr. No.	Particulars	Page No.
1.	Status/Action Taken Report on behalf of Punjab Pollution Control Board and the State of Punjab in compliance of order dated 19.01.2024.	1-13
2.	<u>Annexure A</u> Letter no. 5672-85 dated 28.02.2024 addressed to Chairperson CAQM alongwith Action Plan for Control of Crop Residue Burning in the State of Punjab (2024-25)	14 to 62

Place: Patiala

Date : 19.03.2024


(Gurindar Singh Majithia)

Member Secretary
Punjab Pollution Control Board
On behalf of State of Punjab

**Member Secretary
Punjab Pollution Control Board
PATIALA**

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, NEW DELHI

Original Application No. 632 of 2023

In the matter of Suo Moto Cognizance

In Re: News Item published in The Hindu dated 06.10.2023 titled "**Pollution takes a front seat as Stubble Fires Spike in Punjab**"

Status / Action taken report on behalf of Punjab Pollution Control Board and the State of Punjab in compliance of order dated 19.1.2024.

RESPECTFULLY SHOWETH

1. That briefly stated, the Hon'ble National Green Tribunal was pleased to take Suo Motto Cognizance of a News Item published in The Hindu dated 06.10.2023 titled "**Pollution takes a front seat as Stubble Fires Spike in Punjab**" and issued notice to the respondents namely the State of Punjab through its Chief Secretary, Ministry of Environment, Forest and Climate Change through its Secretary and the Director Commission for Air Quality Management. The Hon'ble Tribunal has passed certain orders in the case and the status reports had accordingly been filed on behalf of the State of Punjab by the Member Secretary, Punjab Pollution Control Board.
2. That in terms of the directions issued by the Hon'ble Tribunal vide order dated 29.11.2023, the State of Punjab has filed action plan disclosing phase wise proposed action including various preventing steps for the year 2024 also indicating the authorities accountable for the implementation of the same. After considering the action plan filed by the State of Punjab, the Hon'ble Tribunal vide order dated 19.01.2024 observed that the component of definitive time schedule is lacking, there are no proper linkages/ manifest system between ex-insitu management. The Hon'ble Tribunal vide order dated 19.01.2024 has suggested certain components namely Assessment, Mechanical removal of stubble, Processing of stubble, Monitoring and

22

surveillance, Hotspot, Analysis and Remedial action for incorporation in the action plan.

3. That the Commission of Air Quality Management in NCR and Adjoining Areas has also directed the State of Punjab to submit the Action Plan incorporating the observations made by Hon'ble Supreme Court in Writ Petition (Civil) No. 13029 of 1985 M.C. Mehta V/s Union of India and others, the points deliberated in the meetings taken by Cabinet Sub-committee as well as the observations made by Hon'ble National Green Tribunal.
4. That the State of Punjab has accordingly revised the Action Plan for Control of Crop Residue Burning in State of Punjab dated 21.02.2024 (2024-2025) after incorporating the inputs received from various stake holder departments in consideration of the orders passed by the Hon'ble Supreme Court of India in Writ Petition (Civil) No. 13029 of 1985 M.C. Mehta V/s Union of India and others, directions issued by the Hon'ble National Green Tribunal vide order dated 19.01.2024 passed in OA no. 632 of 2023, the directions issued by the Commission of Air Quality Management in NCR and Adjoining Areas including the issues raised by the Cabinet Sub-committee. A copy of the Action Plan for Control of Crop Residue Burning in State of Punjab dated 21.02.2024 (2024-2025) is enclosed herewith as **Annexure-A**.
5. That the directions of the Hon'ble Tribunal given vide order dated 19.01.2024 have been duly considered and incorporated in the Action Plan for Control of Crop Residue Burning in State of Punjab dated 21.02.2024 (2024-2025). The brief facts in terms of the directions of the Hon'ble Tribunal dated 19.01.2024 are mentioned herein below:

A. Assessment:

The State of Punjab is an agricultural State with wheat and rice as major crops. Paddy is cultivated in approximate 31 lakh hectare area in Punjab resulting in generation of about 19.5 million tons of paddy straw. The year-wise details of area under paddy sown in the State of Punjab during Kharif season viz-a-viz paddy straw generation are as under:

215

Year	Area under (Lac ha)	Area under Non-Basmati (Lac ha)	Area under Basmati (Lac ha)	Paddy Straw Generation (Million Ton)		
				From Area under Non-Basmati @ 6.5 T/ha	From Area under Basmati @ 5.5 T/ha	Total Paddy Generation
2022	31.67	26.73	4.94	17.37	2.51	20.08
2023	31.00	25.00	6.00	16.25	3.30	19.55
2024 (Est.)	31.54	24.78	6.58	16.10	3.43	19.52

B. Mechanical Remover of Stubble:

- a) As on 01.02.2024, 138022 Crop Residue Machines have been provided to the farmers and 24,736 Custom Hiring Centres (CHC) have been established.
- b) The subsidy/ financial assistance for procurement of various Crop Residue Machines is provided under Central Sector Scheme Promotion of Agriculture Mechanization for in-situ Management of crop residue.
- c) For the financial year 2024-25 the scheme is likely to be implemented on Sub-Mission on Agricultural Mechanization (SMAM) funding pattern (60:40).
- d) In order to meet the targeted baling capacity, maximum Balers and Rakers shall be supplied as a part of the new component under Crop Residue Machines scheme for Ex-situ application.
- e) All the machines have been mapped by the respective Districts. New machines shall also be mapped accordingly.
- f) GAP analysis with regard to the availability of CRM machine with each District of the State has been done by the respective District.

215

- g) Allocation of CRM will be done as per the demand from respective Deputy Commissioners.

C. Processing of the Stubble:

- a) As on 01.02.2024, 138022 Crop Residue Machines have been provided to the farmers and 24,736 Custom Hiring Centres (CHC) have been established.
- b) The paddy straw is being promoted to be used in Biomass Power Plants, CBG plant, Industrial Boilers, Pelletizations plants. The Punjab Government is actively promoting the ex-situ utilization of paddy straw.
- c) The Government of Punjab is working on a proposal for setting up of an industrial estate wherein a common boiler of large capacity based on paddy straw is proposed to be setup which shall supply steam to the units to be established in the proposed industrial estate.
- d) The Government of Punjab has made it compulsory for the upcoming distilleries/ existing distilleries setting up new boilers in the State to mandatorily use paddy straw as fuel.
- e) Also, the State of Government has offered the incentives of SGST reimbursement on the cost of the boiler (based on paddy straw) to be installed in industries such as Sugar Mills, Paper Mills and boilers of steam generation capacity more than 25 TPH under the PBIP Investment promotion policy of the State of Punjab.

D. Monitoring and Surveillance

- a) Punjab Pollution Control Board (PPCB) shall ensure monitoring of incidents of burning of paddy straw through Punjab Remote Sensing Centre and ensure SMS alert is sent to field functionaries to take action on incidents of stubble burning.
- b) PPCB shall ensure that mobile and web-based application be made operational in paddy season, in which role-based Login (Village Nodal, Cluster, Sub division/Tehsil and district level) be

215

provided to various officials for end-to-end reporting and action taken for each fire incidents.

- c) PPCB shall ensure that the mobile based application for both Android and IOS platform is made operational by 15th September 2024
- d) PPCB shall ensure that Proper training is imparted to all the field functionaries for smooth operation of the mobile based application.
- e) PPCB shall ensure that all data with respect to burning of crop residue as obtained from Remote Sensing authorities and action taken on the incidents and various MIS reports are available through a web-based application with facility to have a dashboard to drill down data.
- f) The Board shall ensure that in cases of persistent defaulters of crop residue burning, appropriate coercive and punitive action is taken including launching of prosecution under Section 15 of the Act of 1986.
- g) Enforcement the measures put in place in compliance of various orders of the Hon'ble National Green Tribunal and as per the provisions of Air (Prevention & Control of Pollution) Act, 1981.
- h) Environmental Compensation is being imposed on the defaulters in accordance with the mandate of order dated 10.12.2015 of the Hon'ble National Green Tribunal passed in OA no. 118 of 2013.

E. Hotspot:

In order to drive pointed interventions to tackle the menace of stubble burning in the Kharif harvesting season of 2024, the districts have identified hotspot villages based on the historical data of the fires. Till date 663 villages have been identified as hotspots. Hotspot monitors (SDM, Tehsildar, Cluster, Nodal Officers) will personally visit these villages and ensure that no fire incidents occur in these villages. Extensive exercise has been done by all districts to ensure fire dousing

J/S

equipment and manpower for dealing with fires. Arrangements for fire tenders have been done at the block level to douse fires, if happened. Districts will be conducting extensive IEC activities (detailed activity calendar enclosed in the plan) across these villages to spread awareness towards stubble burning. Detailed district wise hotspot management plan along with details of the fire management equipment and personnel involved is attached as annexure as part of the district action plans.

F. Analysis:

- a) Punjab Pollution Control Board will monitor the ambient air quality of the major cities and make the data available to district authorities and the State to ensure further action in case of deterioration of quality.
- b) Board has prepared a list of top 3 hotspot villages of all districts in State of Punjab of paddy harvesting season 2023 and relative values of these hotspots has been also noticed in year 2021 and 2022 as per data obtained from PRSC taking 2023 as a base.
- c) M/s Kansai Nerolac Paints Limited, Mumbai will provide Mobile CAAQMS van to PPCB for Ambient Air quality (PM10, PM2.5, SO2, NOX, CO, O3, BTEX, NH3) under Corporate Social Environment Responsibility.
- d) A proposal is under active consideration of the Punjab Pollution Control Board to install adequate number of Ambient Air Quality Monitoring Station at the hotspots.
- e) The proposal is also under consideration of the Punjab Pollution Control Board to monitor the Ambient Air Quality through Mobile Vans where monitoring stations have not yet been provided.

G. Remedial actions:

- a) The Deputy Commissioner and SSPs of the district shall jointly hold District Level Monitoring meeting with all the stakeholders to strictly enforce the orders banning paddy stubble burning.



- b) District Administration shall ensure appointment of various officials like Village Nodal officer, Revenue officer (Patwari), Cluster officer, Tehsildar, Police and SDM to monitor the stubble burning incidents.
 - c) District Administration shall ensure visits to hot spots (villages where more than 75% area of the village burnt since last three years as per the stubble burning data) by senior officers of the district and make special arrangements to contain the burning of crop residues in these villages.
 - d) District Administration shall ensure that the information of various officials like Village Nodal officer, Revenue officer (Patwari), Cluster officer, Tehsildar, Police and SDM be provided to PPCB in advance stage before the beginning of stubble burning so that log in id of various officials be entered into PRSC system.
 - e) It shall be ensured that nodal officer visits every site of the incident within 24 hours and environment compensation shall be imposed as per directions of NGT by the designated officer of the District Administration.
 - f) District Administration shall ensure optimal utilization of machinery provided for in-situ management of the crop residue.
 - g) District Administration shall ensure usage of fire tenders to douse the fires as a remedial measure with the help of local authorities
 - h) The remedial action suggested by the Hon'ble Tribunal shall be ensured.
6. That apart from the above the Hon'ble Tribunal has also issued direction vide order dated 19.01.2024 that the State is required to submit periodic report indicating the effective implementation of the action plan. In compliance to this direction of the Hon'ble Tribunal, the activities performed by the Department of Agriculture and Farmers Welfare, Punjab Energy Development

Agency and Punjab Pollution Control Board with effect from the month of January 2024 till 15.03.2024 are summarized herein below:

A. Department of Agriculture

January 2024

i. 10.01.2024:

State Level Workshop-cum-Training on Space-based technology for monitoring of stubble burning under Agrogeoinformatics held by Punjab Remote Sensing Agency.

ii. 08.01.2024:

Meeting regarding Comprehensive Action Plan to address stubble burning in Punjab held under the Chairpersonship of Worthy Special Chief Secretary Agriculture Punjab to facilitate the implementation of the CRM scheme in the State.

iii. 30.1.2024:

Meetings of the State Level Committee for selection on establishment of paddy supply chain under the Chairpersonship of Director Agriculture Punjab held. Till date 48 projects for establishment of supply chain projects have been sanctioned.

February 2024

iv. 13.2.2024:

Meetings of the State Level Committee for selection on establishment of paddy supply chain under the Chairpersonship of Director Agriculture Punjab held. Till date 48 projects for establishment of supply chain projects have been sanctioned.

v. 26.02.2024:

Meeting of State Level Project Screening Committee for approval of the projects for consideration under RKVY for the year 2024-25 under the Chairpersonship of Special Chief Secretary, Agriculture, Punjab. In the meeting the proposal under the Crop Residue Management Scheme for



the year 2024-25, has been approved for further consideration of the State Level Sanctioning Committee.

March 2024

vi. 14.03.2024:

Meeting regarding actionable points of concerned stakeholder departments of stubble burning management in the state under the chairmanship of Special Chief Secretary Agriculture.

vii. 15.3.2024:

7.5 lakh SMS shared with farmers regarding the success story of CRM technology on 15.3.2024. The message has a link for a small video hosted on youtube, wherein a farmer who has adopted the CRM technology shares his experience.

viii. Field Days and Farmer Outreach Programs:

- a) PAU, along with its KVKs and Farm Advisory Centers, organized 15 field days to showcase Crop Residue Management (CRM) technologies to farmers.
- b) Additionally, 2 traveling seminars were conducted to encourage farmers to adopt CRM practices.
- c) A front-line travel seminar was organized on February 24, 2024, with the participation of the Director of Agriculture and Farmers Welfare, Punjab.
- d) These programs reached over 2,000 farmers, who witnessed CRM technologies being demonstrated in the field.
- e) Reports from the field days indicate good crop stands, free of pests and diseases, and no lodging observed at any location.

J/S

B. Punjab Energy Development Agency (PEDA)**February 2024****a) 07.02.2024**

Meeting taken by Hon'ble Minister of New Renewal Energy Sources (NRES) Government of Punjab on 07.02.2024, for status review of projects and discussion on Draft Punjab State Policy for Biofuels.

b) 27.02.2024

Attended the meeting taken by Sh. Tarun Kapoor, Advisor to Prime Minister (through VC) on 27.02.2024, regarding issues being faced by Compressed Biogas Project Developers.

c) 28.02.2024

Status Review Meeting held on 28.02.2024 with Operational/ Under Construction CBG Projects Developers.

d) 28.02.2024

Status Review Meeting held on 28.02.2024 with CBG Projects Developers which are at pre-construction activities Clearance/ approvals/DPR Stage.

March 2024**a) 06.03.2024**

Attended the meeting taken by Financial Commissioner, Department of Forest on 06.03.2024, to resolve the issues being faced by CBG Developer for want of Clearance/approvals.

b) 11.03.2024

Attended the meeting taken by Ministry of Jalshakti, Department of Drinking Water and Sanitation, Govt. of India on 11.03.2024, regarding review of GOBARdhan initiative.



c) 12.03.2024

Meeting held with Department of Agriculture and Farmers Welfare, Govt. of Punjab, on 12.03.2024 regarding establishment of crop residue supply chain under CRM 2023-24.

d) Meeting of State Level SATAT Committee to be held in March 2024.**e) Meeting with Bankers for Financial Closures to be held in March 2024.****C. Punjab Pollution Control Board (PPCB)****January 2024****a) 25.01.2024:-**

Meeting taken by Secretary, Science, Technology and Environment with The Thermal Power Plants to review the status of utilization of paddy straw in industrial boilers.

b) 30.01.2024:-

Meeting taken by Secretary, Science, Technology and Environment with all the Deputy Commissioners to review the preparation regarding in-situ and Ex-situ management paddy straw for the upcoming paddy season, 2024.

February 2024**c) 02.02.2024 :-**

Meeting taken by Member Secretary, PPCB with all the Regional Officers of Punjab Pollution Control Board for taking up the matter with all industries having boilers more than 5 TPH capacity of the State for switching to paddy straw based industrial boilers.

d) 21.02.2024 :-

 Meeting taken by Member Secretary, PPCB with all the Regional Officers of Punjab Pollution Control Board for taking up the

matter with all the milk plants of the State for switching to paddy straw based industrial boilers.

e) 29.02.2024:-

Meeting taken by Secretary, Science, Technology and Environment with the representatives of all the District to review preparedness activities being carried out by the District Authorities for paddy straw management in the upcoming paddy season, 2024.

7. That it is pertinent to mention here that pursuant to the continuous meetings being taken by the authorities, various industrial boilers have been converted to paddy straw-based boilers thereby increasing the ex-situ management of paddy straw. It is further apprised that the State of Punjab has already surpassed the targets for usage of paddy straw in industrial boilers fixed in 2023 Action Plan by a significant percentage and setup a target for utilization of 3 million MT of paddy straw for industrial boilers purpose in the upcoming paddy season, 2024.
8. That upon implementation of the crop residue management plan the below given targets are expected to be achieved in 2024 with details as under:

Sr. No.	Strategy	Paddy Straw Utilization (million tonne)	
		2023 (Actual)	2024 (Est.)
1	In-Situ Management	11.50	12.70
2	Ex-Situ management	3.66	5.96
	Industrial Boilers	2.10	3.1*
	Biomass Power Plant	0.96	1.17
	Compressed Bio-gas Plant	0.30	0.54
	Bio-Ethanol Plant	0.10	0.20
	Thermal Power Plant	0.20	0.77**
	Brick Kilns	0.00	0.18**
3	Fodder	0.70	0.86
	Total	15.86	19.52

* Out of the total 3.1 MTA targeted to be consumed in industrial boilers, approximately 2.9 MTA in the form of Bales/Chopped form and the rest 0.2

JS

MTA in the form of palettes/briquettes

** 0.77 MTA of paddy straw in the Thermal Power Plants and 0.18 MTA in the Brick Kilns shall be used in the form of Palettes/Briquettes

9. That respectfully, it is submitted that the State of Punjab is making all necessary, essential and imperative efforts to eradicate the problem of stubble burning with the involvement and participation of various stakeholder departments duly identified in the Action Plan submitted to the Central Commission for Air Quality Management in NCR and Adjoining Areas.
10. That the State of Punjab has taken and is taking all the possible steps for the prohibition and control of stubble burning. The State Government is further strengthening the IEC activities amongst the farming community for making behavioral change so as to totally eradicate the stubble burning incidents.
11. That the status report on behalf of the State of Punjab is hereby submitted in compliance to order dated 19.01.2024 for kind perusal and appropriate orders of this Hon'ble Tribunal.

Submitted by

Date: 19-03-2024

Place: PATIALA


(Gurindar Singh Majithia)
Member Secretary,
Punjab Pollution Control Board,
Patiala

On behalf of the State of Punjab

Member Secretary
Punjab Pollution Control Board
PATIALA



ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਕੰਟਰੋਲ ਬੋਰਡ
PUNJAB POLLUTION CONTROL BOARD

No.

Dated.

To

The Chairperson,
Commission for Air Quality Management In NCR and
Adjoining Areas, 17th Floor,
Jawahar Vyapar Bhawan,
(STC Building), Tolstoy Marg,
New Delhi-110001

Subject :- Submission of Updated State Level Action Plan for Control of Crop Residue Burning-2024

Ref :- CAQM DO Letter No.A-11014/10/2020/CAQM-SB dated 30.1.2024 and letter no. -A-11014/10/2020/CAQM-SB-Vol.IX dated 26.2.2024

It is informed that in compliance to the directions issued by Commission of Air Quality Management In NCR vide above referred letter addressed to Worthy Chief Secretary to the Govt. Of Punjab, please find enclosed herewith the State Level Action Plan for Prevention and Control of Crop Residue Burning in the State of Punjab for the year 2024 along with point wise compliance to the observations made by CAQM in the meeting held on 20.2.2024 for kind Information and further necessary action please.

**DA/Updated State Action Plan 2024/
Point wise compliance of observations
Of CAQM made in meeting dated 20.2.2024**

Endst. No. 5673-85


Member Secretary

Dated 28/2/24

A copy of the above is forwarded to the following for Information please:

1. The Special Chief Secretary to Govt. of Punjab, Department of Agriculture & Farmer Welfare, Chandigarh
2. The Principal Secretary to Govt. of Punjab, Department of Industries & Commerce, Chandigarh
3. The Principal Secretary to Govt. of Punjab, Department of Power, Chandigarh
4. The Principal Secretary to Govt. of Punjab, Department of New & Renewable Energy, Chandigarh
5. The Principal Secretary to Govt. of Punjab, Department of Animal Husbandry, Chandigarh
6. The Principal Secretary to Govt. of Punjab, Department of Cooperation, Chandigarh
7. Principal Secretary to Govt. of Punjab, Department of Personnel and Trainings, Chandigarh
8. Principal Secretary to Govt. of Punjab, Department of School Education, Chandigarh
9. Principal Secretary to Govt. of Punjab, Department of Higher Education, Chandigarh
10. Principal Secretary to Govt. of Punjab, Department of Rural Development & Panchayats, Chandigarh

Contd..p/2.....


Member Secretary
Punjab Pollution Control Board
PATIALA

ਵਾਤਾਵਰਣ ਭਵਨ, ਨਾਭਾ ਰੋਡ, ਪਟਿਆਲਾ-147001
Vatavaran Bhawan, Nabha Road, Patiala -147001

Phone : Chairman. : 0175-2215793, Member Secretary : 0175-2215802 (O)

Website : www.ppcb.gov.in | E-Mail : chairmanppcb@yahoo.in | msppcb@gmail.com |



11. The Secretary to Govt. of Punjab, Department of Science, Technology & Environment, Chandigarh.
- ✓ 12. The Chairman, Punjab Pollution Control Board, Patiala.
13. All Deputy Commissioners, Punjab

DA/Updated State Action Plan 2024/


Member Secretary

Endst. No.

Dated

A copy of the above is forwarded to the Chief Environmental Engineer (Air), Punjab Pollution Control Board, Jalandhar for Information please.

**DA/Updated State Action Plan 2024/
Point wise compliance of observations
Of CAQM made in meeting dated 20.2.2024**


Member Secretary


**Member Secretary
Punjab Pollution Control Board
PATIALA**

**Action Plan for
Control of
Crop Residue Burning in the
State of Punjab
(2024-25)**



**Government of Punjab
(Amended as on 21.2.2024)**


Member Secretary
Punjab Pollution Control Board
PATIALA

Table of Contents

Chapter 1 - Introduction	2
1.1 Background	2
1.2 Prohibition on Burning of Crop Residue	4
1.3 Directions of CAQM	6
1.4 Orders of Hon. Supreme Court	7
1.5 Orders of National Green Tribunal	7
Chapter 2 - Special Initiatives of Punjab Government	8
2.1 Promotion of Surface seeder	8
2.2 Replacement of PUSA-44 with PR-126 variety	8
2.3 Impetus to Ex-situ Management	9
2.4 Utilisation of Paddy Straw as Fodder	11
Chapter 3 - Action Plan for Prevention of Stubble Burning	12
3.1 Roles and Responsibilities of various Departments and Authorities under the Action Plan	12
3.2 Governance Mechanism	18
3.2 Crop Residue Management Action Plan	22
Chapter 4 - Month-Wise Activity Calendar of the Stakeholder Departments	31
4.1 Activity Calendar of Agriculture Department	31
4.2 Activity Calendar of Punjab Energy Development Agency	34
4.3 Activity Calendar of Punjab Pollution Control Board	35
Chapter 5 - District-Wise Action Plans	36
5.1 Hotspot Management Plans	36
Chapter 6 - Conclusion	37
Chapter 7 - Reporting Formats	38
7.1 PRSC–District wise details of Active Fire Events	38
7.2 Action Taken Report Format	39
7.3 PRSC – District wise Comparison of Active Fire Events for 2021, 2022, 2023 & 2024	40
7.4 PRSC – List of Hotspots District based on number of fire incidents reported	41
7.5 Checklist for DCs	42
7.6 PRSC – Performa for filling the details of field functionaries	44
7.7 DailyReportingofActionundertakenforthe preventionandControlofStubble Burning	45

Chapter 1 - Introduction

1.1 Background

Punjab is an agricultural state with wheat and rice as major crops. The problem of stubble burning is closely tied in with Punjab's agricultural history. From the 1960s onwards, with the advent of the Green Revolution, the state saw an emphatic shift away from diverse crops like moong, groundnuts, jowar, maize and cotton, to a two-crop cycle of wheat and rice. While this brought relative prosperity to many farmers, it also gave rise to the large-scale challenge of managing paddy stubble. After paddy is harvested in mid and late October, the fields are left with a stubble of stalks about two feet high. Because the sowing cycle for wheat begins in late October, farmers have very little time to prepare their fields. Since, left with no option, the farmers had historically made a practice of setting the fields on fire for getting the fields ready for next crop. Paddy harvesting begins in many parts of Punjab in around September 15 and gets completed in most of the state by the end of November.

The wheat straw is used as fodder by the animal, whereas, the use of paddy straw is limited. Paddy is cultivated in approx. 31 lakh hectare area in Punjab resulting in generation of about 19.5 million tons of paddy straw. The year-wise details of area under paddy sown in the State of Punjab during Kharif season viz-a-viz paddy straw generation are as under:

Year	Area under Paddy (Lac ha)	Area under Non-Basmati (Lac ha)	Area under Basmati (Lac ha)	Paddy Straw Generation (Million Ton)		
				From Area under Non-Basmati @6.5 T / ha	From Area under Basmati @ 5.5 T / ha	Total Paddy Straw Generation
2022	31.67	26.73	4.94	17.37	2.71	20.08
2023	31.00	25.00	6.00	16.25	3.30	19.55
2024 (Est.)	31.54	24.78	6.58	16.10	3.43	19.52

The State has taken many initiatives to control practice of paddy residue burning by in-situ management during the last 5 years with details as under:

- i) Sustaining/ diversifying area from paddy to other crops. The paddy-wheat rotation has proved

to be the most economical and mechanized rotation in the State than all other crop rotations such as cotton-wheat, maize-wheat have many issues and do not compete with the paddy-wheat rotation.

- ii) Implementation of “**Central Sector Scheme for Promotion of Agricultural Mechanization for In-situ Management of Crop Residue**”. The scheme is being implemented in the state since 2018-19. Under the scheme, the subsidy is being provided @ 50% to individual farmers and @ 80% to registered farmer groups, panchayats, cooperative societies and farmer producer organizations (FPOs) for procurement of machinery for in-situ/ex-situ management of paddy straw 1,38,022 CRM Machines have been provided to the farmers and 24,736 custom hiring centers have been established/ strengthened with details as under:

Sr. No.	Year	Funds Received (Rs. in Crores)	No. of CRM Machines Provided	No. of CHCs established/ strengthened
1	2018-19	269.38	27747	3888
2	2019-20	273.80	23068	5140
3	2020-21	272.50	25811	10808
4	2021-22	290.87	13796	3073
5	2022-23	278.83	27250	883
6	2023-24	175	20350	944
	Total	1560.38	138022	24736

- iii) The paddy straw is being promoted to be used in Biomass Power Plants, CBG plants, Industrial Boilers, Pelletization plants. The Punjab Government is actively promoting the ex-situ utilization of paddy straw.
- iv) The State has also been able to collect and store paddy residue in Collection Centers by Biomass Industries; cattle ponds; Gaushalas and other common lands available in the villages for use as cattle feed for the landless farmers within the State as well as outside the State.

Punjab Govt is seized of the menace of stubble burning and taking various preventive steps for the last many years through prohibitory orders as well as generating awareness among farmers regarding ill effects of stubble burning on soil and environment.

The State of Punjab has taken and is taking all the possible steps for the prohibition and control of stubble burning. The State Government is further strengthening the use of in-situ and ex-situ management options and IEC activities amongst the farming community for making behavioral

change so as to totally eradicate the stubble burning incidents in the year 2024.

1.2 Prohibition on Burning of Crop Residue

1.2.1 Orders dated 22.10.2013 by Department of Science, Technology and Environment, Govt. of Punjab

To curb the menace of stubble burning during post-harvesting season in the State, the Government of Punjab, Department of Science, Technology and Environment in exercise of the powers conferred under section 19(5) of the Air (Prevention & Control of Pollution) Act, 1981 in consultation with the Punjab Pollution Control Board vide notification no. 946 dated 22/10/2013 has prohibited the burning of agriculture residue in the State of Punjab.

Any violation of this notification is punishable under section 39 of the Air (Prevention & Control of Pollution) Act, 1981 by filing a criminal complaint in the court of Judicial Magistrate first class.

1.2.2 Order dated 10.12.2015 passed by National Green Tribunal (NGT)

NGT has vide order dated 10.12.2015 in OA no.118 of 2013 prohibited the burning of paddy straw and passed detailed directions to meet the challenges arising from the burning of paddy straw.

It also provides imposing environmental compensation against defaulter.

"Any person or body that is found offending this direction would be liable to pay environmental compensation as follows:

- Small land holders having an area less than 2 Acres shall pay Environmental Compensation of Rs. 2500/- per incidence.
- Land holders having land area more than 2 Acres but Less than 5 Acres shall pay Environmental Compensation of Rs. 5000/- per incidence.
- Land holders having land area more than 5 Acres shall pay Environmental Compensation of Rs. 15000/- per incidence."

Further, violation of ban order passed by NGT is also punishable under the relevant section of NGT Act, 2010.

1.2.3 Order dated 7.2.2018 passed by Punjab Pollution Control Board regarding mandatory Super SMS with Combine Harvester

In order to encourage in-situ management of paddy straw, Punjab Pollution Control Board has passed order dated 7.2.2018 under section 31-A of Air (Prevention and Control of Pollution) Act, 1981 making it mandatory for all the Combines to have Super SMS system fixed.

Any violation of this direction is punishable under section 37 of the Air (Prevention & Control of

Pollution) Act, 1981 by filing a criminal complaint in the court of Judicial Magistrate first class.

1.2.4 Order No. Admn.(Gen)/2020/545 dated 25.08.20 by Punjab Pollution Control Board

In compliance to the order dated 15.11.2018 passed by the Hon'ble National Green Tribunal in OA no. 666 or 2018 titled as Ganga Lalwani vs. Union of India and others, the order dated 25.09.2020 passed by the Board regarding imposition of environmental compensation on harvester combines found operating without Super Straw Management System and in exercise of the powers vested in it under section 43 of the Air (Prevention and Control of Pollution) Act 1981 the Punjab Pollution Control Board has authorized and empowered the Sub-Divisional Magistrates, Circle Revenue Officers (Tehsildars and Naib-Tehsildars), Chief Agriculture Officers (in-charge of the Districts), Agricultural Development Officers (in-charge of the Blocks) and Secretary, Regional Transport Authorities to act against the persons found indulging in the burning paddy stubble and/ or operating Harvester Combines without Super SMS in the State of Punjab as under:-

a) To Impose and collect Environmental Compensation in accordance with the mandate of the order dated 10.12.2015 of the Hon'ble NGT in OA No. 118 of 2013 as under:

- i) Small land holders having an area less than 2 Acres:Rs. 2500/- per incidence
- ii) Land holders having land area more than 2 Acres but Less than 5 Acres:Rs. 5000/- per incidence
- iii) Land holders having land area more than 5 Acres:Rs. 15000/- per incidence

b) To impose Environmental Compensation for violation of the directions dated 07.02.2018 read with order dated 25.09.2020 passed by the Punjab Pollution Control Board upon the owners of Harvester Combines found operating without functional Super Straw Management System as under:

- i) Rs. 50000/- on first violation
- ii) Rs. 75000/- on second violation
- iii) Rs. 100000/- on third violation and subsequent violation each

c) To file prosecution u/s 39 and section 37 of the Air (Prevention and Control of Pollution) Act, 1981 before the competent court of law for violation of the notification dated 22.10.2013 issued by the Government of Punjab, Department of Science, Technology & Environment whereby stubble burning has been prohibited, and directions dated 07.02.2018 passed by the Punjab Pollution Control Board whereby the attachment and use of Super Straw Management System with the Harvester Combines was made mandatory in the State of Punjab respectively.

The amount of Environmental Compensation so collected should be deposited with the Member Secretary Punjab Pollution Control Board.

1.2.5 Prohibitory orders under section 144 CrPC by District Magistrates

District Magistrates in the State pass orders under section 144 CrPC every season to prohibit burning

of paddy straw. Any violation of the order passed u/s 144 of CrPC is punishable u/s 188 of CrPC.

1.3 Directions of CAQM

The Government of India, MoEF&CC, under the provisions of the Commission for Air Quality Management in National Capital Region and Adjoining Areas Act 2021 has constituted the "Commission for Air Quality Management in NCR and Adjoining Areas. The Section 12 of the Act 2021 mandates the Commission to provide an effective framework, action plan and take appropriate steps to tackle the problem of stubble burning in the NCR and Adjoining Areas.

The Commission has deliberated stubble burning/ Crop Residue Management (CRM) with major associated stakeholders in a series of meetings including with the State Governments of Punjab, Haryana, UP, Rajasthan, GNCTD, State Pollution Control Boards of NCR States. The Commission based upon the feedback, inputs and implementable action points emerged during the various meetings with stakeholders, has drawn up a framework to control/eliminate stubble burning in order to improve the air quality in the National Capital Region and Adjoining Areas.

The Commission had issued directions to the State Government vide no. A-10011/10/2020/CAQM-SB/384-387 dated 10.6.2021 to the State Government to prepare a detailed / comprehensive plan of action based on the contours of the framework, with clearly entrusted responsibilities to various Departments / Boards and other stakeholders, duly identifying various qualitative and quantitative parameters and the respective targets against each of them, along with the time frame of implementation and submit the same to Commission by 30.06.2021. The plan was submitted to the Commission and thereafter, revised and updated plan were submitted to the Commission in 2022 and 2023. Now CAQM has directed the State of Punjab to prepare updated Action plan for 2024 paddy season.

The components of the framework and action plan for elimination of stubble burning are broadly classified as under:

	Components	Responsible Dept.
a.	In-Situ Crop Residue Management	Dept. of Agriculture/ Dept. of Cooperation
b.	Ex-Situ Crop Residue Management	Dept. of Renewable Energy/ PEDDA/ Dept. of Industries/PPCB
c.	Prohibition of Stubble/Crop Residue Burning	Dept. of Science, Technology and Environment and Deputy Commissioners
d.	Effective Monitoring/Enforcement	Dept. of Science, Technology and Environment and Deputy Commissioners
e.	Plans / Schemes to reduce the generation of	Dept. of Agriculture

	paddy straw	
f.	IEC activities for behavioral change	Dept. of Agriculture

Accordingly, the action plan for control of crop residue burning in the State of Punjab has been prepared.

1.4 Orders of Hon. Supreme Court

Hon'ble Supreme Court of India has taken cognizance of the matter of stubble burning in the NCR and adjoining areas including the State of Punjab in Writ Petition (Civil) No. 13029 of 1985 MC Mehta v/s Union of India and Others. The Hon'ble Supreme Court of India has passed series of orders in the case and in compliance thereof the State of Punjab has filed status reports from time to time.

After hearing, the Hon'ble Supreme Court of India has passed an order dated 13.12.2023 in the case wherein several directions have been issued for compliance by the concerned parties. The directions for compliance as contained in order dated 13.12.2023 which are related to the State of Punjab have been taken into consideration while formulating this plan.

1.5 Orders of National Green Tribunal

Hon'ble National Green Tribunal has taken cognizance of the subject matter of stubble burning in the State of Punjab in O.A. 632 of 2023 titled as "Pollution takes a front seat as stubble fires spike in Punjab" appearing in Hindu dated 06.10.2023 and has directed the State Govt. to file a phase wise Action Plan disclosing phase wise proposed action from 01.01.2024 to 01.09.2024 which may include various preventive steps for the next years as also the accountable authorities for implementation of the same. The orders of Hon'ble NGT has been taken into consideration while formulating this plan.


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

Chapter 2 - Special Initiatives of Punjab Government

2.1 Promotion of Surface seeder

In order to increase the in-situ management of paddy straw, as per the recommendations of the Punjab Agricultural University (PAU), the newly developed low cost and simple machine meant for sowing of wheat in paddy stubble field, called Surface Seeder machine has been included in the list of machines to be provided on subsidy under the Crop Residue Management Scheme to the farmers. It comprises of a modified straw cutter- cum-spreader fitted with seed and fertilizer boxes attachment. It is a low-cost machine which does uniform application of wheat seed and basal fertilizer along with cutting and spreading of paddy straw in a single operation. This machine can be operated with 45 hp or above tractor and can sow 10-12 acres/day. Its cost of operation is around Rs 700-750 per acre. The germination and crop stand of wheat is good at all the locations where the machine was used in 2023 paddy season. During the demonstrations conducted last year, the yield of the wheat was at par with other technologies of paddy straw management. The weed control with surface seeding technology is also significantly better than other methods.

To popularize the technology, the State Govt. is arranging exposure visits of the farmers to the fields sown with Surface Seeder. The State Govt is further targeting to increase the surface seeder application manifold in the coming paddy season 2024. The targeted area for promoting surface seeder will be 5.0 lakh acres in Kharif season of 2024 by using at least 5000 surface seeders.

2.2 Replacement of PUSA-44 with PR-126 variety

The government has promoted the new variety of paddy crop PR-126 developed by PAU, Ludhiana in the year 2022, which is of short duration as well as carries less straw load as compared to long duration and high straw load PUSA-44 variety. PR-126 variety matures in 93 days whereas PUSA-44 variety matures in 123 days after transplantation. Hence, PR-126 variety gives 30 days more to the farmer to prepare his field for next crop.

The area under PR-126 variety has increased to 9,42,000 hectares in 2023 as compared to 5,59,000 hectares in 2022 which had ultimately led to less generation of paddy straw. Further, the area under PUSA-44 variety has decreased to 5,48,000 hectares in 2023 as compared to 7,73,000 hectares in 2022. Seed Certification for PUSA-44 variety has been discontinued by the State Government. The Government is targeting to increase area under PR-126 variety to nearly 12,00,000 hectares during paddy season 2024 to decrease the straw quantity.

2.3 Impetus to Ex-situ Management

2.3.1 Setting up of CBG plants

4 CBG Projects of capacity 85.23 TPD are already operational in the state. 7 no. CBG projects of capacity 79.25 TPD are under installation and expected to be operational by December 2024. The total paddy straw utilization after setting up of the plants is targeted to enhance to nearly 5.4 Lakhs TPA. Efforts have been made to rope in National Level PSUs and private companies of repute to set up projects in Punjab. As outcome of these efforts, following mentioned PSUs have signed MOUs/ Shown Interest to set up CBG projects based on paddy straw in the State. Sites for these projects are being surveyed by joint teams of Punjab Energy Development Agency and PSU concerned. PEDDA is facilitating for requisite clearances for these projects and for leasing out Panchayat Lands for setting up and storage of paddy straw for these projects.

Sr.No.	Project Company	No.of Plants	Capacity (TPD)	Paddy Straw Consumption (Lakh TPA)
1	GAIL	10	150	5.00
2	HPCL	10	50	1.70
3	M/s. RelianceBio EnergyLtd.	10	200	7.00
	Total	30	400	13.70

2.3.2 Setting up of Industrial Boilers based on Paddy Straw

The State Govt has already surpassed the targets for industrial boilers paddy straw consumption significantly in the year 2023. The Government has launched an extensive campaign to promote the utilization of paddy straw in Industrial Boilers and is facilitating the existing industries to switch/upgrade to paddy straw based Industrial Boilers

A total of 20.69 Lakh MT is being aggregated and used in the paddy straw-based boilers by the end of 2023 by 39 industrial units.

Additionally, 36 new industries have setup/setting up new boilers which shall consume nearly 10.28 Lakh Tonnes of paddy straw in 2024 in addition to existing usage in the state.

The paddy straw consumption in Industrial Boilers is targeted to be nearly **31 Lakh Tons in 2024**.

2.3.3 Setting up of Pelletization Plants

The palettes/briquettes shall be used mainly in the Thermal Power Plants and Brick Kilns. Only a small quantity i.e. nearly 2 Lac Tonnes shall be used in the Industrial Boilers as the industrial boilers majorly use paddy straw in bales/chopped form.

13 Paddy Straw Palette manufacturing units (Torrefied/ Non-Torrefied) are already operational in the State utilizing 2.32 Lakh MT of paddy straw. 21 new Paddy Straw Pelletizing Units (Non-Torrefied) are envisaged to be operational by November 2024 which shall utilize an additional 4.75 Lakh MT of paddy straw taking the total consumption for palette manufacturing to 7.0 Lakh MT against a total requirement of 1 Million MT.

The utilization of paddy straw for pelletization which was nearly zero in 2020 has increased by significant quantity as detailed above. The State Government is extensively promoting setting up of paddy straw pelletization plants in the coming year 2024.

2.3.4 Utilization of Maize in Grain Based Distilleries

In Punjab, there are currently 18 grain-based distilleries and some are under development in Punjab producing 21% of total Indian grain-based ethanol. The existing capacity is 2260 KL/per day (KLPD), with an additional 1600 KLPD expected to be operational by 2024. These distilleries are supplied rice as feedstock, allocated by FCI. The estimates indicate that FCI procures rice at Rs. 3737 per quintal and supplies it to distilleries at Rs. 2000 per quintal, resulting in a subsidy burden of approximately Rs.1737 per quintal. Maize shows significant potential as a replacement for rice as feedstock. According to estimates, supplying maize to distilleries at 17.5-18 Rs/kg would ensure economic viability. By procuring and supplying maize at this rate instead of rice, FCI can encourage a shift from paddy to maize cultivation and achieve savings of Rs.1119 per quintal leading to total savings of 1.2k Cr.

Shifting distilleries in Punjab to maize-based ethanol for 6 months annually would require 1.21 million metric tons of maize, equating to an increase in acreage by approximately 4.84 lakh acres.

Hence, Punjab is striving for crop diversification by promoting maize as an alternative to wheat paddy cycle, addressing issues like depleting groundwater and stubble burning. The Punjab government is creating a comprehensive strategy aligned with India's objectives. Proceeding with that, the Govt. of Punjab has projected the same as a discussion paper in a Conference organized by Gol under the Chairmanship of Sh. Ramesh Chand, Member, Niti Ayog. Union Agriculture Secretary has favourably agreed to cover the same under the Crop Diversification Programme of Govt. Of India.

2.3.5 Proposal for Development for Industrial Estate

The Govt of Punjab is working on a proposal for setting up of an industrial estate wherein a common boiler of large capacity based on paddy straw is proposed to be setup which shall supply steam to the units to be established in the proposed industrial estate.

A proposal for ensuring a continuous and uninterrupted supply chain through a network of

aggregators is also being worked upon by the Govt. for the proposed industrial estate.

2.3.6 Policy Intervention for promoting Paddy Straw usage in distilleries/ Bio-ethanol and refineries/sugar mills.

The Government of Punjab has made it compulsory for the upcoming distilleries/existing distilleries setting up new boilers in the state to mandatorily use paddy straw as fuel.

Also, the State Government has offered the incentives of SGST reimbursement on the cost of the boiler (based on paddy straw) to be installed in industries such as Sugar Mills, Paper Mills and boilers of steam generation capacity more than 25 TPH under the PBIP Investment promotion policy of the State of Punjab.

State Govt. is in consideration of the proposal for providing capital incentives to the new boilers to be installed based on paddy straw as fuel by industrial units

2.4 Utilization of Paddy Straw as Fodder

Rajasthan is a state with more than 3800 gaushalas catering to 11-12 L cattle. The gaushalas are currently already obtaining fodder from local sources (contribution by village farmers and local purchase) at cheap rates and the rates vary throughout the year based on several factors. Paddy straw is used along with main fodder to reduce cost. Some amount of paddy straw fodder is also being transported from Haryana and Punjab via local traders as well. In Punjab, there is a large trader in Gurusar who has purchased infrastructure to chop and compress paddy straw and transport it to Rajasthan in trailers. It is estimated that there will be a total demand of 2-4 lakh ton of paddy straw per year from Rajasthan. To further scale this, two meetings have been conducted in 2023 – one directly between Government of Punjab and Government of Rajasthan in Chandigarh and one virtual meeting facilitated by Government of India. Following deliberations, Govt. of Rajasthan shared a consolidated requirement of 1 lac MT for the immediate year – split across gaushalas in different districts. If paddy straw of sufficient quality is provided; this could be scaled up further in the coming years. The average landed cost expected by Rajasthan was around Rs. 6/kg. The case is under consideration of the Government of Punjab for taking up the matter with GOI for subsidy on transportation.


Member Secretary
Punjab Pollution Control Board
PATIALA

Chapter 3 - Action Plan for Prevention of Stubble Burning

3.1 Roles and Responsibilities of various Departments and Authorities under the Action Plan

Various Departments and authorities of the State shall take the following actions to control the burning of crop residue:

3.1.1 Department of Agriculture

(i) IEC Activities

The Department of Agriculture will lead & coordinate various IEC activities to create a massive awareness campaign in collaboration with the Department of Information and Public Relation, PAU Ludhiana and other stakeholders against the burning of paddy straw. IEC Activities will include the following:

- (a) Jingles on Radio Channels
- (b) Production of Advertisement Films
- (c) Running of films on TV Channels
- (d) Display Boards against straw burning on backside of Punjab Roadways and PRTC Buses
- (e) Display Boards on Bus Stands, Market Committee Yards and all Cooperative Societies in the State
- (f) Painting of walls in the villages with slogans against Paddy burning
- (g) Massive print media advertisement
- (h) Hoardings and Panels at prominent places
- (i) Publicity Vans in the villages
- (j) Rally by School children in last days of September and middle of October
- (k) Deputing of Nodal officer for each village.
- (l) Pamphlets and leaflets to farmers
- (m) Farmers, who have leased their land to be called and sensitized to ensure non burning of paddy straw on their land.

(ii) Provision of Machinery to individual farmers and groups

The Department will provide a subsidy for purchase of agricultural machinery for paddy straw to individuals as well as groups and agriculture cooperative societies and ensure that the same are widely utilized. Subsidy will be disbursed through the online system after physical verification of machines. The process for procurement of CRM machinery shall be completed by August 2024

(iii) Compensation to Farmers.

The State requires intervention of the Commission for taking up the issue with the

Ministry of Agriculture & FW, GoI, for providing Paddy Straw Management Compensation to farmers @ Rs.100/- per Quintal of Paddy produced at least for three years by the time the industry for alternate use of paddy straw becomes fully operational.

(iv) Promotion of diversification and staggered sowing of Paddy

The Department of Agriculture would take steps to diversify from paddy to other crops to reduce the amount of straw generated in the state. State would actively try to establish a mechanism in unison with GoI to do assured procurement for alternate crops which have MSP. Along with diversification, staggered sowing of paddy would be promoted to popularize short term duration varieties of paddy.

(v) Responsibility of Commission Agents

The Department of Agriculture will ensure that the Commission Agents (Artiahs) registered with agriculture produce Market Committees in Punjab will not burn crop residue. Action shall be taken against the Commission Agents for violation of ban on burning of crop residue.

(vi) Responsibility for uses of basmati residue

The Department of Agriculture will ensure that basmati residue shall be used as fodder and find out avenues for uses in fodder consuming Districts and other States along with transportation.

(vii) Hot Spot Management

Department of Agriculture shall identify hotspots with the help of PRSC and appoint their officers on Block level basis for sensitizing the farmers of the area and making available the crop residue management machinery on a priority basis along with focused IEC activity.

(viii) Ensuring Super SMS on combine Harvester

Department of Agriculture shall carry out an exercise for ensuring Super SMS on Combine Harvesters through individual level contact with the combine owners as well as manufacturers starting from 1st week of September. Dept. of Agriculture to act against the combine owners operating without super SMS as per PPCBorder dated 25.09.2020

(ix) Setting up of Control Room

Punjab Mandi Board shall set up a Control Room for the purpose of controlling stubble burning during Kharif harvesting season.

(x) Responsibility of KVKs, BISA & IFFCO

All the KVKs shall adopt at least 10 villages (surrounding hot spots) and shall be responsible for providing In-situ machinery and ensuring zero burning in such villages. Similarly, BISA should adopt 100 villages (hot spots) and also IFFCO should adopt 100 villages and should take responsibility of zero burning in these villages.

(xi) Regular Training & NGO involvement

PAU shall impart regular training to Agriculture and Line Departments, call centers and other technical staff working for the purpose of crop residue management.

NGOs working for management of paddy residue will be supported by Department of Agriculture and positive interventions should be made by these NGOs at field level.

(xii) Mobile App. for Crop Residue Management

The Department will improve and increase the use of the Mobile App, 'i-khet' for making crop residue management equipment available on rental on Uber/Ola Model. Further, it will ensure data uploading on mobile app. named "Cooperative Machinery Tracker" and the usage of machinery from all CHCs. The information on use of machinery shall remain available on the dashboard.

(xiii) Felicitation of Farmers and Panchayats

The Department of Agriculture will do seminars and conduct small functions wherein it will popularise non-burning of paddy straw and honor those farmers and panchayats which have led by example by not burning their paddy residue in previous years.

3.1.2 Department of Revenue & Rehabilitation**(i) Entry in KhasraGirdawari**

The Department of Revenue shall ensure that patwaris enter the *Girdawri* register with red ink as 'ਝੋਨਾਸਾੜਿਆ' against the fields where incidents of burning of crop residue have been reported.

(ii) Nambardaars

The Department shall ensure that no *Nambardaar* burns crop residue. The Department shall ensure action against *Nambardaar* violating ban on burning of crop residue.

(iii) Recovery of Environmental Compensation

The Department shall ensure the recovery of Environmental Compensation imposed on the defaulting farmers in time.

3.1.3 Department of Rural Development and Panchayats

(i) The Department shall ensure that all the members of Panchayat do not burn crop residue. The Department shall take necessary action against the members of Panchayat who violate the order regarding ban on burning of crop residue.

(ii) The Department shall create awareness among farmers and ensure usage of machines

in the village through Village Panchayats.

- (iii) The Department shall identify vacant common village land for storage of paddy straw for future use through their officers and provide cumulative data to the Deputy Commissioner.
- (iv) Officers of the Department shall be deployed on area specific basis for ensuring no stubble burning and taking action against the defaulters.

3.1.4 Department of Cooperation

- (i) The Department shall ensure that members of co-operative societies do not burn crop residue and action shall be taken against the members violating the ban of crop residue.
- (ii) The Department shall create awareness among farmers and ensure usage of machines in the village through Village Panchayats.
- (iii) Officers of the Department shall be deployed on area specific basis for ensuring usage of crop residue machinery and uploading the data on the mobile app. 'Cooperative Machinery Tracker', no stubble burning and taking action against the defaulters.

3.1.5 Department of Power

The Department of Power to ensure all JEs of Power Department are monitoring the incidents of burning in their respective jurisdiction and reporting them to the district administration for necessary action.

The Department of Power shall ensure that the coal based Thermal Power plants situated up to a radius of 300 Km of Delhi shall take immediate steps to co-fire biomass-based Pellets, Torrefied Pellets/Briquettes (with focus on paddy straw) with Coal (up to 5-10%) in the power plants through a continuous and uninterrupted supply Chain and take all necessary steps to ensure that co-firing of biomass pellets in Thermal Power Plants begins without any delay which is in compliance to the Direction no. 42 given by the Commission

3.1.6 Department of New and Renewable Energy

The Department of New and Renewable Energy shall endeavor to use paddy straw as fuel in the Bio Mass Power Plants and Compressed Bio Gas (CBG) plants and take all necessary steps including the policy interventions for promoting the establishment of such plants.

PEDA shall also establish the Supply Chain and Aggregator Entities for making available the paddy straw for such usages throughout the year. PEDA shall also undertake District wise gap analysis regarding the availability of paddy straw and its ex-situ usage for energy and industrial purposes.

PEDA shall earmark the District/Tehsil wise areas for ensuring proper allotment of agricultural paddy straw based on the demand of the Biomass/CBG plants as well as industries.

Punjab Pollution Control Board

- (i) PPCB shall ensure monitoring of incidents of burning of paddy straw through Punjab Remote Sensing Centre and ensure SMS alert is sent to field functionaries to take action on incidents of stubble burning.
- (ii) PPCB shall ensure that mobile and web-based application be made operational in paddy season, in which role-based Login (Village Nodal, Cluster, Sub division/Tehsil and district level) be provided to various officials for end to end reporting and action taken for each fire incidents.
- (iii) PPCB shall ensure that the mobile based application for both Android and IOS platform is made operational by 15th September 2024
- (iv) PPCB shall ensure that Proper training is imparted to all the field functionaries for smooth operation of the mobile based application.
- (v) PPCB shall ensure that all data with respect to burning of crop residue as obtained from Remote Sensing authorities and action taken on the incidents and various MIS reports are available through a web-based application with facility to have a dashboard to drill down data.
- (vi) The Board shall ensure that in cases of persistent defaulters of crop residue burning, appropriate coercive and punitive action is taken including launching of prosecution under Section 15 of the Act of 1986.
- (vii) Monitor the ambient air quality of the major cities and make the data available to district authorities and the State to ensure further action in case of deterioration of quality.
- (viii) Enforcement the measures put in place in compliance of various Hon'ble National Green Tribunal orders and as per the provisions of Air (Prevention & Control of Pollution) Act, 1981.
- (ix) PPCB to encourage boiler-based industries to adopt paddy-based boilers or co-fire paddy in existing boilers.
- (x) PPCB to also facilitate setting up of pelletization plants for delivering co-firing mandates in Thermal power plants and brick kilns.

3.1.7 Department of School Education

The Department of School Education shall ensure that employees of all the Government & private schools in Punjab do not burn crop residue. Suitable actions shall be taken against the employees who are violating the ban on burning of crop residue. Department shall educate students on the adverse effects of stubble burning on human and soil health and availability of management options

3.1.8 Department of Home Affairs

The Department of Home Affairs to ensure that necessary assistance is rendered by the police authorities for enforcement and implementation of various directions and orders issued with respect to ban on burning of crop residue. The police shall particularly render assistance to the District Administration for monitoring of hotspots where large scale incidents of burning of crop residue in previous years.

3.1.9 Department of Personnel

The Department of Personnel shall ensure suitable directions to all the State Government Departments, Boards, Corporations and Autonomous Bodies to direct their employees not to burn crop residue and suitable disciplinary action shall be taken against the employees for violation of ban on burning of crop residue. Department of Defense Services Welfare will ensure to not burn paddy stubble themselves, educate others and report incidents.

3.1.10 Directorate of Information and Public Relations

The Directorate should work closely with the Dept. of Agriculture to disseminate information to the print and electronic media regarding the management of crop residue via in-situ and ex-situ mechanism.

3.1.11 District Administration**(i) Appointment of Nodal officers in the districts**

Deputy Commissioner of the respective district shall appoint following area specific officials drawn from Department of Agriculture & Farmers Welfare, Cooperative Department, Rural and Panchayat Department, Power Department, Soil and Water Conservation Department, PPCB etc. for end-to-end reporting and action taken for each fire incidents as under:

- (a) Village Nodal Officer.
- (b) Cluster Officer
- (c) Sub Division/Tehsil Officer.
- (d) District level Officer.

The list along with designation & mobile nos. shall be provided to PPCB by 15th July, so as to create the login in the Mobile Application.

- (ii) The Deputy Commissioner and SSPs of the district shall jointly hold District Level Monitoring meeting with all the stakeholders to strictly enforce the orders banning paddy stubble burning.
- (iii) Appoint one nodal officer for each village and one Cluster Officer for every 20 villages to coordinate the efforts from the pool of employees available with various departments.

- (iv) Ensure appointments of various officials like Village Nodal officer, Revenue officer (Patwari), Cluster officer, Tehsildar, Police and SDM to monitor the stubble burning incidents.
- (v) Ensure visits to hot spots (villages where more than 75% area of the village burnt since last three years as per the stubble burning data) by senior officers of the Districts and make special arrangements to contain the burning of crop residues in these villages.
- (vi) Ensure that the information of various officials like Village Nodal officer, Revenue officer (Patwari), Cluster officer, Tehsildar, Police and SDM be provided to PPCB in advance stage before the beginning of stubble burning so that log in id of various officials be entered into PRSC system.
- (vii) It shall be ensured that nodal officer visits every site of the incident within 24 hours and environment compensation shall be imposed as per directions of NGT by the designated officer of the District Administration.
- (viii) Monitor the progress of various Stakeholder Department & send the consolidated progress report to the Department of Environment on email stubble burning progress report@pbdecc.gov.in so as to have the consolidated report be sent to the Chief Secretary and other State and Central functionaries.
- (ix) Ensure no burning of crop residue by special categories:
 - (a) Lease holders of the Panchayat Land or Shamlat Land of the villages
 - (b) Government employees
 - (c) Commission agents
 - (d) Panchayat Members
 - (e) Other such category of cultivators
- (x) Ensure that all the officers operate the mobile based app.
- (xi) Ensure optimal utilization of machinery provided for in-situ management of the crop residue.
- (xii) Ensure usage of fire tenders to douse the fires as a remedial measure with the help of local authorities

3.2 Governance Mechanism

The campaign of this nature will require mobilization and effective coordination of efforts of various departments in the State. The entire program will be governed through the following mechanism:

- (i) State Level Coordination
- (ii) District Level Coordination
- (iii) Sub-division Level Coordination
- (iv) Cluster Officer
- (v) Village Nodal Officer

3.2.1 State Level Coordination and Monitoring

- (i) At the State Level, a Committee under Chief Secretary and comprising of the Administrative Secretaries of the following Departments will coordinate, monitor and decide various issues towards effective implementation of the ban on burning paddy straw:
- (a) Department of Agriculture
 - (b) Department of Science, Technology and Environment
 - (c) Department of Cooperation
 - (d) Department of Rural Development
 - (e) Department of Power
 - (f) Department of Water Resources
 - (g) Department of Defence Services Welfare
 - (h) Department of Information and Public Relations
 - (i) Department of New and Renewable Energy
- (ii) The State Government will further depute senior Administrative Secretaries in various districts to monitor the implementation of the ban. They will be assisted by Senior Officers from PPCB, PSPCL and Agriculture.
- (iii) Chief Secretary will also review the progress with the Deputy Commissioners

3.2.2 District Level Coordination and Monitoring

- (i) District Administration will have the key role in effective implementation of the plan. All the Departments at the district level will have to extend their support.
- (ii) There will be a District Level Monitoring Committee, which shall consist of the following officers:
- | | | | |
|-----|------------------------------------|---|-------------|
| (a) | Deputy Commissioner | - | Chairperson |
| (b) | Senior Superintendent of Police | - | Member |
| (c) | Additional Deputy Commissioner (D) | - | Member |
| (d) | EE / AEE, PPCB | - | Member |
| (e) | District Revenue Officer | - | Member |
| (f) | Chief Agriculture Officer | - | Convener |
- (iii) The District Level Committee will meet on weekly basis or more frequently and review the IEC activities, enforcement activities and other facilitation activities and take necessary action.

3.2.3 Sub-Division Level Coordination and Monitoring

(i) The Sub-Division Level Monitoring Committee shall consist of the following officers:

- | | | | |
|-----|---------------------------------|---|-------------|
| (a) | Sub-Divisional Magistrate | - | Chairperson |
| (b) | Deputy Superintendent of Police | - | Member |
| (c) | BDPO | - | Member |
| (d) | Agriculture Officer | - | Convener |

(ii) The sub-division level committee will meet daily/ alternate day and review the progress of various activities and take necessary action.

3.2.4 Cluster Officer

- (i) Cluster officer will fill and duly sign the data regarding challan no & date, challan amount and challan photo in the mobile base app.
- (ii) The Cluster officers will be drawn from the block / sub-division level officers of various departments such as Agriculture, Revenue, Cooperation, Rural Development, PSPCL, Defense Welfare etc.
- (iii) Cluster Officer shall coordinate with Village Nodal Officer for various activities to control burning of stubble by the farmers.

3.2.5 Village Nodal Officer

- (i) The Village nodal officer will get the information for each fire incidents in his area from the SMS alert system already in operation. The village Nodal officer will visit the spot in the field, operate the mobile app and make entries alongwith pictures of the fire incident sites in the mobile app.
- (ii) The Village Nodal Officers will be drawn from amongst the officials such as Secretaries of Cooperative Societies, Panchayat Secretaries, JE/ Linemen of PSPCL, officials of Agriculture/ Horticulture and Soil conservation, Guardians of Governance etc.
- (iii) The Village Nodal officer will assist in various facilitation and enforcement activities at village level such as:
- To help create awareness in the village by way of holding meetings with farmers.
 - To help arrange CRM machines, if possible, in the village.
 - To distribute pamphlets/ leaflets etc. in villages.
 - To make announcements in Gurdwaras or by other modes.
 - To interact with village schools for organizing rallies and awareness lectures to students so that these students can further create awareness of their parents.
 - To identify those farmers who are likely to put fire to paddy residue and to

convince them by way of one-to-one contact.

- (g) To get to know the farmers who have burnt the residue and to ask the revenue Patwari of the village to make relevant entry in Revenue records, as per separate instructions issued by the Revenue Department.
- (h) To get to know the land of employees of Govt./ board/ corporation/ coop societies and also the panchayat lands and to implement govt. instructions regarding not putting fire to residue in such lands.
- (i) To report incidence of crop burning to the higher authorities


Member Secretary
Punjab Pollution Control Board
PATIALA

3.2 Crop Residue Management Action Plan

3.3.1 In-Situ Crop Residue Management Plan

Sr. No	Target activity	Present status (baseline data as on 01.02.2024)	Target	Responsible agency / Officers responsible	Plan for Kharif 2024
			2024-25		
1	Crop residue management machinery under Crop Residue Management Scheme / Submission on Agriculture Mechanization (CRM / SMAM)	138022	36020 (To be completed by 2024)	Dept. of Agriculture / Chief Agriculture Officer of respective District	The subsidy/financial assistance for procurement of various CRM machines is provided under Central Sector Scheme Promotion of Agricultural Mechanization for In-situ Management of Crop residue. For the financial year 2024-25 the scheme is likely to be implemented on SMAM funding pattern (60:40). In order to meet the targeted baling capacity, maximum Balers and Rakers shall be supplied as a part of the new component under CRM scheme for Ex-situ application.
2	Village / Block / District wise mapping of the demand of CRM machinery	138022	-	Dept. of Agriculture / Chief Agriculture Officer of respective District	All the machines have been mapped by the respective Districts as mentioned in the District Specific Action Plans. New machines shall also be mapped accordingly.
3	GAP analysis, the availability of CRM machines with each District of the State		36020	Dept. of Agriculture / Chief Agriculture Officer of respective District	Gap analysis has been done by the respective Districts and has been attached in the District Specific Action plan
4	Staggering of the harvesting schedule at the village level / Cumulative Area sown – In lakh Ha			Dept. of Agriculture / Chief Agriculture Officer of respective District	The time of harvesting is decided by the individual farmers based on the physiology of the variety sown. - It is not possible to stagger harvest at village level, apart from time of maturity the harvesting depends upon the availability of combine and

				<p>other factors such the local weather, time to sow next crop etc.</p> <p>- Generally harvesting is also staggered and is done from 25thSeptember to 15thNovember.</p> <p>-The figures are based on weather watch cum area sown figures.</p> <p>- The Department will make farmers aware about harvesting paddy at right time so that the moisture does not exceed the limits.</p>
5	Allocation of CRM machinery (Super SMS; Happy Seederetc.)— Number of Machines			<p>Dept. of Agriculture / Chief Agriculture Officer of respective District</p> <p>Allocation of CRM will be done as per the demand from respective Deputy Commissioners in the plan already submitted to CAQM district-wise. A village level team will be appointed for ensuring that all the machinery mapped is utilised by the individual farmers as per their requirement.</p>
6	Custom Hiring Centres (Cooperative) to increase machine utilization – Increase in Utilization (%)	Initial Targets for 35 ha for Custom Hiring Centre		<p>Registrar of Co-operative Societies.</p> <p>Special campaign would be launched to increase the usage of machines available in CHCs.</p>
7	Development of electronic platform / mobile application for allotting farmers to book and use CRM –Status			<p>Dept. of Agriculture / Chief Agriculture Officer of respective District</p> <p>All the machines have been registered in I-khet Platform</p>
8	Door step access of CRM to small and marginal farmers			<p>Dept. of Agriculture / Chief Agriculture Officer of respective District and DCs</p> <p>1.The I-Khet Machine mobile application will provide information of available machinery to the farmers. The farmers would be able to hire the machine through the app. 2. The CHCs would be instructed to charge only operational costs from small and marginal farmers. 3. Through the village level</p>

					<p>camps individual farmers would be motivated to adopt online booking of CRM machinery through I-Khet.</p> <p>4. All Group- A officers of Department of Agriculture will be directed to adopt CHCs each to increase the utilization of machines.</p> <p>5. The department has purchased CRM machines at block level in almost all the blocks of the state. The machines would be made available to the small/marginal farmers of the state.</p> <p>6. Village level committees shall be setup to ensure door to door access</p> <p>7. All DCs have been directed to do mapping of farmers with available machinery at district, block, village and farm level and they are doing the same.</p>
9	Use of crop residue as mulch for the following (Lakh Ha)	Mulch with Happy Seeder		Dept. of Agriculture / Chief Agriculture Officer of respective District	Farmers are being informed about the advantages of In-situ crop residue management practices especially mulching and the benefit of incorporating the residue in soil for good soil health.
		4.25	7.00		
		Incorporation for Vegetables			
		1.00	1.05		
		Incorporation for Wheat			
		5.0	8.5		
10	Direct sowing of rice (DSR) method using short duration varieties in order to provide a longer window period for management of paddy straw—In lakh Ha		2.50	Dept. of Agriculture / Chief Agriculture Officer of respective District	During 2024-25, it has been decided to give an incentive amount of Rs.1500/- per acre to farmer directly without transplanting. A target of 7 Lakh acres has been fixed for DSR in the state for 2024-25 and a budget of Rs. 100 Cr. has been kept for the same
11	Area to be covered through Bio-Decomposer Application (In acres)	4674	8000	Dept. of Agriculture / Chief Agriculture Officer of respective	7500 acres to be managed through Bio-Decomposer Application in the State of Punjab

				District	
--	--	--	--	----------	--

3.3.2 Ex-Situ Crop Residue Management Plan

Sr. No	Target activity	Present status (baseline data as on 01.02.2024)	Target	Responsible agency / Officers responsible	Plan for Kharif 2024
			2024-25		
1	Promotion of ex-situ crop residue management options			PEDA /Dept. of Agriculture / Chief Agriculture Officer of respective District	<p>- PEDA is actively promoting CBG Projects in the State under NRSE Policy-2012 of Government of Punjab.</p> <p>-All options are being explored and encouraged.</p> <p>-Number of Balers/Rakes will be increased in the event of Start of Operation /working of Additional Bio Mass Units and the availability of funds from Gol</p> <p>Nearly, 38 CBG plants are envisaged to be set up in State of Punjab in the upcoming 2-3 years which shall collectively use 15.67 lakh tonnes</p>
	Biomass Power Plants (Million tonnes)	0.96	1.17		
	CBG Plants (Million Tonnes)	0.30	0.54		
	Bioethanol Plants (Million Tonnes)	0.10	0.20		
2	Diversified ex-situ use of baled crop residue for various purposes like power generation, production of Bio-ethanol and Bio-gas, for making briquettes, torrefied charcoal, pellets, etc. as raw material/fuel for coal fired power plants etc.	-	-	PEDA/ Dept. of Agriculture	<p>i. Mapping has been done by PEDDA for additional projects based on the existing ones and availability of paddy residue. These units need support in terms of Viability Gap Funding and hybrid power arrangement.</p> <p>ii. Department of Agriculture will assist the efforts.</p>
3	Mapping the districts and villages for the agricultural straw availability and demand from various industries (Bio-fuel projects, Thermal power projects, etc.) for optimum quantity	-	-	PEDA/ Dept. of Agriculture	<p>1. It is being taken up with Dept. of Rural Development and Panchayats</p> <p>2. DoAFW officials will advise the aggregators and villagers to cooperate in the Districts.</p>

	allocation and utilization.				
4	Establish institutions / aggregators at Village/Block/District level	-	-	PEDA/Dept. Of Rural Development / Dept. of Agriculture	In the process through Industry and Biomass Aggregators.
5	Developing appropriate decentralized mechanism for the collection, storage and transportation for industrial use of crop residue	-	-	PEDA/Dept. Of Rural Dev. & Panchayats / Dept. of Agriculture	In order to meet the targeted bailing capacity, maximum Balers and Rakers shall be supplied as a part of the new component under CRM scheme for Ex-situ application.
6	Promoting the use of paddy straw for industrial purposes (in million tonnes)	2.10	3.10	PPCB	PPCB is actively promoting the setting up of industrial boilers in the State of Punjab
7	Mapping of the districts and villages for agriculture straw availability and demand from the industries	-	-	PEDA/ Dept. of Agriculture/PPCB/Deputy Commissioners	1.Mapping has been done by PEDA for projects based on the availability of paddy residue. Punjab Pollution Control Board shall provide necessary data to PEDA regarding the quantum of paddy straw being used by the industries. 2.All DCs have been directed to do mapping of farmers with available machinery at district, block, village and farm level and they are doing the same
8	Development of scheme to incentivize establishment of industries aiming at utilization of paddy straw as raw material	-	-	PEDA/Horticulture Department / Dept. of Agriculture	Department of Horticulture will be assisted for providing incentives under Agriculture Infrastructure Fund (AIF) and setting up of such units. . DoAFW officials will advise the aggregators / business entrepreneurs to set up such units especially in the Hot

					Spot Districts.
--	--	--	--	--	-----------------


Member Secretary
Punjab Pollution Control Board
PATIALA

3.3.3 Plan of Action for IEC Activities

Sr. No	Target activity	Actual (2023-24)	Target	Responsible agency / Officers responsible	Plan for Kharif 2024
			2024-25		
1	Awareness programs through print media, electronic media and social media	3738	4000	Dept. of Agriculture / Chief Agriculture Officer of respective District	2800- Village level training camps will be organised
2	Implementation of suitable location specific capacity building and target awareness modules.	50	60	Dept. of Agriculture / Chief Agriculture Officer of respective District	1. 500 demonstrations of crop residue management machinery will be provided to farmers. 2. The ASHA workers will be mobilized to motivate the farmers regarding ill effects of stubble burning.
3	IEC campaign in Districts with full engagement of all related departments	23	23	Dept. of Agriculture / Chief Agriculture Officer of respective District	The campaign will be organised along with the District Administration and allied departments.
4	Awareness through running of short films on T.V. channels	7	10	Dept. of Agriculture / Chief Agriculture Officer of respective District	In addition, there will be 50 programme on TV/ Doordarshan, 50 programme on All India Radio, 2 articles per week in news papers(for ensuing season)
5	Involvement of students to communicate effectively the adverse effects of stubble burning	396 schools	400 schools	Dept. of Agriculture / Chief Agriculture Officer of respective District	Campaign to be carried out in 3 Schools in each block
6	Supporting farmers by organizing bio-decomposer application requirements through guidance by IEC partners.	8000 Acre	8000 Acre	Dept. of Agriculture / Chief Agriculture Officer of respective District	· The trials of bio-decomposers results are not very encouraging. · Trials will be again conducted at PAU, Ludhiana during ensuing Kharif 2024
7	Organization of field level training programs at KVKs	44	60	Dept. of Agriculture /	In addition, 500 various programmes will be

	and other similar notified locations.			Chief Agriculture Officer of respective District	organized
8	Organization of Gram Sabha's for demonstrating crop residue conservation and management machinery	2699	2800 (Village level Awareness Camps)	Dept. of Agriculture / Chief Agriculture Officer of respective District	-
9	Regular training to agriculture and line departments.	4	4 trainings at state level at PAU Ludhiana	Dept. of Agriculture / Chief Agriculture Officer of respective District	4 sessions to be organized by PAU


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

3.3.4 Summary

Upon implementation of the crop residue management plan the below given targets are expected to be achieved in 2024 with details as under:

Sr. No.	Strategy	Paddy Straw Utilisation (million tonne)	
		2023 (Actual)	2024 (Est.)
1	In-Situ Management	11.50	12.70
2	Ex-Situ management	3.66	5.96
	Industrial Boilers	2.10	3.1*
	Biomass Power Plant	0.96	1.17
	Compressed Bio-gas Plant	0.30	0.54
	Bio-Ethanol Plant	0.10	0.20
	Thermal Power Plant	0.20	0.77**
	Brick Kilns	0.00	0.18**
3	Fodder	0.70	0.86
	Total	15.86	19.52

* Out of the total 3.1 MTA targeted to be consumed in industrial boilers, Approximately 2.9 MTA in the form of Bales/Chopped form and the rest 0.2 MTA in the form of palettes/briquettes

** 0.77 MTA of paddy straw in the Thermal Power Plants and 0.18 MTA in the Brick Kilns shall be used in the form of Palettes/Briquettes

Note: Achievement depends upon

- Many factors like procurement of Maize and other alternate crops at MSP and extended support.
- Continuous addition of machines and their utilization
- Industry consuming paddy straw becomes operational


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

Chapter 4 - Month-Wise Activity Calendar of the Stakeholder Departments

4.1 Activity Calendar of Agriculture Department

4.1.1 Tentative Phase wise Action Plan for Crop Residue Management Scheme 2024-25 (Machinery Distribution)

Month	Week 1	Week 2	Week 3	Week 4	
April	Advertisement for Empanelment of Manufacturers for supply of CRM agriculture machinery - Punjab Agricultural University.			Compilation of Data for Empanelment by PAU	
				Call for Applications under CRM Scheme through agrimachinerypb.com Portal	
May	Call for Applications under CRM Scheme through agrimachinerypb.com Portal				
	Release of Empanelled Manufacturers list and updation on Portal				
			Review of Existing CRM Machinery for providing doorstep access to farmers via I Khet App		
June	Review of Applications received under the CRM scheme				
	Compilation of data of applications received under scheme				
			Release of Physical and Financial Targets		
			Selection of applicants under CRM Scheme by DLECs		
			Sanctions to be issued to the selected applicants	Procurement of CRM Machinery	
	Mapping of Machines on I Khet Application.				
July	Procurement of CRM Machinery.				
August	Procurement of CRM Machinery.				
	Physical Verification of Machinery				
	Physical Verification of Machinery				
				Disbursement of Subsidy by District Offices	
October	Physical Verification of Machinery				
	Disbursement of Subsidy by District Offices				
November	Disbursement of Subsidy by District Offices				

4.1.2 Tentative Phase wise Action Plan for Crop Residue Management Scheme 2024-25 (IEC)

Month	Week 1	Week 2	Week 3	Week 4
February			Sharing of Success Stories	
March	Sharing of Success Stories			
	Identification of district wise hotspot villages			
			Cluster level Awareness Camps in hotspot villages	
			Reaching out to farmers in Hotspot villages through letters/messages	
Field Visit of Farmers to see the results in field sown with various CRM Technology				
April			Focused awareness camps in villages with lesser availability of CRM Machines to apply under the scheme.	
			Meetings with Panchayats and Co-operatives to apply under CRM Scheme.	
June	Meeting with Bio Mass Aggregators at district level			
	Meeting with Bio Mass Industries at district level to access the Demand and bottlenecks			
July			Meetings with Local NGOs	
August	Meetings with Local NGOs			
	Meetings with Kisan Unions at District Level.			
	Meetings with Sarpanches regarding usage of machinery.			
	Meetings with Co-operative Societies regarding usage of machinery.			
	Training of Trainer by PAU Ludhiana			
			Awareness Camps at village level.	
			Publicity Vans	
			Awareness through Asha Workers	
			Mobilization of School Students	
			Wall Paintings	
		Literature Distribution		
		SMS with Bitly links on the adoption of machinery & success Stories		
September	Awareness Camps at village level.			
	Publicity Vans			
	Awareness through Asha Workers			

	Mobilization of School Students
	Wall Paintings
	Literature Distribution
	SMS with Bitly links on the usage of machinery.
	Awareness campaign by Department of Information & Public Relations
October	Awareness Camps at village level.
	Publicity Vans
	Awareness through Asha Workers
	Organisation of Demonstrations
	Mobilization of School Students
	Wall Paintings
	Literature Distribution
	SMS with Bitly links on the usage of machinery.
	Awareness campaign by Department of Information & Public Relations
November	Publicity Vans
	Organisation of Demonstrations


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

4.2 Activity Calendar of Punjab Energy Development Agency

Month	Event
February	<ul style="list-style-type: none"> • Review Meeting of CBG Projects Developers • Review Meeting of State Level Committee (SLC) for SATAT Scheme
March	<ul style="list-style-type: none"> • Meeting with Bankers for Financial Closures • Meeting of Working group on CBG
April	<ul style="list-style-type: none"> • Review Meeting of CBG Projects Developers
May	<ul style="list-style-type: none"> • Review Meeting of State Level Committee (SLC) for SATAT Scheme
June	<ul style="list-style-type: none"> • Review Meeting of CBG Projects Developers
July	<ul style="list-style-type: none"> • Meeting of Working group on CBG
August	<ul style="list-style-type: none"> • Review Meeting of CBG Projects Developers • Review Meeting of State Level Committee (SLC) for SATAT Scheme
September	<ul style="list-style-type: none"> • Meeting of Working group on CBG
October	<ul style="list-style-type: none"> • Review Meeting of CBG Projects Developers
November	<ul style="list-style-type: none"> • Review Meeting of CBG Projects Developers • Review Meeting of State Level Committee (SLC) for SATAT Scheme
December	<ul style="list-style-type: none"> • Meeting of Working group on CBG

Parallely meetings will also be held with owners of biomass power plants to encourage them to put in more units.

4.3 Activity Calendar of Punjab Pollution Control Board

Month	Event
February	<ul style="list-style-type: none"> Meeting with industries, concerned stakeholder departments and Boiler OEMs to review the issues being faced for setting up of paddy straw based industrial boilers Awareness campaign with NGOs and other stakeholders
March	<ul style="list-style-type: none"> Meeting with Entrepreneurs setting up palletization plants in the state. Meeting with all the Nodal District Officers to review the district wise progress w.r.t. Ex-situ Management of paddy straw.
April	<ul style="list-style-type: none"> Review Meeting with the industries for setting up of paddy straw based industrial Boilers in the State. Meeting with Punjab Remote Sensing Centre for satellite monitoring during Wheat season. Training to all the field functionaries for monitoring exercise during the rabi season Operationalization and monitoring/enforcement through Android based mobile applications.
May	<ul style="list-style-type: none"> Meeting with Brick Kiln owners to review utilization of paddy straw in BKO's
June	<ul style="list-style-type: none"> Review Meeting of Punjab Energy Development Agency, Agriculture Department and Department of Power w.r.t. Ex-situ Utilization of paddy straw. Review Meeting with Brick Kiln owners to review co-firing of paddy straw in BKO's
July	<ul style="list-style-type: none"> Meeting with all the Regional Officers of Punjab Pollution Control Board to review the utilization of paddy straw based industrial boilers and setting up of paddy straw based boilers in the respective districts.
August	<ul style="list-style-type: none"> Awareness campaign at Head Office, PPCB Patiala Review meeting with pelletisation plants. Meeting with Punjab Remote Sensing Centre for satellite monitoring during paddy season
September	<ul style="list-style-type: none"> Training to all the field functionaries for monitoring exercise during the kharif season Operationalization and monitoring/enforcement through Android based mobile applications
October	<ul style="list-style-type: none"> Review Meeting with the industries for setting up of paddy straw based industrial Boilers in the State.
November	<ul style="list-style-type: none"> Review Meeting with all the district nodal officers regarding utilization of paddy straw. Review Meeting for compilation of data/action taken report and its submission to various agencies/courts

Chapter 5 - District-Wise Action Plans

All the 23 districts of the state of Punjab have submitted the district wise action plans indicating the paddy straw generation, in-situ, ex-situ utilization and crop diversification.

5.1 Hotspot Management Plans

In order to drive pointed interventions to tackle the menace of stubble burning in the Kharif harvesting season of 2024, the districts have identified hotspot villages based on the historical data of the fires. Till date 663 villages have been identified as hotspots. Hotspot monitors (SDM, Tehsildar, Cluster, Nodal Officers) will personally visit these villages and ensure that no fire incidents occur in these villages. Extensive exercise has been done by all districts to ensure fire dousing equipment and manpower for dealing with fires. Arrangements for fire tenders have been done at the block level to douse fires, if happened. Districts will be conducting extensive IEC activities (detailed activity calendar enclosed in the plan) across these villages to spread awareness towards stubble burning. Detailed district wise hotspot management plan along with details of the fire management equipment and personnel involved is attached as annexure as part of the district action plans.


Member Secretary
Punjab Pollution Control Board
PATIALA

Chapter 6 - Conclusion

The State of Punjab has taken and is taking all the possible steps for the prohibition and control of stubble burning. However, there are some limitations and challenges which are required to be considered and resolved in the right perspective. The State Government is further strengthening the use of in-situ and ex-situ management options and IEC activities amongst the farming community for making behavioral change so as to totally eradicate the stubble burning incidents.

With the continuous, sincere and concerted effects of the State Government and its Departments, there has been a significant reduction in the stubble burning events in the State of Punjab during the year 2023 as compared to the year 2022. During the period from 15th September to 30th November, 2023, the farm fire counts were 36663 as compared to 49992 during the same period in the year 2022. As such, there has been a significant reduction of 26.55% in the farm fire counts during the paddy harvesting season, 2023.

The efforts of the Punjab Government towards in-situ and ex-situ management of paddy straw will bear fruits and the targets mentioned in the above action plan shall be achieved with the collaborative support of all the stakeholders Ministries /Departments/Agencies of the Government of India. In order to strengthen these efforts, the policy interventions and financial support by the Central Government is imperative especially in provision of viability gap funding for Biomass power plants and impediments being experienced by the upcoming Compressed Bio Gas Plants. Some kind of mechanism needs to be established for making the paddy straw a resource and remunerative for the farmer community for effective management of the paddy straw.

The State of Punjab is making sincere endeavor to make the entire state free from stubble burning incidents in the coming years. However, it is stated that the problem of stubble burning which is continuing for the last so many years will gradually decrease and vanish with the collective efforts of the State of Punjab and the Central Government.


Member Secretary
Punjab Pollution Control Board
PATIALA

Chapter 7 - Reporting Formats

Various Reporting formats are as below. The Monitoring of various activities of the Action Plan is being reviewed regularly as per the reporting formats at the highest level.

7.1 PRSC–District wise details of Active Fire Events

This report will be sent by Punjab Remote Sensing Centre, Ludhiana to all the Deputy Commissioners and PPCB on daily basis

PRSC 1 – District wise details of Active Fire Events (On daily basis)							
S. No.	Latitude	Longitude	District	Tehsil	Block	Village	Remarks


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

7.2 Action Taken Report Format

Sr. No.	District	No. of fire incidents reported by PRSC uptoDate	No of sites visited within 24 hours by the Sub-Divisional Team	No of sites in which no crop burning observed	No of cases in which environmental compensation imposed	Total amount of environmental compensation imposed (in Rs.)	No. of cases in which environmental compensation yet to be imposed	Total amount of environmental compensation recovered (in Rs.)
---------	----------	---	--	---	---	---	--	---

No of cases in which red entry made in khasraGirdawari	No of cases in which Procsecution filed u/s 39 of Air Act, 1981	No of cases in which FIR filed u/s 188 of IPC	No of cases in which u/s 107/151 of CrPC	No of cases of imposition of EC on Harvest Combines	No of cases pending visit from the total incident reported uptoDate	Remarks
--	---	---	--	---	---	---------


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

7.3 PRSC – District wise Comparison of Active Fire Events for 2021, 2022, 2023& 2024

This report will be sent by Punjab Remote Sensing Centre, Ludhiana to all the Deputy Commissioners, PPCB and Directorate of Environment on a daily basis.

Comparison of District-wise Number of Active Fire Events (Kharif Season) in Punjab During 2021,2022,2023& 2024 Based on Satellite Data					
Sr. No.	District	2021	2022	2023	2024
		15 Sept to 30 Nov			
1	AMRITSAR	2171	1542	1573	
2	BARNALA	4313	2910	2316	
3	BATHINDA	4476	4592	2972	
4	FATEHGARH SAHIB	1723	1149	888	
5	FARIDKOT	3945	2693	2022	
6	FAZILKA	2385	2856	1854	
7	FIROZPUR	6272	4295	3398	
8	GURDASPUR	1395	854	389	
9	HOSHIARPUR	330	259	118	
10	JALANDHAR	2546	1388	1196	
11	KAPURTHALA	1787	1279	1048	
12	LUDHIANA	5804	2682	1801	
13	MANSA	3216	2815	2268	
14	MOGA	6502	3609	2795	
15	MUKTSAR	4591	3884	1669	
16	SBS NAGAR	356	270	238	
17	PATHANKOT	6	1	4	
18	PATIALA	5346	3336	1878	
19	RUPNAGAR	307	246	46	
20	S.A.S. NAGAR	205	162	133	
21	SANGRUR	8001	5239	5618	
22	TARN TARAN	4103	3184	2026	
23	MALERKOTLA*	1379	677	413	
TOTAL		71159	49922	36663	


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

7.4PRSC – List of Hotspots District based on number of fire incidents reported

As per the report received from Punjab Remote Sensing Centre, Ludhiana, regarding the fire instances in 2023, the following 8 districts have been identified as hotspot districts.

List of Hotspots District based on number of fire incidents reported			
Sr. No.	District	No. of fire instances reported in 2023	No. of fire instances reported in 2024
1	Sangrur	5618	
2	Ferozpur	3398	
3	Bathinda	2972	
4	Moga	2795	
5	Barnala	2316	
6	Mansa	2268	
7	Tarn Taran	2026	
8	Faridkot	2022	


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

7.5 Checklist for DCs

Stubble Burning Management		
Sr.No.	Activity Checklist	Yes/ No
1	<ul style="list-style-type: none"> ● Whether District Level Monitoring Committee meetings are being held regularly? ● How many meetings have been held? ● Whether specific action points were drawn from the meeting & proceedings made? 	
2	<ul style="list-style-type: none"> ● Whether Sub-Division Level Monitoring Committee meetings are being held? ● How many meetings have been held? ● Whether specific action points are drawn from the meeting and proceedings made? 	
3	<ul style="list-style-type: none"> ● Whether the detailed analysis of incidents of stubble burning from previous years supplied by PPCB has been reviewed? ● Whether list of hot spots (villages where more than 75% of the village area burnt for past three years) have been scrutinized by District Level Monitoring Committee? ● Whether Special arrangements have been made for these hot spots? 	
4	<ul style="list-style-type: none"> ● Whether subsidized machinery has been delivered to the farmers and Groups as per the approved plans? 	
5	<ul style="list-style-type: none"> ● Whether Village Nodal officer, cluster officer have been appointed to visit and impose EC on the incidents of burning of Stubble as reported by PRSC? ● Whether site visits are conducted in two days of incidents? ● What is the average time taken by Nodal Officer to visit the reported incidents? 	
6	<ul style="list-style-type: none"> ● Whether arrangements have been made to compile an action taken report on the visits? ● Whether imposition of EC has been promptly done after the visit, by cluster officer? ● Whether other action such as filing of complaint/ FIR etc. has been done? 	
7	<ul style="list-style-type: none"> ● Whether arrangements have been made to ensure compliance by special categories such as Government employees, Commission Agents, Panchayat Members, Numberdaars etc.? ● Whether district heads of these departments been asked to take undertaking from their employees regarding compliance? 	
8	<ul style="list-style-type: none"> ● Whether arrangements have been made to ensure red entry in khasragirdawari of the fields where incident has been reported and verified? 	
9	<ul style="list-style-type: none"> ● As per No. S.O. 24/PVCL(R.)R./1964/R.6/(Amd.)/2023, whether rate of lease of shamat land to be leased out for the storage of paddy straw and biomass to be utilised as fuel in the industrial projects has been fixed and notified? 	

Stubble Burning Management		
Sr.No.	Activity Checklist	Yes/ No
10	<ul style="list-style-type: none"> ● Whether District Level Monitoring Committee meetings are being held regularly? ● How many meetings have been held? ● Whether specific action points were drawn from the meeting & proceedings made? 	
11	<ul style="list-style-type: none"> ● Whether Sub-Division Level Monitoring Committee meetings are being held? ● How many meetings have been held? ● Whether specific action points are drawn from the meeting and proceedings made? 	
12	<ul style="list-style-type: none"> ● Whether the detailed analysis of incidents of stubble burning from previous years supplied by PPCB has been reviewed? ● Whether list of hot spots (villages where more than 75% of the village area burnt for past three years) have been scrutinized by District Level Monitoring Committee? ● Whether Special arrangements have been made for these hot spots? 	
13	<ul style="list-style-type: none"> ● Whether subsidized machinery has been delivered to the farmers and Groups as per the approved plans? 	
14	<ul style="list-style-type: none"> ● Whether Village Nodal officer, cluster officer have been appointed to visit and impose EC on the incidents of burning of Stubble as reported by PRSC? ● Whether site visits are conducted in two days of incidents? ● What is the average time taken by Nodal Officer to visit the reported incidents? 	
15	<ul style="list-style-type: none"> ● Whether arrangements have been made to compile an action taken report on the visits? ● Whether imposition of EC has been promptly done after the visit, by cluster officer? ● Whether other action such as filing of complaint/ FIR etc. has been done? 	
16	<ul style="list-style-type: none"> ● Whether arrangements have been made to ensure compliance by special categories such as Government employees, Commission Agents, Panchayat Members, Numberdaars etc.? ● Whether district heads of these departments been asked to take undertaking from their employees regarding compliance? 	
17	<ul style="list-style-type: none"> ● Whether arrangements have been made to ensure red entry in khasragirdawari of the fields where incident has been reported and verified? 	
18	<ul style="list-style-type: none"> ● Whether District Level Monitoring Committee meetings are being held regularly? ● How many meetings have been held ? ● Whether specific action points were drawn from the meeting & proceedings 	

	made?	
--	-------	--

19	<ul style="list-style-type: none"> ● Whether Sub-Division Level Monitoring Committee meetings are being held? ● How many meetings have been held? ● Whether specific action points are drawn from the meeting and proceedings made? 	
20	<ul style="list-style-type: none"> ● Whether the detailed analysis of incidents of stubble burning from previous years supplied by PPCB has been reviewed? ● Whether list of hot spots (villages where more than 75% of the village area burnt for past three years) have been scrutinized by District Level Monitoring Committee? ● Whether Special arrangements have been made for these hot spots? 	
21	<ul style="list-style-type: none"> ● Whether subsidized machinery has been delivered to the farmers and Groups as per the approved plans? 	
22	<ul style="list-style-type: none"> ● Whether Village Nodal officer, cluster officer have been appointed to visit and impose EC on the incidents of burning of Stubble as reported by PRSC? ● Whether site visits are conducted in two days of incidents? ● What is the average time taken by Nodal Officer to visit the reported incidents? 	
23	<ul style="list-style-type: none"> ● Whether arrangements have been made to compile an action taken report on the visits? ● Whether imposition of EC has been promptly done after the visit, by cluster officer? ● Whether other action such as filing of complaint/ FIR etc. has been done? 	
24	<ul style="list-style-type: none"> ● Whether arrangements have been made to ensure compliance by special categories such as Government employees, Commission Agents, Panchayat Members, Numberdaars etc.? ● Whether district heads of these departments been asked to take undertaking from their employees regarding compliance? 	
25	<ul style="list-style-type: none"> ● Whether arrangements have been made to ensure red entry in khasragirdawari of the fields where incident has been reported and verified? 	
26	<ul style="list-style-type: none"> ● As per No. S.O. 24/PVCL(R.)R./1964/R.6/(Amd.)/2023, whether rate of lease of shamlat land to be leased out for the storage of paddy straw and biomass to be utilised as fuel in the industrial projects has been fixed and notified? 	

7.6 PRSC – Performa for filling the details of field functionaries

Sr.No	District	Tehsil	Block	Village	PRSC_ID
-------	----------	--------	-------	---------	---------

DC Name	DC Designation	DC Contact	DC Email	ADC Name	ADC Designation	ADC Contact	ADC Email
------------	-------------------	---------------	-------------	-------------	--------------------	-------------	-----------

SDM Name	SDM Designation	SDM Contact	SDM Email	THE Name	THE Designation	THE Contact	THE Email
-------------	--------------------	----------------	--------------	-------------	--------------------	-------------	-----------

PAT Name	PAT Designation	PAT Contact	PAT Email	DSP Name	DSP Designation	DSP Contact	DSP Email
-------------	--------------------	----------------	--------------	-------------	--------------------	-------------	-----------

NOD Name	NOD Designation	NOD Contact	NOD Email	AEE Name	AEE Designation	AEE Contact	AEE Email
-------------	--------------------	----------------	--------------	-------------	--------------------	-------------	-----------

SHO Name	SHO Designation	SHO Contact	SHO Email	CLS Name	CLS Designation	CLS Contact	CLS Email
-------------	--------------------	----------------	--------------	-------------	--------------------	-------------	-----------


 Member Secretary
 Punjab Pollution Control Board
 PATIALA

7.7 Daily Reporting of Action undertaken for the prevention and Control of Stubble Burning

Sr. No.	Description	Date of Reporting
1	Cumulative no. of fire incidents reported as per ISRO protocol	
2	Action taken against defaulters, including incidents reported on earlier dates: i. Cumulative number of fields inspected.	
	ii. Cumulative number of cases where EC imposed.	
	iii. Cumulative amount of EC imposed.	
	iv. Details of other action taken against defaulters.	
3	No. of cases in which FIR filed u/s 188 of IPC	
4	No. of cases in which prosecution filed u/s 39 of Air Act, 1981	
5	Total no. of IEC Activities undertaken viz. <ul style="list-style-type: none">• Awareness programs conducted at village/ block level• Posters/Hoardings/Banners placed• Wall painting• Column/Articles in newspaper and magazines etc.• Other Activities	
6	Total area under Bio-decomposer application so far	
7	Any special efforts/initiatives to be reported	


Member Secretary
Punjab Pollution Control Board
PATIALA