

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 report on behalf of the State of Punjab through the Member Secretary, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala

1. That 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 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.
2. That the Hon'ble NGT has sought the report in the matter. The undersigned is filing the present status report with regard to the steps being taken by the State of Punjab for prevention and control of Stubble Burning

Submission of Action Plan

3. That briefly stated 19.55 Million Tonnes of estimated straw is generated in the State of Punjab from about 31 lakh hectares of land area under paddy cultivation. It is estimated that Paddy straw from Basmati varieties shall be around 3.30 Million MT and from non-basmati varieties shall be around 16.25 Million MT.



4. That the State of Punjab has prepared and submitted an Action Plan for Control of Crop Residue Burning to the Central Commission for Air Quality Management in NCR and Adjoining Areas (CAQM). The said action plan has been further updated for the year 2023 and submitted to CAQM. The Action Plan prepared and submitted for 3 years is based on the contours of the framework provided by the CAQM by clearly entrusting the responsibilities to various departments and other stakeholders. A copy of the Action Plan for Control of Crop Residue Burning in the State of Punjab for three years as submitted to CAQM is placed at **Annexure-A**.

5. 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 the various stakeholder departments duly identified in the action plan as listed herein below:
 - a) Department of Agriculture
 - b) Department of Revenue & Rehabilitation
 - c) Department of Rural Development and Panchayats
 - d) Department of Cooperation
 - e) Department of Power
 - f) Department of New and Renewable Energy
 - g) Punjab Pollution Control Board
 - h) Department of School Education
 - i) Department of Home Affairs
 - j) Department of Personnel
 - k) District Administration

Compliance made by the State

6. That the State of Punjab is making compliance of the directions issued by the Ld. National Green Tribunal, Hon'ble Supreme Court of India and the Commission for Air Quality Management in NCR and Adjoining Areas (CAQM) from time to time and the action taken by the State in respect of various issues has already been placed before the Hon'ble Supreme Court of India by way of various affidavits filed in the case of M.C Mehta (Supra). A

JK

comprehensive summary of the important steps taken to prohibit and prevent the stubble burning is given herein below:

- i. Detailed Action Plan for enforcement of ban on stubble burning has been circulated to Deputy Commissioners of the State for implementation.
- ii. State has appointed around 8500 Nodal Officers across the State especially in the villages in the Hot Spot Districts to be in contact with the representatives in the villages to make farmers aware of the ill effects of stubble burning through them and about directions of the Hon'ble Supreme Court of India and also to check crop residue fire incidents.
- iii. The State has already issued notification no. 946 dated 22.10.2013 in exercise of powers conferred u/s 19(5) of the Air (Prevention & Control of Pollution) Act, 1981, thereby prohibiting the indiscriminate burning of left-over paddy / wheat straw in the whole of the State.
- iv. In order to implement the directions of the Ld. National Green Tribunal dated 10.12.2015 in O.A No. 118 of 2013, the District and Sub Divisional Level Monitoring Committees have been formed which are imposing environmental compensation on farmers indulging in crop residue burning amounting to Rs. 2500, Rs. 5000, Rs.15000, per incident on the basis of land holding of the farmers.
- v. The State of Punjab had issued administrative instructions dated 27.09.2017 to various departments of the State Government to direct its employees and staff members not to burn the paddy straw, wherever, they own land and grow paddy.
- vi. The Department of Rural Development and Panchayats has been requested to ask the panchayats not to burn the paddy straw.
- vii. The attachment of Super Straw Management System with Harvester Combines has been made mandatory by issuing



directions u/s 31-A of the Air (Prevention & Control of Pollution) Act, 1981.

- viii. Department of Revenue has been directed to make red entry in the revenue record, in the area where the burning of paddy straw take place.
- ix. The Deputy Commissioners of the Districts are issuing prohibitory orders u/s 144 of the Code of Criminal Procedure, 1973, thereby prohibiting the burning of paddy straw / stubble in the State.
- x. The State has got developed an android based mobile application through Punjab State Remote Sensing Centre and a dashboard has been created with role-based login for field officers to provide end to end reporting and action taken for each fire incident captured via satellite. This mobile application helps in close monitoring and effective control of stubble burning incidents in the State.
- xi. The Nodal officers appointed have been directed to verify fire incidents. They are also to coordinate with village Panchayats to stop stubble burning and submit daily monitoring reports to Sub Divisional Magistrates.
- xii. Control rooms set up in each district for the purposes of control of stubble burning.

Steps being taken by the Government of Punjab to stop stubble burning in the State – Preparedness for paddy season 2023.

7. That the different departments of the State of Punjab and its officers / officials have geared up for the challenging task of controlling and prohibiting the burning of paddy straw in the paddy harvesting season 2023. The steps that have been taken by the Government of Punjab in advance to stop the stubble burning in the State along-with the targets achieved are summarized herein below.
 - i) **Massive Awareness Campaign**

JK

The State Government has launched massive campaign to create awareness amongst the farmers about the negative impact of stubble burning on the environment and public health through various channels on television as well as print and electronic media.

ii) **Regular meetings and seminars**

Regular meetings, seminars and awareness campaigns are being conducted by the State at the highest level and the details are mentioned below:

- **14.12.2022:-**

A meeting was held under the chairmanship of Chief Secretary, Punjab with all the CBG, Biomass power, ethanol plants and industries to discuss the issues being faced by them

- **6.1.2023:-**

A meeting was presided over by the Secretary, Department of Science, Technology and Environment with all the Deputy Commissioners of the State for preparation and implementation of block and district level Action plans.

- **19.1.2023 :-**

A meeting was presided over by the Secretary, Department of Science, Technology and Environment with all the Thermal Power Plants of the State to review the status of co-firing of biomass palletes in the plants

- **7.2.2023:-**

A meeting held under chairmanship of Chief Secretary, Punjab with all the stakeholder departments to review the preparedness activities for the paddy harvesting season.

- **12.2.2023:-**

Kisan sarkaar milni was held on 12.02.2023 at Punjab Agricultural University, Ludhiana to get feedback from the stakeholders towards achieving the goal for State Agriculture.



- **20.3.2023:-**

A Meeting taken was presided over by Secretary, Science , Technology and Environment to review setting up and promotion of CBG/Biomass plants/industries etc.

- **19.6.2023:-**

A Meeting was presided over by Secretary, Science, Technology and Environment to review co-firing of Biomass based palettes/torrefied palettes in Thermal Power Plants.

- **29.8.2023:-**

A Meeting was presided over by Secretary, Science, Technology and Environment with Deputy Commissioners to review preparedness of stubble burning in the upcoming paddy season.

iii) **Workshop on "Parali-Ek Punji"**

Towards, substantial reduction in the incidences of paddy stubble burning and to maximize paddy stubble management/ utilization during 2023, **a workshop on "Parali-Ek Punji" was organized on 20.02.2023 at Mohali** by the Commission for Air Quality Management in NCR and adjoining areas and Punjab Pollution Control Board, wherein senior officers from the concerned departments of the Central Government, State Governments of Haryana and Punjab, Central Pollution Control Board, State Pollution Control Boards, academia and various stakeholder agencies including NGOs, Social groups etc. had participated. The workshop was chaired by the Hon'ble Minister for Environment, Forest and Climate Change, Government of India with participation of the Hon'ble Chief Ministers of the States of Punjab and Haryana and the Agriculture and Environment Ministers.

iv) **District specific plans for the Prevention and Control of Stubble Burning 2023**

District specific plans for the Prevention and Control of Stubble Burning 2023 have been prepared by the 23 District Magistrates for

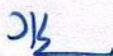
their respective districts of the State of Punjab and the said plans have been furnished to the Commission for Air Quality Management in NCR and Adjoining Areas vide letter no. 10033 dated 28.4.2023 and a copy of the same alongwith District Specific Plans of 23 Districts is enclosed herewith as **Annexure-B** for kind perusal.

Achievement of Targets

- v) Upon implementation of the crop residue management plan, the targets achieved in the last two years and further expected to be achieved in the next one year are tabulated herein below:

S. No.	Strategy	Paddy Straw Management (Million Tonns)					
		2021-22		2022-23		2023-24	
		Target	Achievement	Target	Achievement	Target	Expected Achievement
1	Crop Diversification	3.57	0.00	4.57	0.00	5.22	0.00
2	In-situ Management	8.13	8.13	9.44	9.99	10.7	11.5
3	Ex-situ Management	1.217	3.92 (Including Fodder 2.57)	1.514	4.8 (Including Fodder 3.00)	4.669	5.96 (Including Fodder)
Total		12.917	12.05	15.524	14.79	20.589	17.46

- vi) The reasons for non-achievement of targets under the crop diversification plan can be fairly attributed to the following factors, which are beyond the control of the State of Punjab:
- a. Increased emphasis by Government of India on production of coarse cereals (Wheat & Rice) due to global issues like Ukraine War.
 - b. The MSP of Paddy is steadily increasing since last 3 years and the increased rates are mentioned below:
 - i) Rs.1868/Qtl. in 2020-21
 - ii) Rs. 1940/Qtl. in 2021-22
 - iii) Rs. 2040/Qtl. in 2022-23.



- vii) The State of Punjab has a provision of assured procurement of Paddy to ensure fixed income for the farmers (mostly small and marginal) which is steadily increasing and the factor is a big challenge as well as hindrance in changing the mindset of farmers for adopting crop diversification.
- viii) Other crops like Moong, Jawar, Bajra etc. which can replace Paddy, are not equally remunerative. Only the crop of Cotton ensures competitive financial returns to the farmers but the Cotton crop has also been badly affected due to Pink Worm disease in Punjab during the last year.
- ix) Due to the reasons mentioned herein above, the State is frequently failing in its crop diversification efforts, which is likely to continue in coming year as well. In-spite of the challenging circumstances, the State Government is making all out possible efforts sincerely and vigorously at the highest level in co-ordination with Central Government to promote crop diversification so as to reduce the area under paddy cultivation and to improve the socio-economic status of the small and marginal farmers of the State. Crop diversification plan will lead to the reduction in the generation of paddy stubble and will ultimately contain the cause of stubble burning in the coming years.

Current promotion of In-situ Crop residue Management

- 8) That the current promotion of in-situ crop residue management in the State is summarized herein below:
 - i. The Department of Agriculture & Farmers Welfare (DoA&FW), Punjab is providing various machines for management of crop residue esp. paddy straw on subsidy in the State. Subsidy @ 50% of the cost of the machine or limited to a maximum as specified in the guidelines is being provided to the individual farmers and @ 80% limited to a maximum of Rs.12.00 lakh is being provided for

OK

establishment of Custom Hiring Centres under the Centrally Sponsored Crop Residue Management Scheme.

- ii. As per the revised guidelines of the scheme, the scheme will now will be implemented on 60:40 (Centre Share: State Share) basis. The fund allocation under the scheme for the current F.Y is ₹ 210 crores (Centre Share). Accordingly, an Annual Action plan of ₹ 350 crores (210+140) has been approved by State Level Sanctioning Committee.
- iii. The Department of Agriculture & Farmers Welfare (DoA&FW), Punjab had called for applications from farmers interested in availing subsidy under on Crop Residue Management Scheme (CRM) through agrimachinerypb.com portal. The last date for applying on portal was 18.08.2023.
- iv. The targets for In-situ machines have been circulated based on the burning area in the district and in the village. The number of applications received is as given below:

CHC	Individual farmers	Total Applications received
Number of Applications received	Number of Applications received	
10,721	60,119	70,840

- v. Till 12.10.2023, a total number of 26,927 number of sanctions has been issued to the farmers and 11,097 CRM machines has been procured by the beneficiaries. The details of the same are tabulated herein below:

Machine Name	Total Machines Sanctioned	Total Machines Sold
Super Seeder	10990	6379
Paddy Straw Chopper	3289	1706
Zero Till Drill	2618	1313



Baling Machine	1434	480
Straw Rake	1279	478
Shrub Master/ Rotary Slasher	481	187
Surface Seeder	4996	150
Hyd Rev M B Plough	539	129
Super SMS	410	120
Mulcher	381	116
Happy Seeder	234	28
Smart Seeder	132	7
Crop Reaper Self Propelled	27	2
Crop Reaper Tractor Mounted	76	2
Reaper cum Binder (Self Propelled)	41	0
Total	26927	11097

- vi. To make farmers aware regarding the ill-effects of stubble burning and use of newly developed technology, an Information, Education and Communication (IEC) campaign has been launched by the Department of Agriculture and Farmers Welfare, Punjab.
- vii. Under the Information, Education and Communication (IEC) component, 280 numbers of Village Level Camps, 200 Publicity Van Days, 20 Mobilization of Schools and 900 Wall Paintings have been conducted by the Department officials. More than 10,000 pamphlets have been distributed among the farmers for awareness.
- viii. Sarpanches have been involved to ensure zero burning in their villages. District and block level meeting with sarpanches are being held by the district officials.
- ix. The department is preparing short video on operation and maintenance of CRM machinery that would be circulated amongst the farmers through various social media platforms.
- x. During the year 2022-23, funds amounting to ₹ 7.15 crores were provided to the districts for establishment of custom hiring center in each block, with a view to provide these machines to small and marginal farmers. A total number of 273 machines were procured by the districts to provide them to farmers on Custom Hiring basis.

Handwritten signature

- xi. The straw load of basmati is less as compared to the non-basmati. Efforts have been made to increase the area under basmati variety. Basmati has been sown in 5.96 lakh hectares of area during the Kharif season as compared to 4.94 lakh hectares during the last year
- xii. I-Khet Machine App (Machinery Tracker App) is being used to achieve maximum usage of the machines and all the CRMs have been mapped on the app.
- xiii. Target to manage 110 lac tonnes through In-Situ mechanism in 2023 (20% increase over 2022)

Ex-Situ Mechanism

9) That apart from the above, there is a target of managing 45 lakh Metric Tonnes of paddy straw through ex-situ mechanism, 2023 with increase of 60% over the previous year 2022. The actions in this regard are summarized herein below:

- i. Nearly 9.0 lakh Metric Tonnes of Paddy straw is being used in 10 Biomass Power Projects. 1 upcoming Biomass Power Plant shall be operational in the coming season which shall use 1.0 lakh MT of paddy straw .
- ii. 4 CBG plants already operational which shall use 1.80 Lakh MT of paddy straw. 5 projects are upcoming which shall be operational in the coming season and shall use 1.2kh Lac MT of paddy straw. A total of 47 CBG plants have been allotted. As such, Nearly 3 Lakh MT of paddy straw shall be procured by CBG plants this year.
- iii. A Bio-Ethanol Project of capacity 100 Kilo Ltr. Ethanol Per day being executed by HPCL in Bathinda which shall use 2 lakh metric tonne of paddy straw.
- iv. 9.87 Lakh MT of paddy straw is being used in the 100 % paddy straw based boiler furnaces of the industries. 2.69 Lakh MT being used by industries having boilers based on blending of paddy straw with other fuels. 6 upcoming industries which shall use 6.01 Lakh MT of paddy

JK

straw. A total of 18.57 Lakh MT is targeted to be used by the industries in the boiler furnaces in the upcoming paddy season

- v. Directions issued to Brick Kilns to mandatorily replace at least 20% coal with paddy straw pellets. Regular meetings being held for usage of Paddy Straw Pellets as fuel by the Brick Kilns at district as well as block level.
- vi. 10 Paddy Straw Pellet manufacturing units (Torrified/Non-Torrefied) already operational in the State operational in the State utilizing 1.65 Lakh MT of paddy straw. 8 Paddy Straw Pelletizing Units (Non-Torrefied) envisaged to be operational by November 2023 which shall utilize 2.02 Lakh MT of paddy straw.

Policy Initiatives of the State

- 10) That the State Government is proactively engaged in the eradication of the problem of stubble burning and has taken policy initiatives in this regard. The efforts and initiatives of the State of Punjab in this regard are summarized herein below.
 - a) Policy notified for encouraging paddy straw as fuel in the State policy for Incentives.
 - b) First 50 existing industries in the State being provided with cumulative fiscal incentives of 25 crore on first come first serve basis, for using paddy straw as fuel in boilers.
 - c) Incentives includes Reimbursement of 100% net SGST for 7 years, with a cap of 75% of total Investment for installation of paddy straw fired boiler and 100% exemption/ reimbursement from stamp duty on purchase or lease of land and building to be exclusively used for storage.
 - d) Land is being provided by Department of Rural Development on lease basis for 33 years to industries which proposes to use paddy straw.
 - e) State Policy for co-firing 20% stubble in brick kilns (As replacement to coal) notified in November 2022.

- f) Small scale pelletization plants to be co-managed by brick kiln industries being promoted.
- g) Proposal to set 100 % paddy straw based pelletization plans/torrefaction plants in each district.
- h) Government is working on several initiatives for crop diversification including relaxation/subsidies on cotton seeds, MSP on Maize etc.

Financial Implications and Assistance sought from Central Government

(A) Incorporation of Paddy straw into Soil

- 11) That the incorporation of paddy straw into soil entails an additional expenditure of about Rs.3000-4000 per hectare to the farmer and in order to achieve zero stubble burning for the protection of environment, the State has requested time and again to Central Government to incentivize the farmers. Brief facts in this regard are given below:

- i) The Chief Minister, Punjab has written letters dated 25.9.2019, 2.11.2019 and 28.9.2020 to the Prime Minister of India with a request to provide cost compensation of Rs. 100 per quintal to the farmers for paddy straw management to cover the expenses on account of incorporation of paddy straw into soil.
- ii) The State Agriculture Department has written a letter dated 5.2.2020 to the Department of Agriculture and Farmers Welfare, Government of India that the farmers should be incentivized by way of giving Rs.100 per quintal in addition to Minimum Support Prize (MSP) for managing the paddy residue without burning.
- iii) The Chief Secretary to Government of Punjab has written a demi official letter no. 342 dated 9.7.2021 to the Chairman, Commission for Air Quality Management in National Capital Region and Adjoining Areas, New Delhi to recommend to the Government of India to provide cost compensation of Rs. 100 per quintal over and above the minimum support price to the farmers to cover the additional cost of paddy residue

management to control the stubble burning and to protect the environment as well as the health of the citizens.

(B) Proposal for financial support

i. That it is respectfully submitted that all the concerned departments of the State of Punjab are making sincere and concerted efforts to prohibit and control the cause of stubble burning, but there are financial limitations for which the State is requesting for financial assistance from the Central Government time and again. It is respectfully stated that the paddy is grown on 30 lac hectare of land approximately in the State of Punjab and it is felt that an incentive of Rs. 2500 per acre to be called as Crop Residue Management Incentive Payment (CRMIP) will tremendously encourage the farmers to not burn paddy stubble, which may be shared as below by the State of Punjab, Delhi and Government of India:

- a. Rs. 500/- per acre by Punjab Government
- b. Rs. 500/- per acre by Delhi Government
- c. Rs. 1500/- per acre Government of India

ii. As per the above arrangement, the CRMIP amount works out to be Rs. 1925 Crores and the proposed share of Punjab, Delhi and Government of India is worked out to be Rs. 375 Crores, Rs. 375 Crores and Rs. 1175 Crores (Total Rs. 1925 Crores). The State of Punjab has written letters to the Central Government in this regard as under:

- a. A letter bearing no. PS/ACS(D)/2022/870 dated 14.7.2022 is written to the Secretary, Agriculture, Government of Delhi by the Additional Chief Secretary (Agriculture and Farmers Welfare, Punjab).

JK

- b. A letter bearing no. PS/ACS(D)/2022/871 dated 14.7.2022 is written to the Secretary, Agriculture, Government of India by the Additional Chief Secretary (Agriculture and Farmers Welfare, Punjab).
- c. A letter bearing no. PS/ACS(D)/2022/872 dated 14.7.2022 is written to the Chairman, Commission for Air Quality Management in NCR and Adjoining Areas by the Additional Chief Secretary (Agriculture and Farmers Welfare, Punjab).
- iii. That, it is proposed in the above mentioned letters that the Government of India, Punjab and Delhi Governments should together help the farmers to meet the additional expenses of incorporating the stubble in soil or manage it without burning.
- iv. However, the proposal of the State of Punjab has been rejected by the Government of India, Ministry of Agriculture and Farmers Welfare vide communication dated 11.08.2022.
- 12) That the State of Punjab is taking due preventive and corrective measures as per the Framework and detailed Action Plan devised for the control of stubble burning including strict monitoring and enforcement.

The status report is placed for your kind perusal and appropriate orders please.

Date: 18/10/2023

Place: Patiala


(Gurindar Singh Majithia)
Member Secretary,
Punjab Pollution Control Board,
Patiala
On behalf of the State of Punjab

**Action Plan for
Control of Burning
of
Paddy Crop Residue in the State of Punjab**



**May, 2023
Govt. of Punjab**

19

Table of Contents

1.0 Introduction.....	2
2.0 Background.....	3
3.0 Prohibition on Burning of Crop Residue.....	5
4.0 Directions to various Departments and Authorities.....	7
5.0 Governance Mechanism	14
6.0 Crop Residue Management Plan	17
7.0 Summary of Paddy Straw Management.....	31
8.0 Reporting Formats.....	31
Annexure-1	32
Annexure-2	33
Annexure-3	34
Annexure-4	35
Annexure- 5	36
Annexure-6	37

1.0 Introduction

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 has 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 the Commission has further directed to submit the updated plan by 20.5.2022. Thereafter, CAQM vide A-11014/10/2020/CAQM-SB-Vol.II/652(DT) dated 17.02.23 has directed the State of Punjab to prepare updated Action plan for 2023 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	Deptt. of Environment
d. Effective Monitoring/Enforcement	Deptt. of Environment
e. Plans / Schemes to reduce the generation of paddy straw	Deptt. of Agriculture ⁴
f. IEC activities for behavioral change	Deptt. of Agriculture

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

2.0 Background

Punjab is an agricultural state with wheat and rice as major crops. The wheat straw is used as fodder by the animal, whereas, the use of paddy straw is limited. Paddy was cultivated in 31.67 lakh hectare area (2022) in Punjab resulting in generation of about 20.08 million tons of paddy straw. The 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
2021	29.61	24.72	4.89	16.07	2.69	18.74
2022	31.67	26.73	4.94	17.37	2.71	20.08
2023 (Est.)	31.00	25.00	6.00	16.25	3.30	19.55

2.1 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. 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, 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.1,17,672 CRM Machines have been provided to the farmers and 23,792 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
	Total	1385.38	117672	23792

- iii) 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.

2.2 The efforts are being made to use the paddy straw for various industrial and energy generation projects. It is estimated that in 2023 about 16 million tons of Paddy straw shall be used for different purposes as per following details:

S.No	Activity	Consumption of paddy straw Million Ton/ year
1	In-Situ management Paddy residue being managed through different available straw management system including machinery/ equipment. This method results in better soil health and improved productivity of paddy and wheat after 3 years	11.5
2	Ex-Situ management	3.47
2.1	Paddy straw being used in 11 Biomass Power Projects of capacity 97.50 MW	0.87
2.2	Paddy straw being used in paper / Cardboard mills/sugar industries	1.04
2.3	Paddy straw being used in Compressed bio-gas plants	0.30
2.4	Co-firing in Thermal Power Plant	0.74
2.5	Paddy straw being used in Fuel in WTE Plants and Brick Kilns	0.52
3	Paddy residue from basmati/ other paddy varieties fit for animal consumption as fodder and other usages.	1.3
	Total	16.27 Million Tons

2.3 Since only part of paddy straw is currently managed, the indiscriminate burning of left- over paddy and straw/ stubble in open fields in the State causes widespread pollution resulting in various kinds of environmental problems, huge nutritional loss of soil and health related problems. There is still need to take wide ranging measures to create awareness about the ill effects of burning of paddy as well as strictly enforcing various measures for control of burning of crop residue in the State.

3.0 Prohibition on Burning of Crop Residue

3.1 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.

3.2 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:

- (i) Small land holders having an area less than 2 Acres shall pay Environmental Compensation of Rs. 2500/- per incidence.*
- (ii) Land holders having land area more than 2 Acres but Less than 5 Acres shall pay Environmental Compensation of Rs. 5000/- per incidence.*
- (iii) 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.

3.3 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.

3.4 Order dated 25.09.2020 passed by Punjab Pollution Control Board regarding imposing Environmental Compensation against the defaulters in compliance of NGT directions

The Punjab Pollution Control Board authorized and empowered SDMs, Circle Revenue Officers (Tehsildars and Naib Tehsildars), Chief Agriculture officers, Agricultural Development Officers 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 by imposing Environmental Compensation in accordance with NGT directions passed vide order dated 10.12.2015 and in violation of PPCB directions dated 07.02.2018 and prosecution in violation of State Government Notification dated 22.10.2013.

3.5 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.

4.0 Directions to various Departments and Authorities

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

4.1 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.

(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 provide MSP for alternate crops to paddy. 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.

(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.

4.2 Department of Revenue & Rehabilitation.**(i) Entry in Khasra Girdawari**

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

(ii) Namberdaars

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.

4.3 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.

4.4 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.

4.5 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

4.6 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.

4.7 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 2023.
- (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.

4.8 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

4.9 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.

4.10 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.

4.11 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.

4.12 District Administration

(i) Appointment of Nodal officers in the District.

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 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.

31

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 two days 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.

5.0 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

5.1 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
- (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 through VC.

5.2 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.

5.3 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.

5.4 Cluster Officer

- (i) Cluster officer will fill 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.

5.5 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

34

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:
- (a) To help create awareness in the village by way of holding meetings with farmers.
 - (b) To help arrange CRM machines, if possible, in the village.
 - (c) To distribute pamphlets/ leaflets etc. in villages.
 - (d) To make announcements in Gurdwaras or by other modes.
 - (e) To interact with village schools for organizing rallies and awareness lectures to students so that these students can further create awareness of their parents.
 - (f) 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

6.0 Crop Residue Management Plan

Sr. No	Target activity	Present status (baseline data as on 31.03.2023)	Future targets			Timelines for achievement of targets			Responsible agency / Officers responsible	Plan for Kharif 2023
			2023-24	2024-25	2025-26	2023-24	2024-25	2025-26		
a) In-situ / Crop Residue Management (CRM)										
1.	Crop residue management machinery under Crop Residue Management Scheme / Submission on Agriculture Mechanization (CRM / SMAM)	117672	23000	25000	25000	30.11.2023	30.11.2024	30.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District.	1. 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 2023-24 the scheme is likely to be implemented on SMAM funding pattern (60:40). The GoI has made a budget provision of 210 crores (Center Share) for Crop Residue Management for state of Punjab. 2. The draft Annual Action Plan for the year 2023-24 of the Scheme has been submitted to GoI for approval.

2.	Village / Block / District wise mapping of the demand of CRM machinery	57891	23000	25000	25000	30.11.2023	30.11.2024	30.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	<p>During the year 2022-23, the scheme for financial assistance on procurement of CRM machinery was implemented through an online portal. The details of pending applications are as follows:</p> <p style="text-align: right;">(Nos)</p> <table border="1" data-bbox="1731 432 2157 887"> <thead> <tr> <th>Category</th> <th>Pending Applications</th> <th>Pending Machines</th> </tr> </thead> <tbody> <tr> <td>Ind. Farmer</td> <td>17273</td> <td>52237</td> </tr> <tr> <td>Reg. Farmer Group</td> <td>821</td> <td>3141</td> </tr> <tr> <td>Panchayat</td> <td>68</td> <td>262</td> </tr> <tr> <td>Co-op. Societies</td> <td>139</td> <td>551</td> </tr> <tr> <td>FPO</td> <td>440</td> <td>1700</td> </tr> <tr> <td>Total</td> <td>18741</td> <td>57891</td> </tr> </tbody> </table> <p>This shows that the demand for CRM machinery is there.</p>	Category	Pending Applications	Pending Machines	Ind. Farmer	17273	52237	Reg. Farmer Group	821	3141	Panchayat	68	262	Co-op. Societies	139	551	FPO	440	1700	Total	18741	57891
Category	Pending Applications	Pending Machines																													
Ind. Farmer	17273	52237																													
Reg. Farmer Group	821	3141																													
Panchayat	68	262																													
Co-op. Societies	139	551																													
FPO	440	1700																													
Total	18741	57891																													
3.	GAP analysis, the availability of CRM machines with each District of the State								Dept. of Agriculture / Chief Agriculture Officer of respective District	1. Gap analysis will be done by the Department along with GDI partners on the basis of existing Crop Residue Management Machinery.																					

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	<ul style="list-style-type: none"> - 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 other factors such the local weather, time to sow next crop etc. - Generally harvesting is also staggered and is done from 25thSeptember to 15th November. -The figures are based on weather watch cum area sown figures. - The Department will make farmers aware about harvesting paddy at right time so that the moisture does not exceed the limits.
----	---	--	--	--	--	--	--	--	---	---

5.	Allocation of CRM machinery (Super SMS; Happy Seederetc.)— Number of Machines	Machin e	Availa ble (Nos)	***	***	***	30.11.2023	30.11.2024	30.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	Allocation of CRM will be done as per the demand from respective Deputy Commissioners in the plan already submitted to CAQM districtwise.
		Super SMS	6142								
		H.Seeder	13664								
		S. Seeder	44146								
		Smart Seeder	10								
		ZTD	20911								
		Baler and Rakes	1409								
		Straw Choppe r	9526								
		RMB Plough	8666								
		Mulcher	6756								
		Rotary Slasher/ S.Maste r	2575								
		Rotavator	3835								
		Reaper	32								
Total	117672										

6.	Custom Hiring Centres (Cooperative) to increase machine utilization – Increase in Utilization (%)	Initial Targets for 35 ha for Custom Hiring Centre*.	+10%	+15%	+25%	30.11.2023	30.11.2024	30.11.2025	Registrar of Co-operative Societies.	<ol style="list-style-type: none"> 1. Special campaign would be launched to increase the usage of machines available in CHC's. 2. Cooperative Department to be advised to incentivize the CHCs in PACS for increasing utilization
7.	Development of electronic platform / mobile application for alloying farmers to book and use CRM – Status	I-Khet App , Mobile application for booking and use of CRM machinery has been developed and around 70,000 service providers are registered on it.							Dept. of Agriculture / Chief Agriculture Officer of respective District	<ol style="list-style-type: none"> 1. Total new users (farmers) registered through the app.- 4690 2. Total booking made through the app during the season- 123 3. I-khet Punjab app installation during the season- 26600 4. Active user at present on i-khet Punjab App- 2810

8.	Door step access of CRM to small and marginal farmers – Report in terms of Number of Machines made available.		6000	8000	12000	30.11.2023	30.11.2024	30.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	<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.</p> <p>2. The CHCs would be instructed to charge only operational costs from small and marginal farmers.</p> <p>3. Through the village level 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>
----	--	--	------	------	-------	------------	------------	------------	---	---

9.	Use of crop residue as mulch for sowing of wheat and its incorporation in soil for planting of vegetable crops— In Lakh Ha	Mulch -4.25 lakh ha with Happy Seeders and - Incorporation- For Vegetables 1.0 l ha For Wheat 5 lakh ha	5.0 1.01 6.5	6 1.03 7.5	7 1.05 8.5	30.11.20 23	30.11.20 24	30.11.20 25	Dept. of Agriculture / Chief Agriculture Officer of respective District	Mulch - 4.0 lakh ha with Happy Seeders and - incorporation- For Vegetables 1.0 l ha (Potato/ Peas) For Wheat 7.0 lakh ha 1. 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. 2. Department of Horticulture would be involved in this activity.
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	0.85 lakh Ha	5.00	6.00	7.00	30.06.20 23	30.06.20 24	30.06.20 25	Dept. of Agriculture / Chief Agriculture Officer of respective District	1. Around 0.85 Lakh hectares has been sown with DSR during the Kharif 2022. 2. The target for area to be sown using DSR during Kharif 2023 is 5.00Lakh ha.

11.	Area to be covered through Bio-Decomposer Application	4674 acres by state of Punjab	8000 acres by State of Punjab	-	-	30.06.2023	30.06.2024	30.06.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	1. 7500 acres to be managed through Bio-Decomposer Application in the State of Punjab 2. Area to be covered by M/s Nurture Farms in 2023 to be finalized yet
-----	---	-------------------------------	-------------------------------	---	---	------------	------------	------------	---	---

b) Ex-situ Crop Residue Management (CRM)

1.	Promotion of ex-situ crop residue management options,	1. 9 +1 Bio Mass Power Plants under Operation 2. Dept. of Agric. provided Assistance during 2020-21 to 2022-23 for - 768 Balers and 641 Rakes	- 1850 Balers and 1850 Rakes	3000 Balers and Rakes (50% each)	3000 Balers and Rakes (50% each)	30.11.2023	30.11.2024	30.11.2025	PEDA /Dept. of Agriculture / Chief Agriculture Officer of respective District	- PEDA is actively promoting CBG Projects in the State under NRSE Policy-2012 of Government of Punjab. -All options are being explored and encouraged. -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
2.	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 allocation and utilization.	- 10 Bio Mass Power Plants under Operation with area mapping based on availability of paddy / other crop residue and high incidences of burning through PEDA .	N.A	N.A	N.A				PEDA/ Dept. of Agriculture	i. Mapping has been done by PEDA 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. ii. Department of Agriculture will assist the efforts.

3.	Establish institutions / aggregators at Village/Block/District level		wef 1/08/2023						PEDA/Dept. Of Rural Development / Dept. of Agriculture	1. Will be taken up with Dept. of Rural Development and Panchayats 2. DoAFW officials will advise the aggregators and villagers to cooperate in the Districts.
4.	Developing appropriate decentralized mechanism for the collection, storage and transportation for industrial use of crop residue		wef 1/08/2023						PEDA/Dept. Of Rural Dev. & Panchayats / Dept. of Agriculture	In the process through Industry and Biomass Aggregators.
5.	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.		wef 1/08/2023						PEDA/ Dept. of Agriculture	DoAFW officials will advise the aggregators and villagers to cooperate in the Districts.

6.	Promoting the use of paddy straw for industrial purposes (in MT/Annum)	305900	350000	420000	500000	31.3.2024	31.3.2025	31.3.2026	PPCB	PPCB is regularly conducting campaigns to encourage the industries to install paddy straw based boilers.
7.	Mapping of the districts and villages for agriculture straw availability and demand from the industries		w.e.f. 1/11/2023						PEDA/ Dept. of Agriculture/PPCB	<ul style="list-style-type: none"> 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.
8.	Development of scheme to incentivize establishment of industries aiming at utilization of paddy straw as raw material		Will be taken up on Merit.						PEDA/Horticulture Department / Dept. of Agriculture	<p>Department of Horticulture will be assisted for providing incentives under Agriculture Infrastructure Fund (AIF) and setting up of such units.</p> <p>. DoAFW officials will advise the aggregators / business entrepreneurs to set up such units especially in the Hot Spot Districts.</p>

c) Plans / Schemes to reduce the generation of paddy straw

1.	Promoting basmati variety of rice. -- Lakh ha	4.94	6.00	6.50	7.00	30.09.2023	30.09.2024	30.09.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	Department has set up a target 6.00 Lakh ha for Basmati during Kharif 2023
2.	Suspending use of PUSA 44 variety--in terms of area -- lakh ha	4.82	3.00	2.00	1.00	30.06.2023	30.06.2024	30.06.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	<ul style="list-style-type: none"> The sale of seed of long duration variety, PUSA-44 popular in state, has been banned by Gol. Efforts are being made to reduce the area under PUSA

										<p>44 which will lead to lesser generation of paddy straw.</p> <ul style="list-style-type: none"> • Zone-wise staggered power supply from 10th June to restrict the transplanting of early sown varieties • Training camps to motivate farmers from adopting long duration varieties
3.	Use of short duration and early maturing paddy varieties- lakh ha	4	6	7.5	9	30.06.2023	30.06.2024	30.06.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	<ul style="list-style-type: none"> • Target for short duration varieties in Kharif 2023- 6 lakh ha. • Will decrease the area under long duration varieties by 10% every year. • Department of Agriculture will exert all out efforts to bring down area from paddy to other crops. • The Department is promoting Moong. Farmers sowing moong will have to opt for shorter duration varieties of paddy as moong will be harvested in June. • DoAFW in liaison with PAU Ludhiana will educate and make Farmers aware & motivated to adopt seed production of cereals / vegetables / pulses to achieve higher returns and not mere yield of grains.

4.	Promotion of crop diversification- lakh ha	4.34	8.30	9.06	9.88	30.11.2023	30.11.2024	30.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	
5.	Identification and encouraging cultivation of alternate crops such as vegetables, corn/maize, cotton, pulses and oil seeds.- lakh ha	Maize 0.95 Cotton 2.48 Sugarcane 0.903							Dept. of Agriculture / Chief Agriculture Officer of respective District /Department of Horticulture	As above in point 4

d) IEC Activities for the Plan of Action										
Sr. No.	Target activity	Present status (baseline data as on 31.03.2023)	Future targets			Timelines for achievement of targets 2023-24			Responsible agency / Officers responsible	Plan for Kharif 2023
			2023-24	2024-25	2025-26	2023-24	2024-25	2025-26		
1.	Awareness programs through print media, electronic media and social media	3738	4000	4000*	4000*	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	for ensuing kharif season 3000- village level training camps will be organized.
2.	Implementation of suitable location specific capacity building and target awareness modules.	50	66	66	66	31.11.2023	31.11.2024	31.11.2025	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	23	23	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	The campaign will be organized along with the District Administration and allied departments.
4.	Awareness through running of short films on T.V. channels	7	10	10	10	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	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	200	2000	4000	6000	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief	Campaign to be carried out in 3 Schools in each block

	communicate effectively the adverse effects of stubble burning								Agriculture Officer of respective District	
6.	Supporting farmers by organizing bio-decomposer application requirements through guidance by IEC partners.	460 Hectares	1000	2000	4000	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	<ul style="list-style-type: none"> The trials of bio-decomposers results are not very encouraging. Trials will be again conducted at PAU, Ludhiana during ensuing Kharif 2022
7.	Popularization of advantages of Microbial Consortia Technology	460	1000	2000	4000	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	Dissemination of technology through Awareness activities will be organized after recommendation by PAU.
8.	Organization of field level training programs at KVKs and other similar notified locations.	44	66	122	150	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	500 various programmes will be organized
9.	Organization of Gram Sabha's for demonstrating crop residue conservation and management machinery	4600	5000	6000	7000	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	Target for kharif 2022 Village Level Camps- 3000
10.	Regular training to agriculture and line departments..	2	6	10	12	31.11.2023	31.11.2024	31.11.2025	Dept. of Agriculture / Chief Agriculture Officer of respective District	5 sessions to be organized by PAU

7.0 Summary of Paddy Straw Management

Upon implementation of the crop residue management plan the below given targets are expected to be achieved in next 3 years with details as under:

Sr. No.	Strategy	Cumulative management of Paddy Straw (Million Tons)			
		2020-21	2021-22	2022-23	2023-24
1.	Crop Diversification	2.57	3.57	4.570	3.21
2.	In-situ Management	6.45	8.13	9.44	11.50
3.	Ex-situ Management	0.92	1.217	1.514	3.47
	Total	9.94	12.917	15.524	18.18

*In the table detailed at point no. 7.0 above, the extent of proposed Crop Diversification has been included in the Paddy Straw Management targets.

**In the table depicted at page no. 4, the extent proposed for utilization of Paddy Straw as fodder has been included in the Paddy Straw Management targets.

***The extent of In-situ and Ex-situ management of Paddy Straw mentioned in the action plans prepared on CAQM format (based on District Specific Action Plans) is based on the targets given by CAQM regarding Paddy Straw Management in 2023-24 paddy season.

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

8.0 Reporting Formats

Various Reporting formats are attached as **Annexure-1 to 3**. The Monitoring of various activities of the Action Plan is being reviewed regularly as per the reporting formats at the highest level.

PRSC – District wise Comparison of Active Fire Events for 2020, 2021 & 2022

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 2019,2020,2021 & 2022 Based On Satellite Data**

Sr. No.	District	2019	2020	2021	2022
		15 Sept to 30 Nov			
1	AMRITSAR	1579	2423	2175	1542
2	BARNALA	3132	4524	4326	2910
3	BATHINDA	5803	7827	4481	4592
4	FATEHGARH SAHIB	849	1364	1724	1149
5	FARIDKOT	2442	3851	3953	2693
6	FAZILKA	1888	3238	2388	2856
7	FIROZPUR	5027	6960	6288	4295
8	GURDASPUR	1457	1949	1396	854
9	HOSHIARPUR	299	414	331	259
10	JALANDHAR	1552	1805	2548	1388
11	KAPURTHALA	1347	1635	1797	1279
12	LUDHIANA	2445	4338	5817	2682
13	MANSA	3784	4973	3217	2815
14	MOGA	3136	5866	6515	3609
15	MUKTSAR	3827	5542	4600	3884
16	SBS NAGAR	272	193	356	270
17	PATHANKOT	4	11	6	1
18	PATIALA	4016	5306	5368	3336
19	RUPNAGAR	135	210	307	246
20	S.A.S. NAGAR	197	263	205	162
21	SANGRUR	6667	9708	8006	5239
22	TARN TARAN	3291	4529	4117	3184
23	MALERKOTLA*	0	0	1383	677
TOTAL		53149	76929	71304	49922

PRSC – 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 2022, 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 2022
1	Sangrur	5239
2	Bathinda	4592
3	Firozpur	4295
4	Muktsar	3884
5	Moga	3609
6	Patiala	3336
7	Tarn Taran	3184
8	Barnala	2910

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 since 15.09.2021? ● 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 since 15.09.2021? ● 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 khasra girdawari 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 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? 	

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
----------	-----------------	-------------	-----------	----------	-----------------	-------------	-----------

Performa for monitoring and ensuring paddy straw procurement and its storage by the industrial units

Sr. No.	Name of Office	Regional	Name of the Industry	Likely date of commissioning of Boiler with capacity in TPH	Quantity of paddy straw to be procured in TPD	Likely date of purchase of paddy straw	Name and Mobile No. of the supplier who will supply Paddy Straw to the industry	Storage space of paddy straw is available		If no, what steps are being taken up by the industry for storage space	Remarks
								Yes	No		
1.	Village- Gulabewala, Tehsil & District- Mukatsar		M/s. Malwa Power Limited (Biomass Power Project)	Already in Operation (6 MW)	1500	1st October 2023	The Company will collect paddy straw at its own Sh B.S Jangra 9876055104	Yes		NA	----
2	Village: GaddaDhob, Tehsil: Abohar, Distt: Fazilka		M/s. DEE Development Engineers Pvt. Ltd. (Biomass Power Project)	Already in Operation (8 MW)	1500	1st October 2023	The Company will collect paddy straw at its own Sh. B.S Jangra 9876055104	Yes		NA	----
3	Village: Channu, Tehsil: Malout, Distt: Mukatsar		M/s. Uiversal Biomass Energy Pvt. Ltd. (Biomass Power Project)	Already in Operation (14.50 MW)	1666	1st October 2023	The Company will collect paddy straw at its own Sh. Narinder Bhullar 9501111859	Yes		NA	----
4	Village Binjon, Tehsil: Garhshankar, Distt; Hoshiarpur		M/s. Green Planet Pvt. Ltd. (Biomass Power Project)	Already in Operation (6 MW)	583	1st October 2023	The Company will collect paddy straw at its own Sh. B.S Jangra 09876055104	Yes		NA	----

56

5	Village: BirPind, Tehsil: Nakodar, Distt; Jalandhar	M/s. Green Planet Pvt. Ltd. (Biomass Power Project)	Already in Operation (6 MW)	833	1st October 2023	The Company will collect paddy straw at its own Sh. B.S Jangra 09876055104	Yes	NA	----
6	Village: Khokhar Khurd, Tehsil & Distt: Mansa	M/s. Viaton Energy Pvt. Ltd. (Biomass Power Project)	Already in Operation (10 MW)	1666	1st October 2023	The Company will collect paddy straw at its own Sh. Tejpal Singh, 08437025103	Yes	NA	-----
7	Village: Binjon, Tehsil: Garhshankar, Distt; Hoshiarpur	M/s. Green Planet Pvt. Ltd. (Biogas Power Project)	Already in Operation (4 MW)	83	1st October 2023	The Company will collect paddy straw at its own Sh. B.S Jangra 09876055104	Yes	NA	-----
8	Village: Panchewali, Teshil: Fazilka, Distt: Fazilka	M/s. Sampuran Agriventure Pvt. Ltd. (Biogas Power Project)	Already in Operation (1 MW)	50	1st October 2023	The Company will collect paddy straw at its own Sh. Sanjeev Nagpal 09872206992	Yes	NA	-----
9	Village: Sedda Singh Wala Tehsil: Jaitu, Distt: Faridkot	M/s. Sukhbir Agro Energy Limited (Biomass Power Project)	Already in Operation (18 MW)	3333	1st October 2023	The Company will collect paddy straw at its own Sh. Ved Ratan Sinha 08076081142 08054499537	Yes	NA	----

10	Village: Hukumat Singh Wala, Tehsil & Distt: Ferozepur	M/s. Sukhbir Agro Energy Limited (Biomass Power Project)	Already in Operation (18 MW)	3333	1st October 2023	The Company will collect paddy straw at its own Sh. Ved Ratan Sinha 08076081142 08054499537	Yes	NA	----
11	Village- Bhutal Kalan, Tehsil – Lehragaga, Distt- Sangrur	M/s. Verbio India Private Limited Compressed Biogas (CBG) Project	Commissioned	1000 TPD	1st October 2023	The Company will collect paddy straw at its own. Sh. Yuvraj Verma 8700036384 9650106013	Yes	NA	Commissioned
12	Village- Ghungrali Rajputa, Tehsil – Khanna, Distt- Ludhiana	M/s. Farm gas Private limited Compressed Biogas (CBG) Project	Commissioned	666 TPD	1st October 2023	The Company will collect paddy straw at its own. Sh. Karan Kaushal 9958238882	Yes	NA	Commissioned
13	Village- Malaheri, Tehsil & Distt- Fatehgarh Sahib	M/s. Cities Innovatives Private limited Compressed Biogas (CBG) Project	Expected to be commissioned by July 2023 (2.25 Ton per day CBG)	166 TPD	1st October 2023	The Company will collect paddy straw at its own. Sh. Gurjot Singh 9880427326	Yes	NA	Construction at Site completed, Delivery/ Installation of Plant and Machinery in Progress
14	Village- Jaikhar, Tehsil Patran Distt- Patiala	M/s. Patiala RNG Private limited Compressed Biogas (CBG) Project	Expected to be commissioned by June 2023 (20 Ton per day CBG)	666 TPD	1st October 2023	The Company will collect paddy straw at its own.	Yes	NA	The execution of the project is at Full Swing.

15	Village- Fatehgarh, Tehsil Dhuri Distt- Sangrur	M/s. Sangrur RNG Private limited Compressed Biogas (CBG) Project	Under Trial runs raw biogas production started (20 Ton per day CBG	666 TPD	1st October 2023	The Company will collectpaddy straw at its own.	Yes	NA	Raw biogas production started, under trial runs.
16	Village- Swaddi Khaas-2, Tehsil Jagraon Distt- Ludhiana	M/s. Ludhiana RNG Private limited Compressed Biogas (CBG) Project	Expected to be commissioned by March 2024 (20 Ton per day CBG	666 TPD	1st October 2023	The Company will collectpaddy straw at its own.	Yes	NA	Expected to be commissioned by March 2024
17.	Tehsil & Distt- Moga	M/s. Moga RNG Private limited Compressed Biogas (CBG) Project	Expected to be commissioned by March 2024 (12 Ton per day CBG	666 TPD	1st October 2023	The Company will collectpaddy straw at its own.	Yes	NA	Expected to be commissioned by March 2024
18.	Village- Talwan-1, Tehsil Phillaur Distt- Jalandhar	M/s. Jalandhar RNG Private limited Compressed Biogas (CBG) Project	Expected to be commissioned by June 2024 (20 Ton per day CBG	666 TPD	1st October 2023	The Company will collectpaddy straw at its own.	Yes	NA	Expected to be commissioned by June 2024
19	Village Payal-1, tehsil Payal, Distt.: Ludhiana	M/s. Enerntx RNG Private limited Compressed Biogas (CBG) Project	Expected to be commissioned by July 2023 (10 Ton per day CBG	500 TPD	1st October 2023	The Company will collectpaddy straw at its own.	Yes	NA	Expected to be commissioned by July 2023

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Amritsar		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	2.50	3.50
2	Total Area under paddy cultivation	('000) ha	181.00	180.00
3	Area under Basmati variety	('000) ha	108.05	140.00
4	Area under non-basmati varieties	('000) ha	72.95	40.00
5	Area under DSR method of paddy sowing	('000) ha	2.11	2.00
6	Total Quantity of Straw Generation	Lakh Tonnes	10.68	10.30
7	Quantity for use as fodder	Lakh Tonnes	0.80	1.37
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	4.80	5.69
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.35	0.35
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.67	0.65
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	1.02	1.00
10	Grand Total Utilisation of Straw	Lakh Tonnes	6.62	8.06
11	Total Paddy Burning Incidents	No.	1542	771

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Barnala		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	1.60	4.51
2	Total Area under paddy cultivation	('000) ha	114.51	110.00
3	Area under Basmati variety	('000) ha	0.65	4.50
4	Area under non-basmati varieties	('000) ha	113.86	105.50
5	Area under DSR method of paddy sowing	('000) ha	1.22	1.90
6	Total Quantity of Straw Generation	Lakh Tonnes	7.44	7.11
7	Quantity for use as fodder	Lakh Tonnes	0.00	0.00
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	2.70	6.23
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.20	0.30
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.30
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	0.20	0.60
10	Grand Total Utilisation of Straw	Lakh Tonnes	2.90	6.83
11	Total Paddy Burning Incidents	No.	2910	1455

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District	Bathinda				Remarks
Sr. No.	Parameter	Unit	2022	2023	-
1	Area diversified to other crops	('000) ha	0.00	10.29	None
2	Total Area under paddy cultivation	('000) ha	189.79	179.50	None
3	Area under Basmati variety	('000) ha	12.83	14.50	None
4	Area under non-basmati varieties	('000) ha	176.96	165.00	None
5	Area under DSR method of paddy sowing	('000) ha	8.64	10.00	None
6	Total Quantity of Straw Generation	Lakh Tonnes	12.21	11.52	None
7	Quantity for use as fodder	Lakh Tonnes	0.00	0.38	None
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	4.51	4.55	None
9	Plan and Quantity for Ex-Situ Management				
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00	None
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	2.00	None
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00	None
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.69	1.40	None
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	3.33	* requirement by thermal plant, Lehra Muhobat
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.19	None
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00	None
	Total Ex- Situ Utilisation	Lakh Tonnes	0.69	6.92	None
10	Grand Total Utilisation of Straw	Lakh Tonnes	5.20	11.85	None
11	Total Paddy Burning Incidents	No.	4592	2296	None

Note - No area diversified in 2022 - Paddy Acreage increased (-9500 Ha)

Total Area under paddy is taken from gridawari and area under basmati reported by PRSC in year 2022

In year 2022 69,000 MT paddy straw was used by BCL Plant at village Machhana in industrial boilers in year 2023 it expected that BCL plant will use 90,000 MT, Om Sons plant at village Machhana will use 10,000 MT and Pancargo Plant at village Lehri will use 40,000 MT of paddy Straw.

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Faridkot			Remarks
Sr. No.	Parameter	Unit	2022	2023	-
1	Area diversified to other crops	('000) ha	10.62	11.16	
2	Total Area under paddy cultivation	('000) ha	115.94	115.00	
3	Area under Basmati variety	('000) ha	6.55	10.40	
4	Area under non-basmati varieties	('000) ha	109.39	104.60	
5	Area under DSR method of paddy sowing	('000) ha	2.82	3.00	
6	Total Quantity of Straw Generation	Lakh Tonnes	7.47	7.38	
7	Quantity for use as fodder	Lakh Tonnes	0.43	0.43	
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	1.15	2.32	
9	Plan and Quantity for Ex-Situ Management				
9.1	Biomass Power Generation	Lakh Tonnes	2.20	2.20	There is one industry namely M/s Sukhbir Agro Energy Ltd., Village Sedha Singh Wala, Tehsil Jaitu, District Faridkot, which has utilized 2.20 lakh MT/annum of paddy straw in the year 2022 and projections for the year 2023 are expected to remain the same.
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00	
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00	There are 02 no. proposed upcoming CBG units in the District. However, these projects are in very initial stage of execution either and are less likely to commission or procure paddy straw in the year 2023.
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00	
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00	
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.04	
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.03	0.03	
	Total Ex- Situ Utilisation	Lakh Tonnes	2.23	2.27	
10	Grand Total Utilisation of Straw	Lakh Tonnes	3.81	5.02	
11	Total Paddy Burning Incidents	No.	2693	1347	

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Fatehgarh Sahib		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	0.50	1.41
2	Total Area under paddy cultivation	('000) ha	87.16	86.00
3	Area under Basmati variety	('000) ha	9.58	11.00
4	Area under non-basmati varieties	('000) ha	77.58	75.00
5	Area under DSR method of paddy sowing	('000) ha	0.30	0.50
6	Total Quantity of Straw Generation	Lakh Tonnes	5.57	5.38
7	Quantity for use as fodder	Lakh Tonnes	0.00	0.00
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	1.46	3.64
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.08	0.08
9.4	Fuel in Industrial Boilers	Lakh Tonnes	2.28	2.50
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.00
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	2.36	2.58
10	Grand Total Utilisation of Straw	Lakh Tonnes	3.82	6.22
11	Total Paddy Burning Incidents	No.	1149	575

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District	Fazilka				Remarks
Sr. No.	Parameter	Unit	2022	2023	
1	Area diversified to other crops	('000) ha	4.94	6.90	
2	Total Area under paddy cultivation	('000) ha	108.00	101.10	
3	Area under Basmati variety	('000) ha	65.50	70.00	
4	Area under non-basmati varieties	('000) ha	42.50	31.10	
5	Area under DSR method of paddy sowing	('000) ha	15.60	17.00	
6	Total Quantity of Straw Generation	Lakh Tonnes	6.36	5.87	
7	Quantity for use as fodder	Lakh Tonnes	1.14	1.89	
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	2.36	3.33	
9	Plan and Quantity for Ex-Situ Management				
					There are 02 no. biomass power generation units namely M/s Dee Development Engineers Pvt. Ltd., Village Ghadda Dhob, Tehsil Abohar, Distt. Fazilka and M/s Sampuran Agri Ventures Pvt. Ltd., Village Panchewali, Tehsil & Distt. Fazilka. The former has utilized 0.7 lakh MT/annum and latter has utilized 0.15 lakh MT/annum of paddy straw in the year 2022. The projections for the year 2023 are expected to remain the same.
9.1	Biomass Power Generation	Lakh Tonnes	0.85	0.85	
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00	
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00	
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00	
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00	
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.10	
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.12	0.12	
	Total Ex- Situ Utilisation	Lakh Tonnes	0.97	1.07	
10	Grand Total Utilisation of Straw	Lakh Tonnes	4.47	6.29	
11	Total Paddy Burning Incidents	No.	3075	1428	

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District	Firozpur				Remarks
Sr. No.	Parameter	Unit	2022	2023	-
1	Area diversified to other crops	('000) ha	23.00	31.00	
2	Total Area under paddy cultivation	('000) ha	187.40	187.00	
3	Area under Basmati variety	('000) ha	22.07	30.00	
4	Area under non-basmati varieties	('000) ha	165.33	157.00	
5	Area under DSR method of paddy sowing	('000) ha	8.00	8.50	
6	Total Quantity of Straw Generation	Lakh Tonnes	11.96	11.68	
7	Quantity for use as fodder	Lakh Tonnes	0.01	0.02	
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	6.90	7.28	
9	Plan and Quantity for Ex-Situ Management				
9.1	Biomass Power Generation	Lakh Tonnes	2.25	2.25	There is one industry namely M/s Sukhbir Agro Energy Ltd., Village Hakumat Singh Wala, Ferozepur - Moga Road, District Ferozepur, which has utilized 2.25 lakh MT/annum of paddy straw in the year 2022 and projections for the year 2023 are expected to remain the same.
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00	
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00	
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00	
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00	
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.06	
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.21	0.21	
	Total Ex- Situ Utilisation	Lakh Tonnes	2.46	2.52	
10	Grand Total Utilisation of Straw	Lakh Tonnes	9.37	9.81	
11	Total Paddy Burning Incidents	No.	4295	2148	

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Gurdaspur		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	36.00	39.00
2	Total Area under paddy cultivation	('000) ha	173.00	170.00
3	Area under Basmati variety	('000) ha	24.07	27.07
4	Area under non-basmati varieties	('000) ha	148.93	142.93
5	Area under DSR method of paddy sowing	('000) ha	2.40	2.50
6	Total Quantity of Straw Generation	Lakh Tonnes	11.00	10.78
7	Quantity for use as fodder	Lakh Tonnes	0.52	0.60
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	8.13	8.78
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	Nil	Nil
9.2	Production of Bio-Ethanol	Lakh Tonnes	Nil	Nil
9.3	Compressed Bio Gas	Lakh Tonnes	Nil	Nil
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.05	0.05
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	Nil	Nil
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.76
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.04
	Total Ex- Situ Utilisation	Lakh Tonnes	0.05	0.84
10	Grand Total Utilisation of Straw	Lakh Tonnes	8.70	10.22
11	Total Paddy Burning Incidents	No.	854	427

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Hoshiarpur		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	0.00	5.17
2	Total Area under paddy cultivation	('000) ha	79.17	74.00
3	Area under Basmati variety	('000) ha	2.60	4.00
4	Area under non-basmati varieties	('000) ha	76.57	70.00
5	Area under DSR method of paddy sowing	('000) ha	0.65	2.00
6	Total Quantity of Straw Generation	Lakh Tonnes	5.12	4.77
7	Quantity for use as fodder	Lakh Tonnes	0.75	1.07
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	3.76	3.05
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.40	0.40
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.20	0.23
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.01	0.02
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	0.61	0.65
10	Grand Total Utilisation of Straw	Lakh Tonnes	5.12	4.77
11	Total Paddy Burning Incidents	No.	259	0

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Jalandhar		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	29.14	31.00
2	Total Area under paddy cultivation	('000) ha	174.00	170.00
3	Area under Basmati variety	('000) ha	15.88	17.40
4	Area under non-basmati varieties	('000) ha	158.12	152.60
5	Area under DSR method of paddy sowing	('000) ha	1.34	2.68
6	Total Quantity of Straw Generation	Lakh Tonnes	11.15	10.88
7	Quantity for use as fodder	Lakh Tonnes	0.49	0.49
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	5.51	6.98
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.50	0.70
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.57
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.42
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	0.50	1.69
10	Grand Total Utilisation of Straw	Lakh Tonnes	6.51	9.17
11	Total Paddy Burning Incidents	No.	1388	694

Note:-

There are 02 industrial units and 01 Biomass based power plant which have projected to use

- (A) M/s Green Planet Energy Pvt. Ltd., Village Birpind, Nakodar, Jalandhar (Bio Mass based P @ 70,000 MT. in Year 2022 it has utilized 50,000 MT of paddy straw as fuel and for year 70,000 MT paddy as fuel.
- (B) M/s Bhogpur Vo-opertaive Sugar Mill, Bhogpur, Distt. Jalandhar @ 50,000 MT.
- (C) M/s Pee Kay Paper & Board Mill Pvt. Ltd., Sangowal Road, Mehatpur, Jalandhar)@ 7,000 M

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Kapurthala		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	1.04	1.10
2	Total Area under paddy cultivation	('000) ha	119.39	118.70
3	Area under Basmati variety	('000) ha	4.07	5.20
4	Area under non-basmati varieties	('000) ha	115.32	113.50
5	Area under DSR method of paddy sowing	('000) ha	0.60	0.70
6	Total Quantity of Straw Generation	Lakh Tonnes	7.72	7.66
7	Quantity for use as fodder	Lakh Tonnes	0.52	0.59
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	4.50	5.26
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.19
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	0.00	0.19
10	Grand Total Utilisation of Straw	Lakh Tonnes	5.02	6.04
11	Total Paddy Burning Incidents	No.	1279	640

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Ludhiana		
Sr. No.	Parameter	Unit	2022-23	2023-24
1	Area diversified to other crops	('000) ha	26.20	27.50
2	Total Area under paddy cultivation	('000) ha	258.80	257.50
3	Area under Basmati variety	('000) ha	7.55	10.00
4	Area under non-basmati varieties	('000) ha	251.25	247.50
5	Area under DSR method of paddy sowing	('000) ha	2.80	5.00
6	Total Quantity of Straw Generation	Lakh Tonnes	16.75	16.64
7	Quantity for use as fodder	Lakh Tonnes	0.20	0.50
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	8.21	9.15
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.31	0.34
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.69	0.81
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.75
9.7	Bio-compost and other misc. applications	Lakh Tonnes	1.34	2.26
	Total Ex- Situ Utilisation	Lakh Tonnes	2.34	4.16
10	Grand Total Utilisation of Straw	Lakh Tonnes	10.75	13.81
11	Total Paddy Burning Incidents	No.	2682	1341

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Malerkotla		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	0.00	0.10
2	Total Area under paddy cultivation	('000) ha	52.84	52.70
3	Area under Basmati variety	('000) ha	3.20	7.00
4	Area under non-basmati varieties	('000) ha	49.64	45.70
5	Area under DSR method of paddy sowing	('000) ha	0.32	0.50
6	Total Quantity of Straw Generation	Lakh Tonnes	3.40	3.36
7	Quantity for use as fodder	Lakh Tonnes	0.10	0.28
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	1.54	2.81
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.15
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.12
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	0.00	0.27
10	Grand Total Utilisation of Straw	Lakh Tonnes	1.64	3.36
11	Total Paddy Burning Incidents	No.	677	0

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Mansa		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	47.12	60.00
2	Total Area under paddy cultivation	('000) ha	126.25	113.40
3	Area under Basmati variety	('000) ha	12.00	20.00
4	Area under non-basmati varieties	('000) ha	114.25	93.40
5	Area under DSR method of paddy sowing	('000) ha	4.97	5.20
6	Total Quantity of Straw Generation	Lakh Tonnes	8.09	7.17
7	Quantity for use as fodder	Lakh Tonnes	1.20	1.50
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	2.43	3.84
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.70	0.85
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.78	1.30
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.14
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.02	0.40
	Total Ex- Situ Utilisation	Lakh Tonnes	1.50	2.69
10	Grand Total Utilisation of Straw	Lakh Tonnes	5.13	8.04
11	Total Paddy Burning Incidents	No.	2815	1408

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Muktsar		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	33.50	50.00
2	Total Area under paddy cultivation	('000) ha	183.00	166.50
3	Area under Basmati variety	('000) ha	82.60	90.00
4	Area under non-basmati varieties	('000) ha	100.40	76.50
5	Area under DSR method of paddy sowing	('000) ha	16.00	20.00
6	Total Quantity of Straw Generation	Lakh Tonnes	11.07	9.92
7	Quantity for use as fodder	Lakh Tonnes	0.01	0.02
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	5.25	5.61
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	2.70	2.70
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	1.30	2.57
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.25
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	4.00	5.52
10	Grand Total Utilisation of Straw	Lakh Tonnes	9.26	11.14
11	Total Paddy Burning Incidents	No.	3884	1942

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023					
District		Moga			Remarks
Sr. No.	Parameter	Unit	2022	2023	
1	Area diversified to other crops	('000) ha	10.00	11.00	
2	Total Area under paddy cultivation	('000) ha	183.17	182.00	
3	Area under Basmati variety	('000) ha	3.60	5.00	
4	Area under non-basmati varieties	('000) ha	179.57	177.00	
5	Area under DSR method of paddy sowing	('000) ha	1.70	2.00	
6	Total Quantity of Straw Generation	Lakh Tonnes	11.87	11.78	
7	Quantity for use as fodder	Lakh Tonnes	0.02	0.02	
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	5.75	6.80	
9	Plan and Quantity for Ex-Situ Management				
9.1	Biomass Power Generation	Lakh Tonnes	0.20	0.60	There is one unit namely M/s Green Planet Energy Pvt. Ltd., Village Manuke Gill, Tehsil Nihal Singh Wala, Distt. Moga. Though, the plant was not in operation in the year 2022 however, it has procured paddy straw @ 0.2 lakh MT/annum in the kharif harvesting season 2022-23. Further, the industry has telephonically informed that in compliance to interim order of Appellate Tribunal for Electricity, New Delhi, plant will be made operation in the year 2023 and paddy straw @ approximately 0.6 lakh MT/annum will be procured
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00	
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00	There are 03 no. proposed upcoming CBG units in the District. However, these projects are in very initial stage of execution either and are less likely to commission or procure paddy straw in the year 2023.
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.01	0.10	
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00	
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.05	0.15	
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.01	0.01	
	Total Ex- Situ Utilisation	Lakh Tonnes	0.268	0.86	
10	Grand Total Utilisation of Straw	Lakh Tonnes	6.038	7.68	
11	Total Paddy Burning Incidents	No.	3609	1805	

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Pathankot		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	15.77	17.09
2	Total Area under paddy cultivation	('000) ha	26.40	25.90
3	Area under Basmati variety	('000) ha	2.50	3.00
4	Area under non-basmati varieties	('000) ha	23.90	22.90
5	Area under DSR method of paddy sowing	('000) ha	0.18	0.20
6	Total Quantity of Straw Generation	Lakh Tonnes	1.69	1.65
7	Quantity for use as fodder	Lakh Tonnes	1.39	1.35
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	0.30	0.30
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.45	0.45*
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.00
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00
	Total Ex- Situ Utilisation	Lakh Tonnes	0.45	0.45
10	Grand Total Utilisation of Straw	Lakh Tonnes	2.14	2.10
11	Total Paddy Burning Incidents	No.	1	0

*straw is obtained from other districts

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023					
District		Patiala			Reply to remarks
Sr. No.	Parameter	Unit	2022	2023	
1	Area diversified to other crops	(000) ha	0.00	1.04	
2	Total Area under paddy cultivation	(000) ha	233.55	232.50	For 2022,
3	Area under basmati variety	(000) ha	17.35	20.00	
4	Area under non-basmati varieties	(000) ha	216.20	212.50	Area under Non-basmati varieties = 2,16,000 ha, Area under basmati varieties = 17,350 ha, Total area= 2,33,350 ha
5	Area under DSR method of paddy sowing	(000) ha	2.61	3.00	For 2022, DSR Area in Patiala = 2,610 ha
6	Total Quantity of Straw Generation	Lakh Tonnes	14.99	13.95	For 2022, Straw generation in Non-Basmati varieties (@ 6.5 ton/ha) = 14,04,000 ton, straw generated in basmati varieties (@ 5.5 ton/ha) = 95,425 ton, Total straw generation= 14,99,425 ton..... For 2023, The Straw generation is proposed to be 13.95 lakh Tons.
7	Quantity for use as fodder	Lakh Tonnes	0.90	1.00	
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	4.49	7.20	
9	Plan and Quantity for Ex-Situ Management				
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00	
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00	
9.3	Compressed Bio Gas	Lakh Tonnes	0.22	0.50	M/s Patiala RING Private Limited, Bio-CNG Plant, Village Jakhar, Tehsil Patran, District - Patiala has been established and ready to commission. The unit procured 22,000 Tons of paddy straw in 2022 and will procure 50,000 Tons of paddy straw in 2023.
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.22	0.49	For year 2022 M/s Ganesh edvle oil amleh distt fatehgarh Sahib falling at Sr. No. 2 of list A of PPCB, utilized 22,000 Tons of Paddy Straw from District Patiala. For year 2023 1. M/s Ganesh edvle oil amleh distt fatehgarh Sahib falling at Sr. No. 4 of list B of PPCB, has proposed to utilize 45,000 Tons of Paddy Straw from District Patiala. 2. M/s Sardar Solvek, Village Dulladi, Tehsil Nabha, Distt. Patiala is installing 10 TPH capacity paddy straw based boiler, which shall utilize 3000 Tons of Paddy Straw in 2023 and shall be added in list B of PPCB. 3. M/s DSG Paper Pvt. Ltd., Village Bhanri, Main Road, Tehsil E. Distt. Patiala falling at Sr. No. 3 of list B of PPCB as placed order for paddy straw based boiler of capacity 60 TPH, which shall utilize 1 lakh ton of paddy straw. However, the industry shall not procure any paddy straw in the year 2023.
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.63	M/s Nabha Power Limited, Village Nalash, Tehsil Rajpura, District Patiala has placed tender for co-firing of 62,500 tons of paddy straw pellets along with coal in the year 2023.
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.29	There are 119 brick kilns in District Patiala, which shall use 28,600 tons of paddy straw in 2023.
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.12	0.58	For year 2022 1. M/s Punjab Renewable Energy Systems Pvt. Ltd., Village Kulburchan, Tehsil Samana, Distt. Patiala - Paddy Straw Briquette Plant procured 8,000 tons of paddy straw. 2. M/s AZP Energy Solutions Pvt. Ltd., Village Mirzapur, Tehsil Rajpura, District Patiala - Paddy Straw Briquette Plant procured 2500 tons of paddy straw. 3. 14 no. card Board mills in District Patiala procured collectively 1000 tons of paddy straw to be used as raw material. For year 2023 1. M/s Punjab Renewable Energy Systems Pvt. Ltd., Village Kulburchan, Tehsil Samana, Distt. Patiala has now installed a paddy straw pelletization plant of capacity 80 TPD, which shall procure 25,000 tons of paddy straw in the year 2023. 2. M/s AZP Energy Solutions Pvt. Ltd., Village Mirzapur, Tehsil Rajpura, District Patiala - Paddy Straw Briquette Plant shall procure 2500 tons of paddy straw in the year 2023. 3. 14 no. card Board mills in District Patiala shall procure collectively 1000 tons of paddy straw to be used as raw material in the year 2023. 4. M/s SPS Fuel, Village Badanpur, Tehsil Samana, Distt. Patiala has placed the order for procurement of paddy straw pelletization plant of capacity 5 TPH and this plant shall procure 30,000 tons of paddy straw in year 2023.
	Total Ex- Situ Utilisation	Lakh Tonnes	0.56	2.48	
10	Grand Total Utilisation of Straw	Lakh Tonnes	5.95	10.68	
11	Total Paddy Burning Incidents	No.	3336	1668	

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District	Rupnagar				Remarks
Sr. No.	Parameter	Unit	2022	2023	-
1	Area diversified to other crops	('000) ha	0.20	0.50	None
2	Total Area under paddy cultivation	('000) ha	40.80	40.30	None
3	Area under Basmati variety	('000) ha	2.02	3.10	None
4	Area under non-basmati varieties	('000) ha	38.78	37.20	None
5	Area under DSR method of paddy sowing	('000) ha	0.22	0.20	None
6	Total Quantity of Straw Generation	Lakh Tonnes	2.63	2.59	None
7	Quantity for use as fodder	Lakh Tonnes	0.00	0.00	None
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	2.16	2.11	None
9	Plan and Quantity for Ex-Situ Management				
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00	None
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00	None
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00	None
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00	None
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	1.30	Pellets will be managed from other districts
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.11	Pellets will be managed from other districts
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00	None
	Total Ex- Situ Utilisation	Lakh Tonnes	0.00	1.41	None
10	Grand Total Utilisation of Straw	Lakh Tonnes	2.17	3.52	None
11	Total Paddy Burning Incidents	No.	246	0	None

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Sangrur		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	0.00	0.30
2	Total Area under paddy cultivation	('000) ha	238.69	238.30
3	Area under Basmati variety	('000) ha	27.33	43.00
4	Area under non-basmati varieties	('000) ha	211.36	195.30
5	Area under DSR method of paddy sowing	('000) ha	3.27	5.00
6	Total Quantity of Straw Generation	Lakh Tonnes	15.24	15.06
7	Quantity for use as fodder	Lakh Tonnes	0.46	0.54
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	5.03	9.87
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.40	0.65
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.40
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.07	0.10
	Total Ex- Situ Utilisation	Lakh Tonnes	0.47	1.15
10	Grand Total Utilisation of Straw	Lakh Tonnes	5.95	11.55
11	Total Paddy Burning Incidents	No.	5239	2620

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		SAS Nagar		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	0.3	0.59
2	Total Area under paddy cultivation	('000) ha	30.59	30
3	Area under Basmati variety	('000) ha	0.42	1.5
4	Area under non-basmati varieties	('000) ha	30.17	28.5
5	Area under DSR method of paddy sowing	('000) ha	0.6	1
6	Total Quantity of Straw Generation	Lakh Tonnes	1.98	1.95
7	Quantity for use as fodder	Lakh Tonnes	0.672	0.1
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	1.248	0.78
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0	0
9.2	Production of Bio-Ethanol	Lakh Tonnes	0	0
9.3	Compressed Bio Gas	Lakh Tonnes	0	0
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.06	0.8675
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0	0
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0	0.2025
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0	0
	Total Ex- Situ Utilisation	Lakh Tonnes	0.06	1.07
10	Grand Total Utilisation of Straw	Lakh Tonnes	1.98	1.95
11	Total Paddy Burning Incidents	No.	162	0

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		SBS Nagar			Remarks
Sr. No.	Parameter	Unit	2022	2023	-
1	Area diversified to other crops	('000) ha	0.65	0.50	None
2	Total Area under paddy cultivation	('000) ha	58.00	57.50	None
3	Area under Basmati variety	('000) ha	2.50	2.70	None
4	Area under non-basmati varieties	('000) ha	55.50	54.80	None
5	Area under DSR method of paddy sowing	('000) ha	0.384	0.60	None
6	Total Quantity of Straw Generation	Lakh Tonnes	3.75	3.71	None
7	Quantity for use as fodder	Lakh Tonnes	0.09	0.09	None
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	1.61	2.00	None
9	Plan and Quantity for Ex-Situ Management				
9.1	Biomass Power Generation	Lakh Tonnes	0.000	0.00	None
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00	None
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00	None
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.004	0.21	Used in M/s Nawanshahr Power Plant
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.00	None
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.04	None
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.00	0.00	None
	Total Ex- Situ Utilisation	Lakh Tonnes	0.004	0.25	None
10	Grand Total Utilisation of Straw	Lakh Tonnes	1.70	2.34	None
11	Total Paddy Burning Incidents	No.	270	0	None

District Specific Plans for Prevention and Control of Paddy Straw Burning 2023

District		Tarn Taran		
Sr. No.	Parameter	Unit	2022	2023
1	Area diversified to other crops	('000) ha	14.55	18.00
2	Total Area under paddy cultivation	('000) ha	183.97	180.00
3	Area under Basmati variety	('000) ha	54.88	65.00
4	Area under non-basmati varieties	('000) ha	129.09	119.00
5	Area under DSR method of paddy sowing	('000) ha	1.24	1.50
6	Total Quantity of Straw Generation	Lakh Tonnes	11.41	11.31
7	Quantity for use as fodder	Lakh Tonnes	0.35	1.00
8	Plan and Quantity for In-Situ Management	Lakh Tonnes	5.66	7.80
9	Plan and Quantity for Ex-Situ Management			
9.1	Biomass Power Generation	Lakh Tonnes	0.00	0.00
9.2	Production of Bio-Ethanol	Lakh Tonnes	0.00	0.00
9.3	Compressed Bio Gas	Lakh Tonnes	0.00	0.00
9.4	Fuel in Industrial Boilers	Lakh Tonnes	0.00	0.00
9.5	Cofiring in Thermal Power Plants	Lakh Tonnes	0.00	0.90
9.6	Fuel in WTE Plants and Brick Kilns	Lakh Tonnes	0.00	0.11
9.7	Bio-compost and other misc. applications	Lakh Tonnes	0.04	0.04
	Total Ex- Situ Utilisation	Lakh Tonnes	0.04	1.05
10	Grand Total Utilisation of Straw	Lakh Tonnes	6.05	9.85
11	Total Paddy Burning Incidents	No.	3184	1592