



उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड  
UTTAR PRADESH POLLUTION CONTROL BOARD

पत्रांक संख्या-Ho.5558/सी-5/136/0AN.293/22

दिनांक...12/1/24  
पंजीकृत

To,

The Registrar General,  
Principal Bench,  
Hon'ble National Green Tribunal,  
Copernicus Marg, New Delhi-110001

**Sub: Submission of Joint Committee Report in compliance of order dated 04.10.2023 in the matter of MA no. 40/2023 in O.A. no. 293/2022 Amandeep Singh Sandhu Vs State of UP & Ors.**

Sir,

In compliance of the direction dated 04.10.2023 passed by this Hon'ble National Green Tribunal MA no. 40/2023 in O.A. no. 293/2022 Amandeep Singh Sandhu Vs State of UP & Ors, the Joint Committee Report is hereby attached with a request to put up before Hon'ble National Green Tribunal for kind perusal and consideration.

**Enclosure: As above.**

Your's Sincerely

(Dr. Ram Karan)

Chief Environmental Officer,  
Circle-5

**Copy to:**

1. Shri Arvind Kumar, Advocate for UPPCB.
2. Law Officer-I, UPPCB, Lucknow.
3. Regional Officer, UPPCB, Lucknow.

Chief Environmental Officer,  
Circle-5

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# Joint Committee Report

(21-12-2023)

## Regarding

Satha rice Cultivation in District Lakhimpur matter of

Amandeep Singh Sandhu Vs State of U.P.

(MA. No. 40/2023 in OA No 293/2022)

## Prepared by

The joint committee of IARI (PUSA) New Delhi, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, District Ayodhya, District Agriculture Officer, Lakhimpur Khiri and Regional Office, Uttar Pradesh Pollution Control Board (UPPCB) Lucknow.

## Constituted by

Hon'ble National Green Tribunal

(Order dated 04th October, 2023)

Joint Committee report regarding Satha rice Cultivation in District Lakhimpur in Compliance of Direction Issued by Hon'ble National Green Tribunal in case of MA. No. 40/2023 OA No 293/2022 Amandeep Singh Sandhu Vs State of U.P.

Hon'ble NGT, New Delhi in MA. No. 40/2023 in OA No 293/2022, Amandeep Singh Sandhu V/s State of Uttar Pradesh has passed vide order dated-04-10-2023. The main content of the order are as follows:-

".....3. Report dated 26.09.2023 has been filed on behalf of State Ground Water Authority by way of email dated 26.09.2023.

4. We have gone through report filed by State Ground Water Authority and we find that it is substantial reproduction of the earlier report filed before learned Registrar General of this Tribunal and in both the reports while highlighting the adverse environmental impacts of cultivation of Satha crop it was mentioned that an early decision will be taken in the matter. The case involves the question of permissibility of cultivation of Satha crop in District Lakhimpur-Khiri, Uttar Pradesh. In the reports it has been mentioned that cultivation of Satha crop has been prohibited in adjoining Districts namely; Shahjahanpur and Pilibhit.

5. In view of the facts and circumstances of the case and considering importance of Satha crop as traditional crop with enormous cultural and medicinal values attached to it, we consider it appropriate to constitute a Joint Committee comprising of representative of the Additional Chief Secretaries/Principal Secretaries, Environment and Forest and Climate Change and Department of Agriculture, Government of U.P., a Scientist to be nominated by Director IARI, Pusa, New Delhi and a Scientist to be nominated by the Vice Chancellor, Acharya Narendra Deva University of Agriculture and Technology, Kumarganj, District Ayodhya, State of Uttar Pradesh and Member Secretary, UPPCB to carry out study/assessment of the environmental impacts of cultivation of the Satha crop in the concerned areas of the State of Uttar Pradesh and give its suggestions regarding prohibitory/regulatory/remedial measures required to be taken regarding cultivation thereof in the State of Uttar Pradesh. UPPCB will be nodal agency for coordination and compliance.

6. The report of the Joint Committee may be furnished within two months by e-mail at [judicial.ngt@gov.in](mailto:judicial.ngt@gov.in) preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.

7. List for further consideration on 23.01.2024....."

In compliance to the aforesaid direction of Hon'ble NGT, a Joint Committee comprising:-

- 1- Professor and Principal Scientist) Division of Environment Sciences, IARI (PUSA), New Delhi.
- 2- Senior Rice Breeder, Acharya Narendra Deva University of Agriculture and Technology, NDUAT Kumarganj, District Ayodhya.
- 3- District Agriculture Officer.

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4- Assistant Scientific Officer, Regional Office, U.P. Pollution Control Board Lucknow.

The Joint Committee has Survey regarding Satha rice Cultivation in Lakhimpur district, on dated- 21-12-2023. The details of findings are mentioned below-

Team comprising, Dr Dinesh Kumar Sharma (Professor and Principal Scientist, Division of Environment Sciences, IARI (PUSA), Dr Saurabh Dixit, Senior Rice Breeder NDUAT, Mr Arvind Kumar Chaudhary, District Agriculture Officer (DAO), Lakhimpur Khiri, Dr. Santosh Kumar Vishkarma Senior Scientist, Krishi vigyan kendra Jamunabad Gola Kheri. Dr. Pradeep Kumar Bishen, Scientist Agronomy, Krishi vigyan Kendra, Jamunabad Gola Kheri and Mr. Pankaj Shukla (ASO), (UP, Pollution Control Board) surveyed and interacted with farmers and discussed various issues pertaining to the cultivation of Satha rice in District Lakhimpur Khiri.

As represented that the Satha crop of rice is grown traditionally and earlier with satha land races of rice (60 days maturity) in the limited area obtaining very low yield potentials but in new era the farmers are growing improved rice varieties (110 to 130 days maturity); viz. PR 126, Pusa 1509, NDR 97, Govind etc., as commercial rice crop with the objective to obtain >50q/ha yield. Farmers manage the crop with imbalance use of fertilizers (apply Urea and Zink only), more no. of irrigation (12 irrigations), apply two to three sprays of fungicide/ insecticide. In fact, these are not satha cultivation, this is commercial rice cultivation. These commercial varieties are not known for any of its mediational properties. The rice cereal always having social, religious and cultural values. In overall view of the cultivation of summer rice (which is not satha) is having adverse environmental impacts:

- Requires more water to grow than other crops in summer, resulted ground water goes down gradually, while during rainy (kharif) season the water requirement of rice crop fulfilled by rains and supported by one to three irrigations only rather than twelve irrigations during summer.
- Crop rotation (sequence of crop grown in a same land in one year) rice-wheat-rice is non-scientific which is followed by these farmers. Cereal (rice) followed by cereal (wheat) again cereal (rice) crop reduces the soil fertility in long term.
- Imbalance use of fertilizers; farmers used only urea and zinc in summer rice crop.
- Summer rice followed by wet season (kharif) rice crop reduces the microbial activities and earthworm population due to continuous anerobic conditions (submergence condition) during long crop growth duration (Feb. to May and June to Oct.).
- Under puddled and submerged conditions of rice cultivation, methane (CH<sub>4</sub>) emission is more which a potent Green House Gas (GHG), having 24 times more Global Warming Potential (GWP) than carbon di oxide (CO<sub>2</sub>).
- For rice cultivation farmers perform repeated tillage and puddling for field preparation which make a hard pan in sub surface area, which prohibited the deep percolation (down word movement of water) to recharge the ground water. While a lot of ground water are pulled through submersible pumps for irrigation which leads decrease in ground water table.

- Evapotranspiration rate is also higher in summer rice crop than the wet (Kharif) season due to higher temperature ( $>40^{\circ}\text{C}$ ) in summer.

#### Suggestions:

There are following suggestions to the farmers

- Farmers should grow other alternative crops like urd- moong, maize or vegetables etc. during summer (Zaid). These crops require less water than rice. Scientifically urd-moong are pulse crop; required less water and fertilizers also matures less than 100 days.
- The crop rotation recommended for agriculture season (One year)

Season 1 <sup>st</sup> Jun-Oct. Kharif crop (wet or rainy)	Season 2 <sup>nd</sup> Nov.-Feb. Rabi crop (winter)	Season 3 <sup>rd</sup> March-May Zaid crop (Summer)
Rice	Wheat	Urd/ moong
Rice	Pea/gram/lentil	Maize
Rice	Mustard	Urd/ moong
Rice	Potato	Urd/ moong
Rice	Pea/gram/lentil	Summer vegetables
Rice	Wheat	Sesbania(daincha) for green manuring
Fallow (No crop)	Potato	Urd/ moong
Rice	Vegetables	Urd/ moong
Rice	Vegetables	Maize
Maize	Potato	Urd/ moong
Maize	Wheat	Urd/ moong

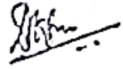
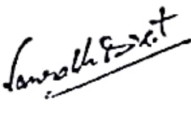
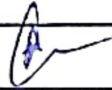


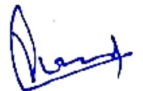
- The fertilizer and agrochemical (fungicide/insecticide) requirements of optional summer crops is less than rice. Urd/ moong pulses add nitrogen through N-fixation, also improve soil carbon content. Maize is  $\text{C}_4$  plant which are more efficiently convert light energy in to chemical energy (protein) during photo synthesis.
- Urd/ moong crops improve microbial activities in soil due to rhizobium nodes and anaerobic field conditions also increase earthworm population. Earthworm makes soil porous and form capillaries to increase soil water soaking capacity resulted ground water recharge.

- Loss of water through evapotranspiration may reduce by urd-moong crop because of horizontal growth habit during summer also refer as cover crop.
- Maize crop canopy reduces the evapotranspiration, therefore, requires less irrigation than rice.
- If we are going to ban summer rice cultivation it will affect the livelihood and financial security to the farmers. Further diversification of cropping system need government support in terms of market and price regulation. Also require awareness programme at large scale related to water, soil health and environment. Direct seeded rice (DSR) technology to be promoted in place of transplanting in these areas to save water because it is having lower water and carbon footprint having 30 to 40 % less Green House Gases (GHGs). More emphasis should be given to maintain soil fertility and breaking of hard pan. For that inclusion of pulses as sole or intercrop in the cropping system to be promoted as per the situation and deep ploughing to be carried out in summer season after three years.
- Once the summer cultivation of rice crop stopped in adjoining districts due to its demerits. It is necessary to take precautions because sub-surface water flow across the districts, regions or even states (there is no limit of sub-surface movement of water).
- Haryana and Punjab have the highest yields of rice and wheat in South Asia. Irrigation practices for these crops, however, pose a threat to the region's groundwater levels that are being fast depleted. Paddy is procured by the government at minimum support price (MSP), and leads to over-exploitation of underground aquifers.
- In Punjab a law, Preservation of subsoil moisture Act, 2009 was enacted which aims at conserving groundwater by mandatorily delaying the transplanting of paddy to beyond June 10, when the most severe phase of evapotranspiration (transfer of water from land to the atmosphere through evaporation from the soil and plant transpiration) is over. Farmers were forbidden from sowing paddy before May 10 and transplanting it before June 10.
- Haryana also enacted similar law, Haryana Preservation of Sub Soil Water Act, 2009 (Haryana Act No. 6 of 2009). An Act to provide for the prohibition of sowing

of nursery of paddy and transplanting of paddy before the dates notified and for matters connected therewith or incidental thereto.

- Two or three more visit is needed for collecting more data when satha crop is in the field during February and March 2024.

### 1- Survey Team:

Sr. No.	Name of Inspecting Officers	Designation	Signature
1	Dr Dinesh Kumar Sharma	Professor and Principal Scientist, Division of Environment Sciences, IARI (PUSA), New Delhi	
2	Dr Saurabh Dixit	Senior Rice Breeder, Acharya Narendra Deva University of Agriculture and Technology, NDUAT Kumarganj, District Ayodhya.	
3	Arvind Kumar Chaudhary	District Agriculture Officer (DAO), Lakhimpur Khiri.	
4	Dr. Santosh Kumar Vishkarma	Senior Scientist, Krishi vigya Kendra Jamunabad Gola Lakhimpur Khiri	
5	Dr. Pradeep Kumar Bishen,	Scientist Agronomy, Krishi vigya Kendra Jamunabad Gola Lakhimpur Khiri	
6	Pankaj Shukla	Assistant Scientific Officer, Regional Office, U.P. Pollution Control Board, Lucknow.	Retired
7	Vinod Kumar	Assistant Environmental Engineer, Regional Office, U.P. Pollution Control Board, Lucknow.	

**2-Photo gallery:-**

**Photographs taken during Survey regarding Satha rice Cultivation in District Lakhimpur on dated 21-12-2023**



**Photo 1**



**Photo 2**



**Photo 3**



**Photo 4**