

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

Performance of the National Action Plan on Climate Change

**COMMITTEE ON ESTIMATES
(2023-24)**

THIRTY- SIXTH REPORT

(SEVENTEENTH LOK SABHA)



**LOK SABHA SECRETARIAT
NEW DELHI**

THIRTY SIXTH REPORT
COMMITTEE ON ESTIMATES
(2023-24)
(SEVENTEENTH LOK SABHA)

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

Performance of the National Action Plan on Climate Change

(Presented to Lok Sabha on 06.02.2024 February 2024)



LOK SABHA SECRETARIAT
NEW DELHI

February, 2024/ Magha, 1945 (Saka)

CONTENTS

Page No.

Composition of the Committee on Estimates (2023-24)

Introduction

CHAPTER-I	Report	1-23
CHAPTER-II	Observations/Recommendations which have been accepted by the Government	24-97
CHAPTER-III	Observations/Recommendations which the Committee do not desire to pursue in view of Government's reply	98-112
CHAPTER-IV	Observations/Recommendations in respect of which Government's replies have not been accepted by the Committee	113-114
CHAPTER-V	Observations/Recommendations in respect of which final replies of Government are still awaited	115-117

APPENDICES

I.	Minutes of the 17 th Sitting of the Committee on estimates held on 01.02.2024	118-119
II.	Analysis of Action taken by the Government on the Observations/Recommendations contained in the 30 th Report (16 th Lok Sabha) of the Committee on Estimates.	120

COMPOSITION OF THE COMMITTEE ON ESTIMATES (2023-2024)

Dr. Sanjay Jaiswal – Chairperson

2. Kunwar Danish Ali
3. Shri Kalyan Banerjee
4. Shri Sudarshan Bhagat
5. Shri P. P. Chaudhary
6. Shri Nihal Chand Chauhan
7. Shri Dilip Saikia
8. Shri Harish Dwivedi
9. Shri Parvatagouda Chandanagouda Gaddigoudar
10. Ms. Bhavana Gawali (Patil)
11. Shri Dharmendra Kumar Kashyap
12. Shri Srinivas Kesineni
13. Shri Mohanbhai Kalyanji Kundariya
14. Thiru Dayanidhi Maran
15. Shri Pinaki Misra
16. Shri K. Muraleedharan
17. Shri Jual Oram
18. Shri S. S. Palanimanickam
19. Shri Kamlesh Paswan
20. Dr. K.C. Patel
21. Shri Ashok Kumar Rawat
22. Shri Magunta Sreenivasulu Reddy
23. Shri Rajiv Pratap Rudy
24. Shri Francisco Cosme Sardinha
25. Shri Jugal Kishore Sharma
26. Shri Prathap Simha
27. Shri Parvesh Sahib Singh
28. Smt. Sangeeta Kumari Singh Deo
29. Shri R. K. Singh Patel *
30. Shri Sumedhanand Saraswati #

* Elected as Member of the Committee vide Bulletin Part II Para No. 7096 dated 28th July, 2023

Elected as Member of the Committee *vide* Bulletin Part II Para No. 7764 dated 19th December, 2023

Secretariat

1. Shri Santosh Kumar
2. Shri Muraleedharan. P
3. Smt. Anju Kukreja

Joint Secretary
Director
Deputy Secretary

INTRODUCTION

I, the Chairperson of the Committee on Estimates (2023-24) having been authorized by the Committee to present the Report on their behalf, do present this 36th Report on action taken by the Government on the recommendations contained in the 30th Report (Sixteenth Lok Sabha) of the Committee on the subject “Performance of the National Action Plan on Climate Change” pertaining to the Ministry of Environment, Forest and Climate Change.

2. The 30th Report (Sixteenth Lok Sabha) of the Committee on Estimates was presented to Lok Sabha on 13th December 2018. The Government furnished their replies indicating action taken on the recommendations contained in the 30th Report on 13th September, 2021, 28th October, 2021, 18th July, 2023 and 24th August, 2023. The draft Report was considered and approved on 1st February, 2024, by the Committee.

3. An analysis of action taken by the Government on the recommendations contained in the 30th Report (Sixteenth Lok Sabha) of the Committee on Estimates is given in Appendix-II.

NEW DELHI
February 2024

Magha 1945 (Saka)

DR. SANJAY JAISWAL
CHAIRPERSON
COMMITTEE ON ESTIMATES

REPORT**CHAPTER – I****INTRODUCTORY**

1. This Report of the Committee on Estimates deals with the Action Taken by the Government on the Observations/Recommendations of the Committee contained in their 30th Report (16th Lok Sabha) on the subject “Performance of the National Action Plan on Climate Change” pertaining to the Ministry of Environment, Forest and Climate Change.
2. The 30th Report (16th Lok Sabha), was presented to Lok Sabha on 13th December, 2018 contained 48 Observations/Recommendations. The Action Taken Notes in respect of all the Observations/Recommendations have been received from the Ministry of Environment, Forest and Climate Change on 13th September, 2021, 28th October, 2021, 18th July, 2023 and 24th August, 2023.
3. Action Taken Note to the Observations/Recommendations contained in the Report have broadly been categorised as under:
 - (i) Observations/Recommendations which have been accepted by the Government:
Para No. 2-6, 10, 11, 12, 13, 16-23, 27-29, 31, 33-35, 37, 38, 41-43, 45-48
Total – 33
(Chapter – II)
 - (ii) Observations/Recommendations which the Committee do not desire to pursue in view of the replies received from the Government:
Para No. – 7, 14, 15, 24, 25, 26, 30, 32, 36, 40 & 49
Total – 11
(Chapter – III)
 - (iii) Observations/Recommendations in respect of which replies of the Government have not been accepted by the Committee and which require reiteration:
Para No. – 8 & 9
Total – 2
(Chapter – IV)
 - (iv) Observations/Recommendations in respect of which final replies of Government are still awaited:
Para No. – 39 & 44
Total –2
(Chapter – V)

4. **The Committee desire that Action Taken Notes in respect of the Observations/Recommendations contained in Chapter-I and final Action Taken Notes in respect of the Observations/Recommendations contained in Chapter-V of this Report may be furnished to them at the earliest.**
5. The Committee will now deal with Observations/Recommendations which require reiteration or merit further comments.

Delay in submission of Action Taken Notes

6. **The Committee observe that as per procedure, ATNs on the recommendations contained in Original Report are required to be furnished by the Ministries/Departments concerned to the Committee within six months of the presentation of the Report to the Parliament. The Committee are concerned to note that the 30th Report (16th Lok Sabha) of the Committee on the subject “Performance of the National Action Plan on Climate Change” was presented to Parliament on 13th December, 2018. The MoEF&CC was required to furnish the ATNs on the observations/recommendations as contained therein by 12th June, 2019. The Committee note that the first set of requisite ATNs have been received by them with a long delay i.e. on 13th September, 2021 (Para Nos. 2,3,5,6,11 to 15, 23 to 25, 33 to 39), the second set of ATNs on Para Nos. 16-22 were received on 28th October, 2021. Further, after issuing reminders for furnishing the remaining Action Taken Notes the MoEF&CC have furnished the Action Taken Notes on Para Nos. 4 and 7 to 10 on 18th July, 2023 and Action Taken Notes on Para Nos. 26-32 have been received on 24th August, 2023. The Committee take serious note of this/unprecedented prolonged delay on part of the Ministry and desire a robust monitoring mechanism for timely submission of ATNs to the Committee, failing which, responsibility of the officials concerned for the delay may be fixed for delays in future.**

Observations/Recommendations (Para No. 2)

7. Recognising the need of inter-ministerial coordination and laying of six monthly Report to Parliament on each mission, the Committee had recommended as under:

“The Committee find that the Government is implementing the National Action Plan on Climate Change (NAPCC), which includes eight national Missions covering solar energy, enhanced energy efficiency, agriculture, water, sustainable habitat, Green India, Himalayan ecosystem and Strategic Knowledge for Climate Change, apart from various other initiatives. Each Mission is administered by a Ministry/Department which is responsible for its

implementation and lays down the budget provisions and actionable priorities for it. The broad policy initiatives of the Central Government are supplemented by actions at the sub-national levels by the State Governments/UTs. The National Bank for Agriculture and Rural Development (NABARD) has been appointed as National Implementing Entity (NIE) responsible for implementation of adaptation projects under the National Adaptation Fund for Climate Change (NAFCC). Besides, research and scientific institutions provide scientific inputs for framing various policies on climate change.

Some of the experts who deposed before the Committee raised the issue of fragmented approach and lack of coordination amongst various Ministries/Stakeholders. The Committee find that the activities covered by various Missions are inter-related and the developments in a Mission in an area has bearing on the other Missions. NAPCC being a multi-tiered structure with various Ministries/ Departments administering various Missions supplemented by actions at the States/UTs level, the objectives of the action plan for climate change can only be achieved through collective action and partnerships for which integrated approach and coordination amongst various Ministries, State Government/Union Territories and all other implementing agencies is utmost necessary. The Ministry of Environment and Forests & Climate Change (MoEF&CC) being the main coordinating Ministry has to take the desired initiatives. For inter-Ministerial coordination, the Committee recommend for setting up of an inter-Ministerial entity to quarterly review the performance of each implementing agency. Besides, MoEF&CC should have a public information portal displaying up-to-date data/information about mandate, targets as well as achievements of each of the Missions under specific heads so as to enable the stakeholders to track what is happening in different areas concerning climate change. Besides, the information about the adverse effects of climate change should be displayed in the portal so as to sensitize and involve the public at large on this important issue. The Committee would also like to recommend that six monthly report of each Ministry/Department administering the specific Missions) giving the status of implementation on various parameters should be laid in Parliament.”

8. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change has submitted as under:

- “The "India Climate Change Knowledge Portal" was launched on 27 November 2020. This web portal provides information on the different climate initiatives taken by various Line Ministries enabling users to access updated status on these initiatives.

- The eight major components included in the knowledge portal are:

1. India's Climate Profile

2. National Policy Framework
3. India's NDC goals
4. Adaptation Actions
5. Mitigation Actions
6. Bilateral and Multilateral Cooperation
7. International Climate Negotiations
8. Reports & Publications

- The Web Portal can be accessed at: <https://www.cckpindia.nic.in/>
- Meetings of the Executive Committee on Climate Change (ECCC) have been regularly held (Seventh Meeting of the ECCC was held on 3 February, 2021 and Eighth Meeting of the ECCC was held on 1st September, 2021), chaired by Principal Secretary to the Prime Minister.”

9. The experts, deposing before the Committee had raised the issue of fragmented approach and lack of coordination amongst various Ministries/Stakeholders and therefore, the Committee had recommended for setting up of an inter-Ministerial entity to quarterly review performance of each implementing agency. However, there is no mention of inter-ministerial coordination entity in the Action Taken Note as furnished by MoEF&CC, which is required to play a crucial role in the development/progress of Missions and cohesive and synchronised effort by Ministries. The Committee reiterates its original recommendation to establish inter-Ministerial entity promptly to ensure the performance of each implementing agency to focus on addressing the issues of fragmented approaches and lack of coordination among various Ministries/Departments.

Further, Action Taken Note is also silent about the laying of six monthly report to Parliament by each Ministry/Department detailing the status of implementation on various parameters. The Committee strongly feel that regular reporting will enhance accountability, transparency and Parliamentary oversight, ensuring that climate change initiatives are progressing as planned. The Committee desire to be apprised of the action taken by the MoEF&CC towards the implementation of the recommendation of the Committee and ensure that six-monthly reports are submitted to Parliament by each Ministry/Department administering specific Mission(s).

Observations/Recommendations (Para No. 3)

10. Regarding formulation of State Action Plans on climate change and their implementation status at ground level, the Committee had recommended as under:

“The Committee note from the information furnished by the Government that 32 States and Union Territories have so far put in place the State Action Plans on Climate Change attempting to mainstream climate change concerns in their planning process.

The Committee would like to be apprised about the implementation status of the State Action Plans at the ground level. About the remaining States where State Action Plans have not been formulated, the Committee would like to be apprised about the specific reasons for delay in formulating State Action Plans. These States should be pursued for putting in place State Action Plans expeditiously.”

In their Action Taken Note, the Ministry of Environment, Forest and Climate Change has submitted as under:

“Preparation of State Action Plans on Climate Change (SAPCCs) has been reviewed by the Ministry of Environment, Forest & Climate Change (MoEFCC). Guidelines for SAPCC revision have been issued, along with funding support @ Rs 20 lakh per State/UT. Tamil Nadu, Odisha, Himachal Pradesh, Madhya Pradesh and Gujarat have submitted revised SAPCCs. SAPCC Regional Workshops are being convened for accelerating the work.”

11. While observing that 32 States/UTs had put in place the State Action Plans on climate change in their planning process, the Committee desired to be apprised of implementation of status of the States Action Plan at the ground level and also of the specific reasons for delay in formulating State Action Plans in respect of remaining States. In the Action Taken Note, the Committee have been informed that in pursuance of their recommendation, the MOEF&CC issued guidelines for revision of SAPCC along with funding support of Rs. 20 lakh per State/UTs, as a result five States have submitted revised SAPCCs. The Committee recommend for initiating capacity building programmes for States that have not yet formulated SAPCCs. This could include providing technical assistance, training workshops and sharing best practices from the States that have successfully implemented their plans. The Committee would like to be apprised of the reasons for the delay in formulating SAPPCCs in those States that have not yet done so and implementation status of SAPCC at ground level.

Observations/Recommendations (Para No. 4)

12. With a view to developing climate resilient economy, the Committee had recommended as under:

“The Committee during the course of deliberations have been apprised by a representative of the Ministry of Earth Sciences that the proposal for setting up a National Coastal Mission has been prepared jointly with MoEF&CC and is at the advanced stage of approval. With the high Shoreline Vulnerability along Indian Coast as mentioned in the para above, the Committee strongly recommend for setting up of

a new Mission i.e. National Coastal Mission so as to give focused attention to climate change issues related to coastal areas. The Committee would also like to be apprised as to whether the Government propose to set up some more new Missions in areas like health, waste-to-energy.”

13. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

- (a) “National Coastal Mission (NCM) is an ongoing sub-scheme under National Coastal Management Programme of Ministry of Environment, Forest & Climate Change (MOEFCC) with a budgetary outlay of Rs. 87.5 cr spread over 2021-2026.
- (b) A proposal for enhancing the scope of on-going National Coastal Mission to promote and give impetus to development of climate resilient blue economy development without compromising the safeguard of coastal ecosystem and marine environment has been submitted to Department of Expenditure for consideration.
- (c) This Ministry agrees with the statement of representative of Ministry of Earth Sciences in respect of preparation of proposal to upscale National Coastal Mission jointly with all line-ministries including Ministry of Earth Science.
- (d) NAPCC encompasses eight core missions in the specific areas of Solar Energy, Enhanced Energy Efficiency, Sustainable Habitat, Water, Sustaining the Himalayan Ecosystem, Strategic Knowledge for Climate Change, Green India, and Sustainable Agriculture, which are anchored by Ministry of New and Renewable Energy; Bureau of Energy Efficiency (Ministry of Power), Ministry of Housing and Urban Affairs, Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, Department of Science and Technology, Ministry of Environment, Forests & Climate Change, and Ministry of Agriculture and Farmer Welfare, respectively. Three new national missions on (i) Health & Climate Change, (ii) Coastal, and (iii) Sustainable Transport have been approved by the Executive Committee on Climate Change (ECCC). National Mission on Health & Climate Change has been finalized and approved by the ECCC, the mission documents on Coastal and Sustainable Transport are being worked upon and will be finalized at the earliest. MoEFCC is following up on the same for completion of the exercise.”

14. The Committee note that National Coastal Mission is an ongoing sub-scheme under National Coastal Management Programme of MoEF&CC and for enhancing the scope, a proposal in this regard has been submitted to Department of Expenditure for consideration. The Committee would like to know the date of submission of proposal to the Department of Expenditure and the present status of consideration of the same.

Observation/Recommendation (Para No. 8)

15. While enquiring the reason of shortfall in Phase-I and II projects under National Solar Mission, the Committee had recommended as under:

“The Committee find from the data made available by the Ministry of New and Renewable Energy that whereas the performance of NSM during Phase-I (2010-2013) remained satisfactory with achievement of installation/sanctioned solar power generation both grid and off-grid, i.e., 1938.94 MW surpassing the targets of 1300 MW and installation of 7.01 million sq.m of collector areas against the target of 7 million sq.m, the performance has slowed down during Phase-II (2013-2017) of the Mission. The targets of 15900 MW under grid-connected solar power could not be achieved fully with achievement remaining 10602.83 MW thus the shortfall being 5297.17 MW. Under the off-grid solar applications segment, although the power sanctioned, i.e., 713 MW surpassed the targets of 600 MW, the installed power remained just 345.5 MW. Under Solar Thermal Collectors Segment, there is underachievement of targets, achievement being 5 million sq.m against the targets of 8 million sq.m. So far as the performance during the year 2017-18 is concerned, although tenders have been issued in respect of 22945 MW, the power commissioned is just 4804 MW. For another 10048 MW, PPA has been signed but it is not commissioned. The Committee express strong concern over the slowdown of the performance under the Solar Mission during Phase-II and recommend to critically review the performance so as to understand the reasons for the shortfall in achieving the set targets. Since Phase-III of the Mission has already commenced, it is utmost necessary to take the corrective actions besides effective monitoring of the projects so as to achieve the ambitious target of 100000 MW by 2021-22.”

16. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change has submitted as under:

“The suggestions of the Committee have been noted. Concerted efforts are being made in this regard in consultation with various stakeholders. Further, regular review meetings/video conferences have been taken by various levels to review the progress from time to time and to achieve the set targets without any shortfall.

Phase-wise targets have not been achieved as targeted. However, the progress has picked up in last few years. The installed solar capacity has increased by — 200% with addition of — 45 GW in last five years. As on 31-05-2023, a cumulative capacity of 67,821 MW of solar power projects has already been installed in the country. Further, a capacity of around 51,413 MW is under implementation, for which a Letter of Intent (LoI) has been issued, and about 48,878 MW is under the tendering stage.

Regarding solar thermal collector installations, 12 million sq. meters solar thermal collector area have been installed (specific scheme ended in 2017-18). At present, its installation is taking place in market mode.”

17. While expressing concern over the slowdown of the performance of NSM during Phase-II, the Committee in their original Report had recommended for analyzing the reasons for the shortfall in achieving the set targets under phase-II of the Mission so as to take corrective measures and to put in place effective monitoring mechanism in phase-III of NSM for achieving the ambitious target of 100000 MW by 2020-21. In this regard, Ministry of Environment, Forests and Climate Change in their ATN informed the Committee that as on 31.05.2023, a cumulative capacity of 67,821 MW of Solar Power projects has already been installed in the Country. Further, a capacity of around 51,413 MW is under implementation, for which a Letter of Intents (LoI) has been issued and about 48,787 MW is under the tendering stage. The Committee find that reasons of shortfall in achievement of targets have not been furnished. Further, for phase-III, too there seems the flippant attitude of the Ministry towards achieving the ambitious target of 100000 MW Solar Power generation by 2021-22 as large percentage of capacity is still either under implementation or under the tendering stage. While taking a strong view towards delay in achievement of targets, the Committee reiterate its recommendation of taking corrective actions and establishment of robust monitoring mechanism to track the progress of solar power projects including periodic updates on the financial status, project timelines and physical progress against planned targets. Regular monitoring will enable the Ministry to stay informed, address challenges promptly and provide appropriate guidance in the matter. The Committee would like to be apprised of the targets envisaged and achieved till date in respect of Phase-I, II and III within six months of the presentation of this Report to Parliament.

Observation/Recommendation (Para No. 9)

18. In their Recommendation contained in the original Report, the Committee had stated as under:

“So far as State-wise commissioning of grid-connected solar projects is concerned, there is uneven performance in various States. Whereas Andhra Pradesh, Rajasthan, Tamil Nadu, Telangana, Gujarat, Karnataka, Madhya Pradesh and Punjab remained the first eight leading States with total cumulative capacity in MW as being, 1998.83, 1871.22, 1697.32, 1609.27, 1249.37, 1082.48, 857.04 and 809.45 respectively, the performance in some other big States having larger area of land like Maharashtra, Uttar Pradesh, J&K, Odisha and Chhattisgarh, is not so encouraging. The Committee recommend that the Ministry should review State-wise performance of the projects and take the required initiatives particularly in remote and hilly areas.”

19. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

“The suggestions of the Committee have been noted. Efforts are being made in this regard, in consultation with various stakeholders. It is a fact that solar installations in various States, especially Hilly and North Eastern States, are low as it depends on various factors such as solar radiation, land availability, State policies etc.

As on 31-05-2023, total cumulative solar installation in Maharashtra, Uttar Pradesh, J&K, Odisha and Chhattisgarh are 4725 MW, 2520 MW, 50 MW, 458 MW and 950 MW respectively.

Ministry of New and Renewable Energy (MNRE) conducts regular review meetings with State Governments/developers for installation of Renewable Energy Projects.

Under the Solar Park scheme, smaller parks in the Himalayan & other hilly States where contiguous land may be difficult, are also considered. Further, smaller parks may also be considered in States/UTs with shortage of non-agricultural lands.

As on 31-05-2023, Solar Parks of cumulative capacity of 750 MW in Maharashtra, 3730 MW in Uttar Pradesh, 340 MW in Odisha and 20 MW in Mizoram are sanctioned. The Solar Park in Mizoram is already developed. The other parks are at various stages of implementation.”

20. Upon noticing that the performance of some big States having large area of land like Maharashtra, Uttar Pradesh, J&K, Odisha and Chattisgarh was not so encouraging for commissioning of grid-connected Solar Projects, the Committee in their Original Report had recommended the Ministry to review State-wise performance of the projects and take the required initiatives particularly in remote and hilly areas. The Ministry in their ATN have stated that as on 31.05.2023, total cumulative solar installation in Maharashtra, Uttar Pradesh, J&K, Odisha and Chattisgarh are 4725 MW, 2520 MW, 50 MW, 458 MW and 950 MW respectively. The Ministry have further submitted that it is a fact that solar installations in various States especially Hilly and North Eastern States, are low as it depends on various factors such as solar radiation, land availability, State policies etc. The Committee would like to know the current status of grid and off-grid solar power park State/UT-wise along with the special efforts made for remote and hilly areas.

Observation/Recommendation (Para No. 13)

National Mission on Enhanced Energy Efficiency

21. Giving due weightage for Research and Development on every efficient technologies, the Committee had recommended as under:

“The Committee note that the objective of the Mission is to upscale the efforts to unlock the market for energy efficiency which is estimated to be around 74,000 crore and help achieve total avoided capacity addition of 19,598 MW, fuel savings of around 23 million tonnes per year and greenhouse gas (GHG) emissions reductions of 98.55 million tonnes per year at its full implementation stage. To achieve its aim, NMEBE spells out four initiatives to enhance energy efficiency in energy intensive industries.

The first initiative is Perform Achieve and Trade (PAT) Scheme providing for mandatory energy saving targets for Energy Intensive industries. The Committee note that the targets set under this have broadly been achieved and 8.67 million tonnes oil equivalent (MTOE) saved while CO2 mitigation was of the order of 30 million tonnes.

The Committee, however, feel that the targets set under PAT cycle I were modest and that was the reason they were achieved in spite of less financial allocation and utilisation. PAT cycle II and III covering the period 2016-19 and 2017-20 respectively expands the vertical as well as horizontal coverage of the scheme. The Committee feel that the focus of the scheme is on incrementally reducing energy consumption in industries that are energy intensive. The Committee recommend for giving emphasis to R&D for energy efficient technologies for which adequate investment is required. The Committee also recommend to incentivize start-ups to encourage them to come to solar energy sector which would help in bringing innovations to this field.”

22. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

- For supporting R&D for energy efficient technologies, BEE has provided financial assistance to National Physical Laboratory (NPL) for setting up of reference lab for LEDs and Central Power Research Institute (CPRI) for setting up of labs for testing and calibration facilities for LEDs and LED lighting systems.
- Support for R&D to customize the induction cook stove for Indian cooking system has been initiated in IIT Gandhi Nagar and Guwahati through Central PowerResearch Institute (CPRI).
- For larger uptake of innovative technologies in energy intensive sectors under the Perform, Achieve and Trade (PAT) scheme, proposal for demonstration of such technologies is under process.
- Proposal for R&D in Electric Mobility such as drivetrains, batteries and V2G technologies.

23. The Committee find that adequate efforts have not been made for Research and Development in energy intensive sectors. Further, there is no mention of incentivizing start-ups for which Government may initiate pro-active steps with institutions likes IITs and IISCs and others. It has also been stated that proposals for demonstration of energy intensive technologies are under process. The Committee would like to have on break-through on these matters including the outcome of above demonstration.

Observation/Recommendation (Para No. 26)

National Mission for Green India

24. Emphasizing the need of comprehensive planning for rural and urban areas under National Mission on Sustainable Habitat, the Committee had recommended as under:

“The Committee note that the National Mission on Sustainable Habitat (NMSH) aims at promoting sustainability of habitats through improvements in energy efficiency in buildings, urban planning, improved management of solid and liquid waste including recycling and power generation, modal shift towards public transport and conservation. The Committee find that major components of the mission are, improvements in energy efficiency in buildings through extension of energy conservation building code, better urban planning and modal shift to public transport, improved solid, liquid waste management in urban areas, improved ability of habitats to adapt to climate change by improving resilience in infrastructure, community based disaster management and measures for advance warning system for extreme weather events and conservation through appropriate changes in legal and regulatory framework. The objectives of the mission are being met through schemes such as Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Swachh Bharat Mission, Smart Cities Mission and Urban Transport Programme. By the year 2021, these four schemes will result in mitigating GHG emission of 133 million tonnes and by the year 2031, the mitigation will be to the tune of 270 million tonnes. The Committee find that the emphasis of the mission is limited to urban habitats only. There is no attention to rural habitats. As the population of the Country increases, there will be expansion of cities with villages subsumed within the cities. If the integrated plan under the mission does not take into account the requirements of the rural habitats, the problem

would not be fully addressed. The Committee are of the view that mission on sustainable habitat has to see the habitat landscape in totality, only then sustainable solutions are possible. The Committee, therefore, recommend that the mission should introduce a comprehensive and integrated planning encompassing the needs of both rural as well as urban habitats. The Committee may be apprised of the steps taken in this regard.”

25. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

“The subjects of housing and urban development are in the ambit of State Governments. However, Union (Government plays a catalytic role through formulation and administration of various Policies and Missions, implementation of which is done by the State Governments. Ministry of Housing and Urban Affairs (MoHUA) is mandated to formulate policies on Urban Sector only, while Ministry of Rural Development formulates policies and programmes pertaining to the Rural Sector. Preparation of plans for cities and villages also comes within the purview of State Governments. For planned development, MoHUA has formulated Urban and Regional Development Plan Formulation and Implementation (URDPFI) Guidelines, which advocates preparation of comprehensive and integrated planning encompassing the needs of urban habitats.”

26. The Committee find that reply is silent about forwarding the recommendation to Ministry of Rural Development and State Governments/UTs. The Committee would like to be apprised of their reaction.

Observation/Recommendation (Para No. 27)

27. Having felt the need of inclusion of traditional construction technologies/knowledges in building codes and Guidelines, the Committee had recommended as under:

“The Committee note that the mission envisages improvements in energy efficiency in buildings through extension of the energy conservation building code - which addresses the design of new and large commercial buildings to optimize their energy demand. The Committee are of the view that energy conservation building code talks about important things about energy efficiency of large buildings such as use of natural light and air for reduced energy requirements. The main issue, however, is the enforceability of the building code. Enforcing changes in construction through imposition of codes

may also result in resistance from the people. Moreover, the Committee are of the view that as an ancient civilization, our Country has traditional house building knowledge and technology which are more suited for our needs. All the habitats whether in desert habitat, mountain habitat or plain areas, people have traditional building system designed for comfortable living and maximum use of natural resources like air and water and locally available materials. Blindly following western technologies and using cement and concrete in different habitats result in buildings requiring intensive energy. Therefore, building designs in new cities should be environment friendly, energy friendly and water friendly. The construction of residential/ commercial buildings should be in a way that enables proper cross ventilation and natural light which would reduce the use of energy. The Committee, therefore, recommend to formulate building code and guidelines of the Mission which maximizes use of traditional knowledge and building material in buildings, minimize cutting of trees besides promoting our traditional construction technologies through institutions like CAPART, HUDCO etc.”

28. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

“Ministry of Housing and Urban Affairs (MoHUA) is implementing Pradhan Mantri Awas Yojana - Urban (PMAY-U) since June 2015 to provide all-weather pucca house with basic amenities to all eligible urban households of the country. Based on the project proposals submitted by States/ Union Territories (UTs), as on 31st July 2023, 118.90 lakh houses have been sanctioned by the Ministry, out of which 112.30 lakh have been grounded and 76.02 lakh have been completed/ delivered to the beneficiaries. The scheme period of PMAY-U which was earlier upto 31.03.2022, has since been extended up to 31.12.2024, except Credit Linked Subsidy Scheme (CLSS) vertical of the scheme, to complete all the houses sanctioned without changing the funding pattern and implementation methodology.

To accelerate adoption of innovative and alternative construction technologies, to improve the pace and quality of work under PMAY-U and for addressing the challenges of rapid urban growth and its attendant requirements, a Technology Sub Mission (TSM) has been set up in PMAY-U. The sub mission aims to facilitate adoption of modern, innovative and green technologies and building materials for faster and quality construction of houses. The sub mission, inter alia, works on green buildings using natural resources, innovative technologies and materials, earthquake and other disaster resistant technologies and design. Building Material and Techno10kY Promotion Council (BMTPC) has already been working on promoting the use of local and traditional knowledge with regard to the construction technologies and building material. Further, it is working to develop and operationalize a comprehensive and integrated approach for promotion of environment friendly and energy efficient innovative building materials and construction technologies.”

29. While observing that our country has traditional house building knowledge and technology having traditional building system designed for comfortable living and maximum use of natural resources like air, water and locally available materials rather using cement and concrete, which result in buildings requiring intensive energy, the Committee had recommended to formulate building code and guidelines of the Mission which maximizes use of traditional knowledge and building material in buildings, minimize cutting of tree besides promoting our traditional construction technologies through institutions like CAPART, HUDCO etc. The Committee are pleased to note that several measures including setting up of Technology Sub Mission (TSM), adoption of modern innovative and green technologies and building materials for faster and quality construction of houses have been taken by the Ministry. It has also been informed that Technology Sub Mission works on green buildings using natural resources, innovative technologies and design. While taking note of the measures initiated by the Ministry to develop the buildings environment friendly, energy friendly and having proper cross ventilation and natural light, the Committee desire to be apprised of the outcome of the measures initiated by the TSM and Building Material and Technology Programme Council (BMTPC) in order to improve the construction of residential/commercial buildings system so as to ensure reducing the use of energy therein and urge to ensure that the Technology Sub Mission (TSM) under PMAY-U actively promotes and facilitates the adoption of energy - efficient and environment-friendly building materials and technologies.

Observation/Recommendation (Para No. 28)

30. In their Recommendation contained in the original Report, the Committee had stated as under:

“The Committee note that at present 30 percent population of the Country lives in urban areas which is expected to grow to 40 percent by 2021 and 50 percent by 2050. The number of motor vehicles on our roads was 52.37 million in 2000 which increased to 121.63 million in 2011. The Committee note that India is poised for rapid economic growth. Such future growth will largely come from economic activities in urban areas as cities today contribute nearly 65 percent of India's GDP. With increasing urban sprawl, it is estimated that by 2030, this figure would reach nearly 70 percent. Nonetheless, economic activities would largely depend on mobility of the people dwelling in urban areas. Hence, development of cities through prioritizing urban transport is a step forward in this direction. Urban Transport is a key urban service that imparts efficiency to the city by providing mobility to the workforce and hence best productivity. However, the huge number of vehicles on roads is also leading to congestion and pollution. The number of motor vehicles on our roads was 52.37 million in 2000 which increased to 121.63 million in 2011. The total number of registered motor vehicles in India was 210.02 million as on 31.03.2015. As a result of rapid increase in motor vehicles, congestion on

the road is increasing leading to stress to the commuters and spike in air pollution. One of the objectives of the mission is better urban planning and modal shift to public transport and making long term transport plan to facilitate the growth of medium and small cities in such a way that ensures efficient and convenient public transport.

The Committee note that the Government is implementing AMRUT scheme (Atal Mission for Rejuvenation and Urban Transformation) and Smart Cities mission under the Sustainable Habitat Mission. AMRUT inter alia aims at reducing pollution by switching to public transport or providing facilities for non-motorised transport whereas the aim of Smart Cities mission is to provide basic infrastructure through convergence with other schemes in selected 100 cities. The Government is also encouraging public transport through financing of buses and BUS Rapid Transit System (BRTS) and Jawaharlal Nehru National Urban Renewal Mission (JnNURM). Metro Rail Projects are being implemented in 13 cities of the Country. The Committee are of the view that schemes such as AMRUT and Smart Cities Mission are effective schemes for promoting public transport but their horizontal coverage is very small. Such schemes need to be expanded to other cities also so that the problem could be resolved before it is too late. Similarly, the metro rail services should be expanded to all cities which have a population of more than a million. The Committee also recommend that in major cities multiple modes of transport such as local trains, trams should also be promoted. Besides, attention needs to be paid to switching over to clean energy for running our vehicles, i.e., cars and buses. Manufacture/ use of electric cars needs to be incentivized besides giving attention to the infrastructure/ services needed like electrical recharging stations. Not only that R&D in solar driven transport like cars and buses should be given more emphasis so as to find solar solutions for our transport. For covering small distances, dedicated cycle tracks need to be constructed. The satellite cities should be linked with the nodal city through rapid transport system to avoid congestion in the city centres. All the initiatives being taken in this regard need to be further emphasized, which certainly would reduce our dependence on diesel/petrol thereby saving money and addressing the issue of pollution particularly in big cities and metros.”

31. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

“Urban transport, which is an integral part of urban development, is a State subject. Therefore, respective state governments are responsible for planning and developing urban transport infrastructure. Ministry of Housing and Urban Affairs (MoHUA) provides financial assistance to such projects under its policy/guidelines, when such proposals are mooted by State Governments subject to feasibility of the projects and availability of resources.

However, in order to deal with the emerging problems of increasing number of private vehicles, traffic congestion, travel time uncertainty, air pollution, etc. due to rapid urbanization, has taken certain initiatives which are enumerated as under:

- i. MoHUA formulated National Urban Transport Policy in April, 2006. The objective of the policy is to ensure accessible, safe, affordable, quick, comfortable, reliable and sustainable mobility for all. The policy seeks to promote integrated land use and transport planning, greater use of public transport and non-motorized modes of travel and use of cleaner technologies. It offers Central Government's financial support for investments in public transport, infrastructure for greater use of non-motorized modes of transport, construction of parking facilities etc. It encourages capacity building, innovative financing mechanisms, institutional coordination, private sector participation and public awareness and cooperation.
- ii. MoHUA has formulated a National Transit Oriented Development (TOD) Policy in May 2017. The objective of this policy is to encourage compact mixed land use, which reduces the need for travel and improve access to public transport within walkable distance of transit stations. City specific strategies and mechanisms are to be framed by the respective Cities/ States for implementation of TOD.
- iii. In order to create an ecosystem for enhancement of metro rail network in the country, MoHUA has also formulated the Metro Rail Policy, 2017. As per the Metro Rail Policy, 2017 respective State Government/Union Territory (UT) is responsible for initiating metro rail projects. The Central Govt. considers financial assistance for such projects in cities or urban agglomerates, based on feasibility of the proposal and availability of resources, as and when posed by the concerned State Government/ UT Govt. policy bridges the much-needed gap for ascertaining and enhancing the feasibility of metro rail projects from economic, social and environmental perspective. In the Metro Rail Policy, 2017, it has been made mandatory for State Governments to include feeder system and multi modal integration in proposals of Metro Rail seeking Central assistance.
- iv. Under the Urban Transport Planning and Capacity Building Scheme, this Ministry provides financial assistance up to for taking up Traffic and Transportation Studies, feasibility studies, Comprehensive Mobility Plan (CMP), preparation of DPR for Mass Rapid Transit System (NIR'IS)/ Light Rail Transit System (LRTS), which are Initiated by the State (Governments/Union Territories/Urban Local Bodies (limited to 50% in case of MRTS).
- v. A project named "Efficient and Sustainable City Bus Service (ESCBS)" supported by the World Bank is under implementation in 4 Cities viz. Bhopal, Chandigarh, Jaipur and Mira Bhayandar. The objectives of the project are (i) strengthening capacity of urban bus service institutions through capacity building and training programmes and (ii) assisting cities in preparing and

implementing demonstration "City Bus Modernisation Projects" and providing technical assistance in ITS/ MIS, enhancing fuel efficiency, route and business planning.

vi. To assist the States/ Urban Local Bodies, also extended central assistance for creation Of Bus Rapid Transit System (BRTS) corridors. Presently, a total of about 450 km length is operational in 11 cities and about 200 km length in 2 other cities are under construction across the country.

vii. This Ministry has given financial assistance in development of Metro Rail projects in cities in the country. With the impetus of Government on proliferation of metro system in country, about 860 km of metro rail lines are operational in 20 cities and about 1,000 km (including 82 km Delhi-Meerut Regional Rapid Transit System (RRTS)) are under construction in various cities namely Delhi, Gurugram, Mumbai, Kolkata, Bangalore, Chennai, Kochi, Nagpur, Ahmedabad, Pune, Gandhinagar, Navi Mumbai, Patna, Surat, Agra, Kanpur, Meerut, Bhopal and Indore etc.

viii. The Government has taken initiative to provide faster connectivity with the satellite cities around Delhi falling within the jurisdiction of National Capital Region through construction of RRTS corridors. The first RRTS corridor of 82 km length between Delhi & Meerut at estimated cost of Rs.30,274 Crore is under implementation.

Under AMRUT Mission so far, 3,423 MLD sewage treatment capacity and 1,437 MLD recycle /reuse capacity has been developed. 99 lakh conventional streetlights have been replaced with energy efficient LEDs. In addition to water supply and sewerage, emphasis is given on developing infrastructure for Non-Motorised Transport (NMT). In non-motorised urban transport sector projects worth Rs. 626 crore have been completed, projects worth Rs. 384 crore are under implementation. Under Non-Motorised Transport, projects related to footpath/ walkways, sidewalks, foot over bridges facilities for non-motorised transport (such as bicycles) and multi-level parking's have been taken-up. A number of cities selected under the Smart Cities Mission are also implementing projects related to NMT and bike-sharing."

32. The Committee are appreciative of the fact that in pursuance of their recommendation to facilitate the growth of medium and small cities in such a way that ensures efficient and convenient Public Transport, several measures have been initiated by the MoHUA to promote multiple modes of transport in major cities such as (i) Formulation of National Urban Transport Policy in April 2006 so as to ensure accessible, safe, affordable, quick, comfortable, reliable and sustainable mobility for all, (ii) formulation of National Transit Oriented Development (NTOD) Policy in 2017 so as to encourage compact mixed land use which improve access to Public Transport within walkable distance of transit Station, (iii) formulation of Metro Rail Policy, 2017 to create an ecosystem for enhancement of Metro Rail network in the country (iv) A project named "Efficient and Sustainable City Bus Service (ESCBS) is under

implementation in four cities viz. Bhopal, Chandigarh, Jaipur and Mira Bhayandar, etc. The Committee would also like to be apprised of the present status of implementation of the aforesaid policies/programmes and outcome thereof including different RRTS corridors in connecting Delhi to Haryana, U.P. and Rajasthan. Besides the Committee are of the view that promoting a variety of some other transport modes, such as local trains and trams, would offer diverse option for commuters. The Committee further desire the Ministry to establish a robust monitoring and evaluation mechanism to assess the impact of the aforesaid measures and make necessary adjustments based on the evolving urban transport landscape in addition to giving additional incentives for the development and adoption of clean energy in public transport, such as electric buses and Solar Powered Transport.

Observation/Recommendation (Para No. 29)

33. In regard to construction of waste to compost and waste to energy along with proper segregation of work at source, the Committee had recommended as under:

“The Committee note that Swachh Bharat Mission-Urban (SBM-U) was launched on 2nd October 2014 with the objective of inter alia elimination of open defecation, modern and scientific municipal solid waste management and capacity augmentation for Urban Local Bodies to be achieved in five years, i.e. 2nd October 2019. It also targeted to achieve 100 percent door-to-door collection and scientific management of municipal solid waste. The Committee feel that solid waste is one of the major components of urban pollution. The Committee note that a number of policy initiatives have been taken to encourage processing of waste to compost and waste to energy, mandatory use of plastics in road construction, and mandatory use of recycled construction and demolition waste in all construction projects. The Committee feel that waste to compost and waste to energy are very important for creation of sustainable habitats. The Committee find that 145 compost plants are currently functional in the Country while 150 plants are under construction. After construction of these plants, the total compost production will increase from 13.13 lakh tonnes to 33 lakh tonnes. The Committee recommend that the underconstruction plants should be expeditiously constructed and more cities should be brought under waste to compost plan. The Committee note that 511 MW of power can be produced from municipal solid waste. Currently seven plants are operational and 53 are being constructed. The Committee recommend that the construction of waste to energy plants should be closely monitored so that these plants are constructed without any delay. The Committee are concerned that there is no proper segregation of wastes before they are dumped on the dumpsites. With the increasing electronic waste, hospital waste content among waste, there is serious danger of emission of poisonous gases and diseases spreading from the dumpsites. The Committee, therefore, recommend that there should be proper

segregation of waste at the source itself for which public awareness campaign is needed.”

34. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

1. “Under SBM-U, 2199 compost plants are currently functional in the country with the designed capacity of 71,682 TPD. Plants with the designed capacity of 30,681 TPD has been approved under SBNI-U 2.0 out of which 39 plants are under construction with 4,511 TPD designed capacity.
2. Currently, 9 Waste to Electricity plants are operational and 11 are under construction with a combined total designed capacity of 22,000 TPD and potential to generate 220 MW of power. Also, Action Plans for construction of Waste to Bio-CBG Plants of 5,515 TPD and MRF Facilities of capacity 32,432 TPD have been approved under SBM-IJ 2.0.
3. MoHUA is implementing the SBNI-U 2.0 fully in compliance with the notified Solid Waste Management Rules 2016, read together with other waste management rules, for which Additional Central Assistance is being provided to ULBs. The first step is segregation of waste at source for which ULBs are supported for carrying out regular IEC activities and Capacity Building activities for ULB staffs.”

35. The Committee observe that 39 waste to compost plants and waste to energy plants are under construction. The Committee desire to be apprised of the present position of these plants which need to be closely monitored to avoid delay in their construction as required.

Observation/Recommendation (Para No. 31)

36. Observing the increasing quantum of plastic wastes in cities, the Committee had recommended as under:

“As regards plastic waste, it is estimated that 15000 tonnes of plastic waste is generated every day in the Country. The plastic waste problem in urban areas has reached alarming proportions while the problem has also spread in rural areas, where, due to absence of any institution tasked for removing garbage, it is posing significant environmental and health challenges. As per data, 60 percent of all plastics in the Country is currently recycled, leaving 40 percent of 6000 tonnes/day being disposed in an unsafe manner. In urban as well as rural areas, there is no effective mechanism to segregate plastic waste, leading to compounding of problem as different plastic has different decomposition rates. In cities, there is another problem where disposable plates, glasses, etc. made of plastic/nondegradable materials are increasingly being used. Although plastic has been banned in several States, its

implementation has left much to be desired. Increasing use of plastic bottles and bags in vulnerable mountain ecosystems cause environmental degradation in areas which are already stressed. The Committee, therefore, recommend that institutional mechanism may be set up in all the States to monitor the use of plastics, besides ensuring its proper segregation, recycling and disposal. While banning the use of plastic carry bags, bottles etc., it is utmost important to find the biodegradable alternatives through R&D. Above all, adequate steps need to be taken to spread awareness among people about the importance of proper segregation of plastic waste and avoiding the use of disposable materials to the maximum extent possible.”

37. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

“In this regard, MoHUA has already taken steps to generate and enhance awareness among public and State/ municipal authorities to restrict single use plastic usage.

Under SBNI, the annual Swachh Survekshan (Cleanliness Survey) assesses the ULBs on their implementation of PWM Rules.

Similarly, the Garbage free city Protocol for Star Rating Certification in SWNI also has assessments for prohibition of SUPs.

As per notification issued on 12th August; Plastic Waste Management Rules, 2021, has incorporated ban on use of Single Use Plastic (SUP) bags and other items. 'This is an important component in upcoming Swachh Survekshan 2022 and Star Rating Protocol for Garbage Free Cities (GFC) to encourage cities to prevent use of single use plastic.

Detailed Action Plan for phasing out Single Use Plastic (SUP) has been made by MoHUA and ULBs are taking action accordingly. 2127 ULBs/Cities have notified the Plastic ban.

Innovative SUP replacement efforts such as Bartan bhandars, Jhola centres-Thyla Banks, plastic plog runs, food-for plastic waste programmes etc. are also part of Swachh Survekshan indicators and IEC activities.

SBNI-U 2.0 will be implemented with a vision of achieving "Garbage Free" status for all cities. Under the Sustainable Solid Waste Management, greater emphasis will be on source segregation, complete Solid waste management with 100% waste processing with intensified focus on phased reduction on Single Use Plastic.

In SBNI-U 2.0, funding will be provided for setting up of dry waste (plastic waste) processing facilities such as MRFs, waste to electricity etc. for plastic waste management in all statutory towns.”

38. As regards disposal/ban of plastic waste, the ATN reflects a proactive approach by the Ministry of Housing and Urban Affairs to address this issue.

Several steps are stated to have been taken by the Ministry to restrict single use plastic usage by involving ULBs. However, the problem still persists on large scale particularly in urban areas, where it has reached alarming proportions. Further, there is no mention of R&D and institutional mechanism so that remaining 40% of plastic waste is recycled/disposed in a safe manner. The Committee, therefore, urge that the robust institutional mechanism may be established to recycle/dispose the plastic waste generated in cities. Strict penalties may also be imposed for non-compliance of plastic waste management rules.

Observation/Recommendation (Para No. 40)

39. In their Recommendation contained in the original Report, the Committee had stated as under:

“As stated in Economic Survey (2017-18), according to a 2014 study by the Indian Agricultural Research Institute (IARI), in 2008-09 the country generated 620 million tonnes of crop residue, of which around 16 per cent was burnt on farms, of which 60 per cent was paddy, straw, whereas wheat accounted for just 22 percent. As per estimates, Punjab alone produces 19-20 million tonnes of paddy straw and about 20 million tonnes of wheat straw. About 85-90 percent of this paddy straw is burnt in the field, and, as the satellite images show, wheat straw is also increasingly being burnt in recent years. As per IARI report, main reasons for burning crop residues in field include unavailability of labour, high cost in removing the residues and use of combines in rice-wheat cropping system especially in the Indo-Gangetic plains (IGP). The usage of combine harvesting machines is another reason because it only reaps the grains, leaving stalks or stubble of around 40 cm. Removing the stubble manually or by using specialized machines to do the job is costly. For every 0.4 ha of wheat crop, the cost of renting a combine harvester is just ₹800. Once the machine has harvested, the cost of getting the stubble removed is ₹3,500/ha. So the value of fodder is discounted because it is more economic for the farmers to just burn by using match box and clear the fields.

The Committee understand that crop residue burning has been banned by the National Green Tribunal (NGT) in States of Rajasthan, Uttar Pradesh, Haryana and Punjab parts of which constitute the National Capital Region, and in 2014, the Union Government had released the National Policy for Management of Crop Residue, which NGT directed the States to implement. Besides crop residue burning is punishable under the Air (Prevention and Control of Pollution) Act, 1981. In spite of all these provisions, the problem of crop residue burning persists. Burning of crop residues leads to release of soot particles and smoke in the atmosphere causing human and animal health

problems. It also leads to emission of greenhouse gases, namely carbon dioxide, carbon monoxide, methane and nitrous oxide, causing global warming. These gases are of major concern for their global impact and also their local impact in causing rise in suspended particulate matter (SPM) in the nearby areas leading to health hazard. While appreciating banning burning of crop residue in States constituting NCR by NGT, the Committee observe that there is a need for consultation with the farmers and understanding their problems. The farmers should be incentivized for use of specialized machines which cut the crop residue from the bottom or removing the stubble manually without resorting to crop residue burning. Besides, technological solutions are to be found under a time bound programme and Agriculture Engineering Departments should be incentivized to provide early cost effective alternatives for burning of crop residue.”

40. In their Action Taken Note, the Ministry of Environment, Forest and Climate Change have submitted as under:

- Paddy stubble burning is mainly practiced in Indo-Gangetic plains of the States of Punjab, Haryana and Uttar Pradesh to clear the fields for Rabi crop sowing. The farmers are resorting to paddy straw burning because of very short time window between the harvesting of paddy crop and the sowing of next crop.
- To address air pollution and to subsidize machinery required for in-situ management of crop residue, a Central Sector Scheme on ‘Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi’ for the period from 2018-19 to 2019-20 is being implemented. During the year 2018-19 and 2019-20, the funds as under have been released under the aforementioned scheme:

State/Agency	Funds released (Rs. in Crores)			
	2018-19	2019-20	2020-21	Total
Punjab	269.38	273.80	272.50	815.68
Haryana	137.84	192.06	170.00	499.9
Uttar Pradesh	148.60	105.28	120.20	374.08
NCT of Delhi	0	4.52	0.00	4.52
ICAR and other Central Agencies	28.51	18.48	8.00	54.99
Total	584.33	594.14	570.70	1749.17

Out of these funds, during last 3 years, the State Governments have established more than 30900 Custom Hiring Centres of crop residue management machinery to provide machines & equipment to the small and

marginal farmers on rental basis. A total of more than 1.58 lakh crop residue management machines have been supplied to these established CHCs and the farmers of these four States for management of crop residue.

The State Governments and Krishi Vigyan Kendras (KVKs) have also undertaken Information, Education and Communication (IEC) activities on a massive scale for creating awareness among farmers.

In 2020 season, through the concentrated efforts of this scheme, a reduction in number of paddy residue burning events in comparison to 2016 in the State of Haryana, Uttar Pradesh and Punjab were reported as 64%, 52% and 23% respectively.

- Under National Food Security Mission (NFSM) programme all the NFSM implementing states have been given flexibility to take up the farm machineries/tools at the subsidized rates as per the guidelines of Sub-Mission on Agricultural Mechanization. Awareness is also created amongst the farmers through training to avoid stubble burning.
- In Punjab and Haryana, emphasis has been on zero till planting of wheat in rice residues with happy seeder as alternative to crop residue burning. The efforts of NICRA led to making of 26 villages as residue burning free villages adjoining the NICRA villages in the states of Punjab and Haryana.

41. The Committee are appreciative of the fact that National Innovations in Climate Resilient Agriculture (NICRA) led to making of 26 villages as residue burning free villages adjoining the NICRA villages in the States of Punjab and Haryana. The Committee desire that these steps be continued on a large scale so as to eliminate the issue of crop burning in future.

The Committee further find that there is no mention about incentives to Agriculture Engineering Departments for providing early cost effective alternatives for burning of crop residue which is major reason for rise in air pollution. The Committee, therefore, emphasize the Ministry to take urgent steps in regard to allocating resources to Agriculture Engineering Departments to develop and implement time bound programmes for cost-effective alternatives to crop residue burning.

CHAPTER – II

Observations/Recommendations which have been accepted by the Government

Recommendations - Para No. 2

The Committee find that the Government is implementing the National Action Plan on Climate Change (NAPCC), which includes eight national Missions covering solar energy, enhanced energy efficiency, agriculture, water, sustainable habitat, Green India, Himalayan ecosystem and Strategic Knowledge for Climate Change, apart from various other initiatives. Each Mission is administered by a Ministry/Department which is responsible for its implementation and lays down the budget provisions and actionable priorities for it. The broad policy initiatives of the Central Government are supplemented by actions at the sub-national levels by the State Governments/UTs. The National Bank for Agriculture and Rural Development (NABARD) has been appointed as National Implementing Entity (NIE) responsible for implementation of adaptation projects under the National Adaptation Fund for Climate Change (NAFCC). Besides, research and scientific institutions provide scientific inputs for framing various policies on climate change.

Some of the experts who deposed before the Committee raised the issue of fragmented approach and lack of coordination amongst various Ministries/Stakeholders. The Committee find that the activities covered by various Missions are inter-related and the developments in a Mission in an area has bearing on the other Missions. NAPCC being a multi-tiered structure with various Ministries/Departments administering various Missions supplemented by actions at the States/UTs level, the objectives of the action plan for climate change can only be achieved through collective action and partnerships for which integrated approach and coordination amongst various Ministries, State Government/Union Territories and all other implementing agencies is utmost necessary. The Ministry of Environment and Forests & Climate Change (MoEF&CC) being the main coordinating Ministry has to take the desired initiatives. For inter-Ministerial coordination, the Committee recommend for setting up of an inter-Ministerial entity to quarterly review the performance of each implementing agency. Besides, MoEF&CC should have a public information portal displaying up-to-date data/information about mandate, targets as well as achievements of each of the Missions under specific heads so as to enable the stakeholders to track what is happening in different areas concerning climate change. Besides, the information about the adverse effects of climate change should be displayed in the portal so as to sensitize and involve the public at large on this important issue. The Committee would also like to recommend that six monthly report of each Ministry/Department administering the specific Missions) giving the status of implementation on various parameters should be laid in Parliament.”

Action Taken by the Ministry

- “The "India Climate Change Knowledge Portal" was launched on 27 November

2020. This web portal provides information on the different climate initiatives taken by various Line Ministries enabling users to access updated status on these initiatives.

- The eight major components included in the knowledge portal are:

1. India's Climate Profile
2. National Policy Framework
3. India's NDC goals
4. Adaptation Actions
5. Mitigation Actions
6. Bilateral and Multilateral Cooperation
7. International Climate Negotiations
8. Reports & Publications

- The Web Portal can be accessed at: <https://www.cckpindia.nic.in/>

- Meetings of the Executive Committee on Climate Change (ECCC) have been regularly held (Seventh Meeting of the ECCC was held on 3 February, 2021 and Eighth Meeting of the ECCC was held on 1st September, 2021), chaired by Principal Secretary to the Prime Minister.”

Recommendations - Para No. 3

The Committee note from the information furnished by the Government that 32 States and Union Territories have so far put in place the State Action Plans on Climate Change attempting to mainstream climate change concerns in their planning process.

The Committee would like to be apprised about the implementation status of the State Action Plans at the ground level. About the remaining States where State Action Plans have not been formulated, the Committee would like to be apprised about the specific reasons for delay in formulating State Action Plans. These States should be pursued for putting in place State Action Plans expeditiously.”

Action Taken by the Ministry

Preparation of State Action Plans on Climate Change (SAPCCs) has been reviewed by the Ministry of Environment, Forest & Climate Change (MoEFCC). Guidelines for SAPCC revision have been issued, along with funding support @ Rs 20 lakh per

State/UT. Tamil Nadu, Odisha, Himachal Pradesh, Madhya Pradesh and Gujarat have submitted revised SAPCCs. SAPCC Regional Workshops are being convened for accelerating the work.

Recommendations - Para No. 4

National Coastal Mission

The Committee during the course of deliberations have been apprised by a representative of the Ministry of Earth Sciences that the proposal for setting up a National Coastal Mission has been prepared jointly with MoEF&CC and is at the advanced stage of approval. With the high Shoreline Vulnerability along Indian Coast as mentioned in the para above, the Committee strongly recommend for setting up of a new Mission i.e. National Coastal Mission so as to give focused attention to climate change issues related to coastal areas. The Committee would also like to be apprised as to whether the Government propose to set up some more new Missions in areas like health, waste-to-energy.

Action Taken by the Ministry

- (a) National Coastal Mission (NCM) is an ongoing sub-scheme under National Coastal Management Programme of Ministry of Environment, Forest & Climate Change (MOEFCC) with a budgetary outlay of Rs. 87.5 cr spread over 2021-2026.
- (b) A proposal for enhancing the scope of on-going National Coastal Mission to promote and give impetus to development of climate resilient blue economy development without compromising the safeguard of coastal ecosystem and marine environment has been submitted to Department of Expenditure for consideration.
- (c) This Ministry agrees with the statement of representative of Ministry of Earth Sciences in respect of preparation of proposal to upscale National Coastal Mission jointly with all line-ministries including Ministry of Earth Science.
- (d) NAPCC encompasses eight core missions in the specific areas of Solar Energy, Enhanced Energy Efficiency, Sustainable Habitat, Water, Sustaining the Himalayan Ecosystem, Strategic Knowledge for Climate Change, Green India, and Sustainable Agriculture, which are anchored by Ministry of New and Renewable Energy; Bureau of Energy Efficiency (Ministry of Power), Ministry of Housing and Urban Affairs, Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, Department of Science and Technology, Ministry of Environment, Forests & Climate Change, and Ministry of Agriculture and Farmer Welfare, respectively. Three new national missions on (i) Health & Climate Change, (ii) Coastal, and (iii) Sustainable Transport have been approved by the Executive Committee on Climate Change (ECCC). National Mission on Health & Climate Change has been finalized and

approved by the ECCC, the mission documents on Coastal and Sustainable Transport are being worked upon and will be finalized at the earliest. MoEFCC is following up on the same for completion of the exercise.

Recommendation - Para No. 5

Clean Environment Fund and National Adaptation Fund - Financial Achievement

The Committee note that a corpus called National Clean Energy Fund (NCEF), now known as Clean Environment Fund, was constituted in the Financial Year 2010-11 out of the cess on coal produced/imported (“polluter pays” principle) for the purposes of financing and promoting clean energy initiatives, funding research in the area of clean energy or for any other purpose relating thereto. Subsequently, the scope of the fund was expanded to include clean environment initiatives also. An Inter-Ministerial Group (IMG) chaired by the Finance Secretary approves the projects/schemes eligible for financing under the NCEF. These projects include innovative schemes like Green Energy Corridor for boosting up the transmission sector, Namami Gange, Green India Mission, National Solar Mission (NSM)’s installation of solar photovoltaic (SPV) lights and small capacity lights, installation of SPV water pumping systems, SPV Power Plants, Grid-Connected Rooftop SPV Power Plants, pilot project to assess wind power potential, etc. The Committee note that from 2010-11 to 2017-18, a total of ₹86,440.21 crore was collected as coal cess out of which only ₹20,942.29 crore could be transferred to the NCEF. During this period, total amount financed from NCEF for projects was ₹15,911.49 crore. The Committee further note that monies from the Fund are allocated to the Ministries of Environment, Forest and Climate Change, New and Renewable Energy and Water Resources, River Development and Ganga Rejuvenation. The Committee are concerned to note that in spite of substantial revenue being generated out of coal cess, the same is not being allocated to the NCEF and even the low allocation is not being utilised, which indicates poor planning and execution on the part of implementing agencies. The Committee also understand that the coal cess, along with some other cesses, have been made a part of GST compensation Fund which would be utilised to compensate the States for five years for potential losses on account of GST implementation. After five years, any amount left would be shared on 50 percent basis between the Centre and States. The Committee deplore the way such an important issue pertaining to the existence of the Earth, the only known habitable planet in the Universe, is being handled and strongly recommend for adequate financial resources to NCEF, besides putting in place effective monitoring mechanisms to ensure full utilization of allocated outlay. The Committee also recommend that shortfall on account of the Coal cess being made a part of GST Compensation Fund should be compensated to the NCEEF by the Central Government.

Action Taken by the Ministry

Schemes which were previously funded from National Clean Energy Fund are now funded from the gross budgetary support.

Recommendation - Para No. 6

The Committee note that the National Adaptation Fund for Climate Change (NAFCC) was set up in 2015-16 with a budget provision of ₹350 crore for the year 2015-16 and 2016-17 and an estimated requirement of ₹181.5 crore for the financial year 2017-18. The objective of the Fund is to assist States and Union Territories particularly vulnerable to the adverse effects of climate change in meeting the cost of adaptation. NABARD is the implementing agency for this Fund. Under the Fund, ₹118.37 crore were released for projects in 2015-16 while ₹93.93 crore were released in the year 2016-17. The Committee observe that against the allocation of ₹350 crore for two years, only ₹212.3 crore i.e. around 60 percent has been released which indicates slow and tardy pace of implementation of the projects. While expressing concern over lack of seriousness towards implementation of projects funded by NABARD, the Committee recommend to review the implementation of the projects being undertaken in various States/UTs. The details of the progress of these projects being implemented in various States/UTs alongwith the initiatives taken/proposed to be taken for their effective implementation should be furnished to the Committee within three months of the presentation of the Report.

Action Taken by the Ministry

- The Government is regularly arranging review meetings to examine the status of the projects being implemented. The present status of NAFCC project is enclosed at Annexure – I.
- The “India Climate Change Knowledge Portal” was launched on 27th November 2020 as the single point information resource and monitoring. Frequent review through virtual regional meetings and field level monitoring (at the State Government level) is being undertaken.

Recommendation - Para No. 10

The Committee note that one of the objectives of the Mission is to take a global leadership role in manufacturing of cutting edge solar technologies with a target of 4-5 GW equivalent of installed capacity by 2020, including setting up of dedicated manufacturing capacities for poly silicon material to annually make about 2 GW capacity of solar cells. However, given the existing position of solar-related manufacturing capacity within the Country, it is likely to remain a pipedream, as the Ministry itself has acknowledged that the country currently does not have enough capacity for solar cells and modules

to cover full demand, and both imported and indigenous solar equipments and components are being utilized for achieving the targets. In this context, a representative of the Ministry apprised the Committee during the course of oral evidence that in solar industry, Chinese solar cells and modules are being used in the Country in high volumes. The Committee may also like to refer to the 22 nd Report (2017-18) of the Committee on Public Undertakings, wherein a representative of IREDA has been stated to have apprised that Committee that 85 percent of the solar panels are still being imported from China as they are cheaper and technologically advanced.

The Committee are concerned to note such high dependence on imported solar equipments which is not in the interest of the Country and is detrimental to the development of indigenous industries. The Committee strongly feel that there is an urgent need to work on various fronts, foremost being R&D for which massive investment is required. The Ministry of Science and Technology has to work in a mission mode to encourage R&D in the sector at research centres particularly the premier technological institutions like IITs in collaboration with industry for technological improvement as well as to develop affordable and innovative solutions so as to bring down the costs, improve quality of solar power components including solar panels, solar cells and batteries. Besides encouraging local manufacturing of raw material, attracting private sector particularly the small scale industries, availability of skilled manpower are the other areas for which the Government has to take urgent and immediate initiatives. The Government should also look at the option of increasing duties on Chinese solar products without attracting the restrictions laid down under WTO guidelines. Research and further improving the quality of lithium batteries or batteries based on alternate materials should be incentivised.

Action Taken by the Ministry

The installed manufacturing capacity of solar PV modules in the country, as on 30.06.2023, as per the manufacturing capacities enlisted in Ministry of New and Renewable Energy (MNRE) Approved List of Models and Manufacturers (ALMM) for solar PV modules and the applications received for enlistment in ALMM, is around 27 GW per annum.

The installed manufacturing capacity of solar PV cells in the country, as on 30.06.2023, as per industry sources, is about 6 GW per annum.

Further, the Government of India is implementing the Production Linked Incentive (PLI) Scheme for National Programme on High Efficiency Solar PV Modules, for achieving manufacturing capacity of Giga Watt (GW) scale in High Efficiency Solar PV modules. Under this Scheme, the Government of India will give Production Linked Incentive (PLI) to the selected solar PV module manufacturers for five years

post commissioning, on manufacture and sale of High Efficiency Solar PY modules. The Scheme is being implemented in two tranches as follows:

- (a) Under Tranche-I of PLI Scheme for High Efficiency Solar PY Modules, 8.737 GW of fully integrated solar PY module manufacturing capacity is under implementation and is scheduled for completion in November/ December 2024.
- (b) Under Tranche-II of PLI Scheme for High Efficiency Solar PY Modules, 39.6 GW of fully/partially integrated solar PY module manufacturing capacity is under implementation and is scheduled for completion by October 2024 to April 2026, depending upon the extent of integration proposed.

Thus, it is expected that upon commissioning of the solar PY manufacturing capacities under PLI Scheme for High Efficiency Solar PY Modules, India will have installed solar PY module manufacturing capacity of more than 75 GW per annum which would not only be sufficient to cater to domestic demand but would also cater to global demand through exports.

Regarding imposition of duties, it is submitted that with effect from 1st April, 2022, the Government has imposed Basic Customs Duty (BCD) on import of solar PY modules (HS Code 85414300)@ 40% and on import of solar PY cells (HS Code 85414200)@ 25%.

Regarding import of solar **PY** modules into India, it is submitted that as per the data on the website pertaining to export import data bank of Department of Commerce:

- (a) In 2021-22, when the HS code for solar PY modules was 85414012, the value of solar PY modules imported into India was around 3363 million USD, out of which imports of around 3075 million USD (~91%) were from China.
- (b) In 2022-23, when the HS code for solar PY modules was 85414300, the value of solar PY modules imported into India reduced to around 944 million USD, out of which imports of around 875 million USD (~93%) were from China.

To reduce imports in solar PY sector, the Government has taken several steps, which, inter-alia, include:

- PLI Scheme: Implementation of PLI Scheme for High Efficiency Solar PY Modules, as detailed above.
- BCD: Imposition of Basic Customs Duty as detailed above
- Domestic Content Requirement (DCR): Under some of the current schemes of the Ministry of New & Renewable Energy (MNRE), namely CPSU Scheme Phase-II, and Grid-connected Rooftop Solar Programme Phase-II and specified components of PM- KUSUM Scheme, wherein government subsidy

is given, it has been mandated to source solar PV cells and modules from domestic sources, as per extant Guidelines.

- Discontinuation of Concessional Customs Duty Certificates (CCDCs): Government has withdrawn the benefit of concessional customs duty on the items imported for initial setting up of solar power projects with effect from 02.02.2021.

Recommendation - Para No. 11

National Mission on Enhanced Energy Efficiency

The Committee note that the National Mission on Enhanced Energy Efficiency (NMEEE), one of the eight missions under NAPCC, was launched in the year 2010 with an approved outlay of ₹235.50 crore during XI plan and ₹775 crore during XII plan. The aim of the NMEEE is to strengthen the market for energy efficiency by creating conducive regulatory and policy regime and envisages fostering innovative and sustainable business models to the energy efficiency sector. The Committee also note that between the period 2010-11 and 2016-17, ₹914.13 crore was allocated as BE while RE during the same period was only ₹258.84 crore. The Committee are surprised that even this drastically reduced amount could not be spent under the mission and actual expenditure during the same period was ₹207.82 crore, about 20 percent less compared to RE. The Committee have been informed that one of the reasons for less financial allocation under RE is delay in approval of rules for Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) and Venture Capital Fund for Energy Efficiency (VCFEE) and also because XII plan scheme was approved only in 2014-15. The Committee feel that mismatch of such magnitude in financial allocations for such an important mission does not reflect well on the functioning of Ministry. The Committee, therefore, recommend that the Ministry should undertake due diligence in preparation of financial estimates and ensure that the funds are utilised for the schemes for which they have been allocated.

Action Taken by the Ministry

- The recommendation is noted for compliance.
- However, after the end of the XII th plan, approval for continuation of the mission was received for the period 2017-2020 with an approved outlay of Rs. 430 Crores.
- For the period beyond 2020, a SFC proposal for the period 2021-22 to 2025-26 with a financial outlay of Rs. 167 Crores has been submitted to Ministry of Power and is under circulation to the Appraising Agencies. The outlay has been further reduced as the financial initiatives namely PRGFEE and VCFEE have been short closed.

Recommendation - Para No. 12

With regard to the pace of allocations of outlay, the Committee find reducing allocations since 2014-15 till 2017-18, whereby the allocations at BE to the tune of ₹283 crore during 2013-14 were gradually reduced to ₹40.90 crore during 2017-18. The allocations during 2018-19 then suddenly surged to ₹182.55 crore. The Committee would like to be apprised of fluctuation of this scale in the Budgetary allocation of these years. The corresponding physical targets and achievements under NMEEE during this period may also be furnished to the Committee at the action taken stage.

Action Taken by the Ministry

- During the Financial years 2012-13 and 2013-14, fund was drawn by Bureau of Energy Efficiency (BEE) for the financing initiatives under National Mission for Enhanced Energy Efficiency (NMEEE) namely Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) and Venture Capital Fund for Energy Efficiency (VCFEE). However, fund was not drawn under the aforesaid initiatives for the financial years 2014-15, 2015-16 and 2016-17 due to which the financial allocations were reduced.
- Regarding allocation for the FY 2017-18, 2018-19 and 2019-20, it may be noted that the scheme was under process for approval for continuation. The continuation for the scheme was received in May 2018 after which funds were drawn by BEE for PAT and Energy Efficiency Financing Platform (EEFP). However, funds were not drawn for PRGFEE and VCFEE as Ministry of Power had put a condition in NMEEE sanction letter that the fresh tranches for PRGFEE / VCFEE may be released only after utilization of 80% of PRGFEE/VCFEE corpus fund.
- Physical targets and achievements are as under:

S.No.	Year	Performance/ target fixed	Performance/target achieved
1	2014 - 15	<ul style="list-style-type: none"> • Preparatory Activities for notification of Perform, Achieve and Trade(PAT)Cycle—II. • Deepening study 	<ul style="list-style-type: none"> • Collection of baseline data from 621 Designated Consumers (DCs) • Deepening study was carried out by BEE for including new DCs under PAT cycle —11 from the existing eight sectors. Under the deepening study, new 89 DCs were identified from the existing eight sectors of PAT Cycle -I.

		<ul style="list-style-type: none"> Widening study 	<ul style="list-style-type: none"> Widening study was carried out in order to include new sectors in addition to the 8 existing sectors under PAT scheme. Three new sectors Railways, Refineries, and Electricity DISCOMs were notified
			<p>And 84 DCs additionally from these new sectors were notified.</p> <ul style="list-style-type: none"> Regional workshops were conducted for the capacity building of the DCs/ SDAs/AEAs for hand-holding them to understand the various pro-forma and other related documents.
2	2015-16		<ul style="list-style-type: none"> Monitoring and Verification was carried out by Accredited Energy Auditors (AEAs) for DCs of PAT Cycle – 1.
			<ul style="list-style-type: none"> The reports of all the DCs were reviewed by BEE.
			<ul style="list-style-type: none"> The data of 427 DCs were scrutinized by BEE for assessment of the achievement.
			<ul style="list-style-type: none"> The achievement after the analysis of data submitted by DCs comes out to be 8.67 MTOE against a given target of 6.686 MTOE for 478 DCs.
			<ul style="list-style-type: none"> Baseline verification audit was carried out for identification of new DCs under PAT scheme

		<ul style="list-style-type: none"> • BEE developed an online portal called PAT Net portal and D-CRM portal for online trading of ESCerts
		<ul style="list-style-type: none"> • Eol for empanelment of Participating Financial Institutions under Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) was floated in October 2015
		<ul style="list-style-type: none"> • Training manuals for energy efficiency financing in India and Success stories for Energy efficiency
		<p>Projects financed in India was</p> <p>launched. Normalization documents for all the sectors under PAT cycle –I were launched.</p> <ul style="list-style-type: none"> • Regional workshops were conducted for the capacity building of the DCs / SDAs / AEAs for hand-holding them to understand the various pro-forma and other related documents
3	2016 - 17	<ul style="list-style-type: none"> • PATCycle—II notified vide S.O. 1264 (E) on 31st March, 2016.
		<ul style="list-style-type: none"> • Regional Workshops were held at 5 locations across the country. • The pro-forma/normalization documents are being prepared by BEE for the three new sectors notified in PAT Cycle – II.
		<ul style="list-style-type: none"> • The amendment to the Energy Conservation Rules, 2012 were made and they were notified on 30th March, 2016.

		<ul style="list-style-type: none"> • The regulations for trading of ESCerts were notified in the year 2016. The procedure for trading of ESCerts as well as fee for trading of ESCerts were approved by CERC in February-March 2017.
		<ul style="list-style-type: none"> • The Rules for Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE) under Framework for Energy Efficient Economic Development (FEEED) were notified in 26th May 2016
		<ul style="list-style-type: none"> • The Rules for Venture Capital Fund for Energy Efficiency (VCFEE) under Framework for Energy Efficient Economic Development (FEEED) were notified on in March 2017
		<ul style="list-style-type: none"> • The Operations Manual for PRGFEE was launched in October 2016
		<ul style="list-style-type: none"> • Market assessment for
		<p>PRGFEE and VCFEE were launched</p> <ul style="list-style-type: none"> • Baseline verification audit was carried out for identification of new DCs under PAT scheme
4	2017 - 18	<ul style="list-style-type: none"> • PAT cycle —III was launched in the year 2017 where 116 DCs were notified from the existing sectors of PAT scheme.

		<ul style="list-style-type: none"> • PAT cycle – IV was notified in March 2018 in which 109 DCs from existing sectors and two new sectors of PAT i.e. Petrochemicals and Commercial Buildings (Hotels) were notified.
		<ul style="list-style-type: none"> • The trading of ESCerts was launched by BEE, MoP in September 2017. A total volume of 12.98 lakhs of ESCerts were traded in 17 trading sessions leading to a business of about Rs. 100 Crores.
		<ul style="list-style-type: none"> • Training workshops for individuals from banks/NBFCsonEE financing was launched.
		<ul style="list-style-type: none"> • Guidelines for financing EE projects in India were launched. Achievements under PAT scheme were also launched in September 2017.
		<ul style="list-style-type: none"> • Regional workshops were conducted for the capacity building of the DCs / SDAs / AEAs for hand- holding them to understand the various pro-forma and other related documents.
		<ul style="list-style-type: none"> • Baseline verification audit was carried out for identification of new DCs under PAT scheme
5	2018 - 19	<ul style="list-style-type: none"> • Baseline verification audit was carried out for identification of new DCs under PAT scheme • Check-verification of 36DCsof PAT

		cycle—I was carried out by BEE
		<ul style="list-style-type: none"> • The National Mission for Enhanced Energy Efficiency (NMEEE) was revised by BEE as "Roadmap of Sustainable and Holistic Approach to National Energy Efficiency "(ROSHANEE)" in order to enhance the existing programme and take into account all the existing initiatives as well as new initiatives which could help in fulfilling the commitments made under the NUCs on a mission mode. Subsequently, a stakeholder consultation meeting was also convened in August 2018 for further discussion on the ROSHANEE document.
		<ul style="list-style-type: none"> • Under this, over 650 officials from 72 banks / NBFCs were trained on EE financing. Since 2015-2019, 28 workshops have been successfully conducted under Energy Efficiency Financing Platform (EEFP)
		<ul style="list-style-type: none"> • The outcome and evaluation study of PAT cycle —I was released by the Hon'ble Minister of Power in a workshop in September 2018 where the CEOs of the units under PAT cycle —I, heads of the State Designated Agencies and other stakeholders had participated.
		<ul style="list-style-type: none"> • In order to build the capacity of DCs, SDAs and AEAs, around 12 regional workshops were conducted by BEE

		<ul style="list-style-type: none"> • In order to build the capacity of AEAs, BEE has conducted 2 training workshops for fertilizer and cement sector.
		<ul style="list-style-type: none"> • The Request for Proposal (RfP) for conducting feasibility study for inclusion of new sectors under PAT scheme was released by BEE. • The enforcement manual for carrying
		<p>Out adjudication under PAT scheme has been developed by BEE.</p> <ul style="list-style-type: none"> • PAT Cycle —V has commenced from April 2019 in which 110 DCs from the existing sectors of PAT scheme have been notified. • An amendment to Energy Conservation Rules (PAT Rules) has been notified on 26th April 2018 vide G.S.R 409(E). • 10 MoUs were signed by BEE with PAT sectors for adoption of ISO 50001. • Identification 10 no. of Thermal Power Plants for mapping exercise has been completed. • Revision in PAT targets for DISCOM sector under PAT scheme was notified vide S.O. 5045 (E) in October 2018. • Pro-forma and Monitoring & Verification Guidelines for Railway and Refinery sector under PAT were developed in February 2019

6	2019 - 20	<ul style="list-style-type: none"> • Baseline verification audit was carried out for identification of new DCs under PAT scheme. Baseline verification was carried out for about 230 DCs. • The first phase of Check-verification of 36 DCs of PAT cycle – II has been carried out by BEE. Second phase of check-verification of DCs of PAT cycle – II is under process. • The National Mission for Enhanced Energy Efficiency (NMEEE) was revised by BEE as " Roadmap of Sustainable and Holistic Approach to National Energy Efficiency (ROSHANEE)" in order to enhance the existing programme and take into account all the existing initiatives as well as new initiatives which could help in fulfilling the commitments
		<p>made under the NDCs on a mission mode. ROSHANEE document was released on 14th May 2019 by Secretary (MoP).</p>
		<ul style="list-style-type: none"> • The outcome and evaluation study of PAT cycle – II has been carried out by BEE. The same is under publication. BEE had also released the revised Monitoring & Verification guidelines.
		<ul style="list-style-type: none"> • In order to build the capacity of DCs, SDAs and AEAs, around 30 regional workshops and webinars were conducted by BEE

		<ul style="list-style-type: none"> • In order to build the capacity of AEAs, BEE has conducted 2 training workshops for fertilizer and cement sector.
		<ul style="list-style-type: none"> • Feasibility study for five sectors namely Chemicals, Glass, Sugar, Ceramics, Non-Ferrous Metals (Zinc and Copper) has been completed by BEE.
		<ul style="list-style-type: none"> • PAT Cycle – VI has commenced from April 2020 in which 135 DCs have been notified with an overall energy saving target of 1.277 MTOE
		<ul style="list-style-type: none"> • Monitoring & Verification of DCs of PAT Cycle – II has been completed by BEE for 621 DCs
		<ul style="list-style-type: none"> • Out of the 10 industries that were selected for implementation of ISO 50001, implementation in 9 industries were completed.
		<ul style="list-style-type: none"> • For energy mapping of Thermal Power Plants, 10 industries were selected. The same has been completed for the selected 10 DCs.
		<ul style="list-style-type: none"> • Multimedia tutorials for demonstration of Energy Management Systems for PAT
		Sectors have been developed by BEE.

		<ul style="list-style-type: none"> • For energy mapping of Thermal Power Plants, 39 industries were selected. Draft Reports were received from 37 industries out of the selected 39 industries.
		<ul style="list-style-type: none"> • Impact assessment study for the initiatives under NMEEE has been completed by BEE. • Verification of performance of DCs under PAT cycle – II resulted into energy savings of about 13.28MTOE.
		<ul style="list-style-type: none"> • Meeting conducted with ECCJ and the action plan for dissemination of EC Guideline and EM Manual were finalized
7	2020 - 21	<ul style="list-style-type: none"> • Baseline verification audit was carried out for identification of new DCs under PAT scheme. Baseline verification was carried out for about 260 DCs. Further, Baseline verifications are being carried for 60 DCs of DISCOM sector and 28 DCs of railway sector.
		<ul style="list-style-type: none"> • PAT cycle – VI was notified vide Gazette Notification S.O. 1254 (E) dated 13th April, 2020. Under PAT cycle —VI, 117 new DCs and 18 old DCs have been given targets to reduce their specific energy consumptions.
		<ul style="list-style-type: none"> • The first phase of Check-verification of 36 DCs of PAT cycle has been carried out by BEE. In the second phase, check – verification has been carried out for 28 DCs of PAT cycle – II. The third phase of the same for 1 DC is under

		<p>process.</p> <ul style="list-style-type: none"> Monitoring & Verification of DCs of PAT cycle —III has been completed by BEE. Finalization of energy
		<p>savings achieved from the implementation of PAT cycle-III is under process.</p>
		<ul style="list-style-type: none"> BEE has undertaken potential assessment study in sectors namely Cement, Pulp & Paper, Textile, Chlor Alkali, Aluminium and Sponge Iron. The aim of such study was identification of further potential that the Designated Consumers possess to improve energy efficiency where the possible measures for energy efficiency have already been undertaken in the previous PAT cycles.
		<ul style="list-style-type: none"> BEE had initiated a study in order to determine the targets based on India's Nationally Determined Contributions (NDCs) in industrial sectors and other establishments till 2030. The report is under approval of the Competent Authority of BEE.
		<ul style="list-style-type: none"> For finalization of targets for PAT cycle —VII, Technical Committee meetings for sectors namely Chlor Alkali, Fertilizer, DISCOMs, Iron & Steel, Cement, Textile and Railways under PAT scheme were conducted.

		<ul style="list-style-type: none"> • Notification of PAT cycle —VII for the period 2021-22 to 2023-24 is under process. It is envisaged that under PAT cycle – VII, 509 Designated Consumers from sectors namely Thermal Power Plant, Iron & Steel, Textile, Cement, Pulp & Paper, Railways, Chlor Alkali, Aluminium and DISCOM will be notified with an overall reduction target of 2.81% in all the above sectors except DISCOM. The overall reduction target for DISCOM sector is envisaged to be about 6% upon implementation of PAT cycle — VII
		<ul style="list-style-type: none"> • The Feasibility study (Phase-11) to estimate the distribution of energy consumption and to create a
		<p>threshold level of energy consumption in another ten nos. of energy intensive sectors and other establishment namely "Port Trust, Dairy, Transport, Edible Oils, Breweries & Distillery, Beverages, Food Processing, Cold Storage, Refractories & Heavy Engineering Manufacturing" is under progress</p> <ul style="list-style-type: none"> • BEE has also initiated a study in petrochemical sector. The aim of such study is to identify the other petrochemical product to be include in PAT scheme • The outcome and evaluation study of PAT cycle —II was released in on1st March 2021 by the Hon'ble Minister. User manuals for key stakeholders under PAT scheme have been

			<p>developed and released on 1st March 2021 by the Hon'ble Minister</p> <ul style="list-style-type: none"> • In order to build the capacity of DCs, SDAs and AEAs and other stakeholders, around 20 workshops and webinars / training programmes / meetings were conducted by BEE • Implementation of ISO 50001 has been completed in 10 selected DCs under PAT scheme. • Capacity building programmes have been conducted by BEE for Designated Consumers already notified under PAT schemes for Adoption of IT, IoT (Internet of Things), smart equipment and industry 4.0 applications. • As required under the Energy Conservation Rules, 2012 (PAT Rules) to notify the price of one metric tonne of oil equivalent. Bureau of Energy Efficiency vide notification G.S.R.779 (E) dated 14th December 2020 has notified that the Value of per metric tonne of oil
		<ul style="list-style-type: none"> • Notification of amendment for reducing threshold and inclusion of new DCs 	<p>equivalent of energy consumed as eighteen thousand four hundred and two rupees only for the year 2018-19.</p> <ul style="list-style-type: none"> • Notification issued in June 2020 for inclusion of 2 new Railway Production Units under PAT and also reduced threshold for workshops of Indian Railways to having total annual energy consumption of 750 MTOE and above.

		<ul style="list-style-type: none"> Notification for regulations for Energy Audit and accounting in DISCOMs. <p><u>Trading of ESCerts</u></p> <ul style="list-style-type: none"> Procedure for trading of Energy Saving Certificates (ESCerts) 	<p>Notification was issued in September, 2020 under DISCOM sector and the threshold amended as "Those entities having issued distribution license by State/Joint Electricity Regulatory Commission under the Electricity Act, 2003(36of 2003)"</p> <ul style="list-style-type: none"> For prompt and accurate accounting of the Energy inflows at various voltage levels of the network and the subsequent energy consumption by the end customers, draft regulations for Energy Audit and accounting in DISCOMs were notified, final notification is under process. The Detailed Procedure for Transaction of Energy Savings Certificates was approved by the CERC in the year 2017 after which trading of ESCerts had commenced for the first cycle of PAT. Further, Bureau of Energy Efficiency had proposed modification in the said procedures to accommodate changes in light of the experiences of PAT cycle – I which have also been approved by CERC in June 2021.
--	--	--	---

Recommendation - Para No. 13

National Mission on Enhanced Energy Efficiency

The Committee note that the objective of the Mission is to upscale the efforts to unlock the market for energy efficiency which is estimated to be around 74,000 crore and help achieve total avoided capacity addition of 19,598 MW, fuel savings of around 23 million tonnes per year and greenhouse gas (GHG) emissions reductions of 98.55 million tonnes per year at its full implementation stage. To achieve its aim, NMEBE spells out four initiatives to enhance energy efficiency in energy intensive industries.

The first initiative is Perform Achieve and Trade Scheme (PAT) scheme providing for mandatory energy saving targets for Energy Intensive industries.

The Committee note that the targets set under this have broadly been achieved and 8.67 million tonnes oil equivalent (MTOE) saved while CO2 mitigation was of the order of 30 million tonnes.

The Committee, however, feel that the targets set under PAT cycle I were modest and that was the reason they were achieved in spite of less financial allocation and utilisation. PAT cycle II and III covering the period 2016-19 and 2017-20 respectively expands the vertical as well as horizontal coverage of the scheme. The Committee feel that the focus of the scheme is on incrementally reducing energy consumption in industries that are energy intensive. The Committee recommend for giving emphasis to R&D for energy efficient technologies for which adequate investment is required. The Committee also recommend to incentivize start-ups to encourage them to come to solar energy sector which would help in bringing innovations to this field.

Action Taken by the Ministry

For supporting R&D for energy efficient technologies, BEE has provided financial assistance to National Physical Laboratory (NPL) for setting up of reference lab for LEDs and Central Power Research Institute (CPRI) for setting up of labs for testing and calibration facilities for LEDs and LED lighting systems.

- Support for R&D to customize the induction cook stove for Indian cooking system has been initiated in IIT Gandhi Nagar and Guwahati through Central PowerResearch Institute (CPRI).
- For larger uptake of innovative technologies in energy intensive sectors under the Perform, Achieve and Trade (PAT) scheme, proposal for demonstration of such technologies is under process.
- Proposal for R&D in Electric Mobility such as drivetrains, batteries and V2G technologies.

Recommendation - Para No. 16

National Water Mission

The Committee note that National Water Mission (NWM) is one of the key missions under the NAPCC as water is likely to suffer most from adverse impact of climate change. Water quality and availability will be impacted due to higher incidence of floods and droughts, groundwater recharge will be impacted and rising sea level will threaten coastal habitats. The Committee also note that the objectives of the mission include conservation of water, minimum wastage and ensuring equitable distribution of water through integrated water resources development and management. Major components of this Mission are development of comprehensive water database and assessment of impact of climate change on water resources, promotion of water conservation, augmentation and preservation, focused attention to over-exploited

areas, enhancing water use efficiency by 20 percent, and promotion of basin level integrated water resources management. The Committee have been informed that a comprehensive exercise to map all the water bodies in the Country is underway. In this connection, the Committee may refer to the Composite Water Management Index, 2018 of NITI Aayog, wherein it is stated that data (of water availability), where it is available, is often unreliable due to the use of outdated collection techniques and methodologies. For example, groundwater data in India is based on an inadequate sample of 55,000 wells out of a total 12 million in the country and siloed information collection and sharing, especially between States, adds significantly to costs and inefficiencies. The Committee strongly emphasize that the real-time data about availability of water in the country from all the sources is utmost necessary for a sound water planning and as such recommend to review the out-dated techniques and methodologies of data collection and prepare a comprehensive realistic database of all water bodies covering entire aquifers, borewells, baolis, ponds, ponds/wells which have been abandoned, missing rivers, the dark zones, etc. at the earliest.

Action Taken by the Ministry

- For acquisition of real time water level data, Central Water Commission(CWC) has proposed to install 1093 new telemetry stations on rivers and reservoirs, out of which, 941 telemetry stations have already been installed.
- Further, Water Information Management System (WIMS) software has been developed as an up gradation and extension of e-SWIS software. WIMS is a web-based system for managing data entry, primary data validation, data processing, and storage, for surface water and ground water resources. The features of WIMS are as under:
 - Based on web applications.
 - Surface as well as ground water data is coming into WIMS.
 - Telemetry Management
 - Data from State and other implementing agencies coming to WIMS.
 - Inclusion of flood forecasting and water quality management
 - Easy access to information
 - Automatic backup procedure.
 - Complete security control over data and functionality
 - Data can be entered from anywhere
- Under India-WRIS project, 7,98,908 water bodies of size more than 0.01 ha have been mapped using satellite imageries of 2009-10. State wise statistics of water bodies and its type wise classification is attached as **Annexure I and Annexure II** respectively.

- CWC & ISRO had jointly undertaken the work of development of Water Resources Information System (WRIS) during XI plan. The goal of the project was to develop a 'Single Window Solution' for all Water resources data and information in a standardized National GIS framework for water resources assessment, monitoring, planning and development, Integrated Water Resources Management (IWRM) and to provide foundation for advance modelling purpose to all departments, organizations, professionals and other stakeholders.
- India WRIS web-portal is being operated as a means of disseminating water resources related data in the public domain for users to search, access, visualize, understand and analyze the data. The data collection, generation and presentation into the portal are continuous activities. These data had been collected from CWC offices, State WRD/Irrigation department/Electricity Boards and other Govt. of India departments like CGWB, IMD, Survey of India etc.
- The database is generated on 1:50000 scale & it has 108 GIS layers broadly grouped under five heads: 1) Watershed Atlas, 2) Administrative layers, 3) Water resources projects, 4) Thematic layers and 5) Environmental data. The major GIS layer generated are basin/sub-basin/watershed, river network, canal network, water body, major and medium irrigation project (dam, barrage etc.), road network, town and village extent, CWC HO network and CGWB borewell data. The data in the web-portal is arranged in the 12 major information systems which were further divided into 36 sub-information systems.
- National Water Resources Information Centre (NWIC) has taken up the task of maintenance, updation, collation and dissemination of water data and information through the India-WRIS web portal. (link to web portal <https://indiawris.gov.in/wris/#/>)
- Further, as per 5th MI Census with Reference Year 2013-14, the total number of Water Bodies used for Minor Irrigation are 5,16,303 and the details (State-wise) of the same are enclosed as **Annexure III**.
- Central Ground Water Board has reported that the groundwater levels are monitored four times a year, viz., April/May, August, November & January. Groundwater quality monitoring is carried out once a year during April/May (pre-monsoon period). In case of State agencies, the frequency of monitoring of water level varies from State to State, which may be bi-annually, quarterly or monthly. Some states, like Andhra Pradesh, Uttar Pradesh, Telangana, Bihar, Tamil Nadu, Kerala & Gujarat are monitoring groundwater level at a high frequency (one/two times a day) through Digital Water Level Recorders (DWLRs) and data is acquired through telemetry. In order to strengthen the

monitoring program, under National Hydrology Project, which is a World Bank aided project, most of the state agencies and central agency (CGWB) are proposing to install DWLRs and acquire data through telemetry.

- The water level would be monitored by DWLRs and transmitted to various data centres of State and CGWB and thereafter transmitted to Water Resources Information System (WIMS). Efforts are being made to provide a common platform for maintaining database under NHP and for data dissemination through India- Water Resources Information System (India-WRIS). The manual data collection will continue till the automatic measurement network is strengthened with higher requisite numbers so as to make the monitoring more robust.

Recommendation - Para No. 17

The Committee have been apprised that aquifer mapping is going on and the target for XII Plan is 0.9 million sq.km for XII Plan out of 2.3 million sq.km in the 8 States, Haryana, Punjab, Rajasthan, Gujarat, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu and Bundelkhand areas of UP/MP. Out of the target of mapping of 8.89 lakhs sq.km, 6.31 lakh sq.km could be mapped upto March, 2017. The Committee would like to be apprised of the present status of mapping in these States.

Action Taken by the Ministry

- Central Ground Water Board reported that out of the total geographical area of nearly 33 lakh sq. km of the country, an area of -25 lakh sq. km map able area has been identified to be covered under Aquifer Mapping programme. So far (up to March 2020), nearly 13 lakh sq. km area of the country has been covered under Aquifer Mapping and the remaining nearly 12 lakh sq. km is envisaged to be covered during 2020-23.

Recommendation - Para No. 18

The data furnished by the Ministry with regard to financial allocation and expenditure indicates a dismal performance of the National Water Mission. During the years 2013-14 to 2016-17, whereas ₹195 crore were allocated at Budget Estimates stage, the allocations were drastically reduced to ₹17.45 crore at RE stage which too could not be utilised fully, expenditure being just ₹13.22 crore. The very poor position of financial achievement is indicative of the low performance of the mission during these years. Besides the financial allocations at budget estimates stage are being reduced year after year, the allocation of ₹110 crore during the year 2013-14 came down to ₹15 crore during the year 2017- 18. The Committee are not able to comprehend the poor financial achievement particularly when the problems related to water are increasing year after year, the number of over-exploited Blocks increasing from 802 during 2009 to 1034 during 2013, the critical Blocks increasing

from 169 to 253, semi-critical Blocks increasing from 523 to 681 and Saline Blocks rising from 71 to 96 during this period. Not only that as per Government's data, there is a water scarcity of 1000 metre/person/year, the per capita water availability is constantly decreasing with 5000 m³/year during 1951 to 1545 during 2011 and the expected further decline is to 1140 by the year 2051. The Committee take strong exception to the way such an important mission related to water is functioning as is apparent from the status of financial achievement and would like the Government to analyse the performance of the mission and take all the desired corrective action to address the various areas related to water availability and quality in various States/UTs.

Action Taken by the Ministry

- The reasons for low budgetary allocation and less expenditure in the National Water Mission during the previous years are as follows. National Water Mission was constituted as a mission to implement the goals on a Mission mode throughout the country. However, NWM still functions as a wing of the Ministry. Lack of administrative and financial powers to the NWM has been one of the major bottlenecks in the smooth and independent functioning of the mission across India. Absence of full time Mission Director till recently coupled with unavailability of regular officers/staffs also added to slow implementation of the programme "National Water Mission". All these factors added to substantial reduction in the budget allocations to the NWM and resultantly less expenditure due to which a number of goals related activities could not be implemented.
- Ministry has taken action to post full time Mission Director in the NWM and recently an Additional Secretary level officer has been posted as Mission Director of National Water Mission. Besides, officers of Central Secretariat Service and Central Staffing Scheme of the level of Deputy Secretary/ Director have been posted in the Mission. In addition, couple of Consultants/ Young Professionals, specialized in subject matters, has been appointed to deal with the technical matters.
- NWM has been encouraging the technical team consisting of Consultants/Young Professionals to undertake research on the existing programs/policies, evaluate emerging trends/best practices in the global scenario, and policy discourse. This would lead to policy oriented research with practical implications on NWM's formulation and implementation of future programs/policies regarding water governance in India.

Recommendation - Para No. 19

The Committee note that the targets of the mission include promotion of citizen and state actions for water conservation, augmentation and preservation and focused attention to vulnerable areas including over-exploited areas. Also, State Specific

Action Plans (SSAP) for water sector covering irrigation, agriculture, domestic water supply, industrial water supply and waste water utilization in respect of all the States/UTs are being prepared. The Committee, however, note that there is no mention of people centric programmes and benefits and promotion of traditional knowledge of water conservation existing in the Country in the mission documents. The Committee is of the view that various regions in the Country have well developed and effective scientific traditional systems of water conservation suited to their areas and the mission needs to benefit from traditional knowledge. The Committee recommend for restoring/reclaiming water bodies in cities as they act as sponges at the time of excess rain and store water for supply when there is no rain.

Action Taken by the Ministry

- The Repair, Renovation and Restoration (RRR) of Water Bodies Scheme under PMKSY aims at restoring irrigation potential by improvement and restoration of water bodies along with other multiple objectives such as enhancing the tank storage capacity, ground water recharge, increased availability of drinking water, improvement of catchment of tank commands etc. It covers rural water bodies having minimum water spread area of 5.0 hectare and urban water bodies having water spread area from 2.0 hectare to 10.0 hectare.
- Under the Repair, Renovation and Restoration (RRR) of Water Bodies scheme, since 12th plan onwards, 2228 water bodies in cluster schemes are ongoing with an estimated cost of Rs.1914.86 crore. Central Assistance (CA) of Rs.469.68 crore has been released to states up to August, 2021. Further, 1549 water bodies have been reported to be completed up to August, 2021. Target irrigation potential restoration planned from these schemes is 1.89 lakh hectare and out of this, 1.104 lakh hectare is reported to be restored till August, 2021. In the current financial year, no release has been made under RRR of Water Bodies schemes.
- One of the strategies specified in the Mission Document of the National Water Mission include 'promotion of traditional systems of water conservation.
- Under the aforesaid strategy, NWM advocates restoration/ reclamation of water bodies, particularly the traditional system of water conservation. Keeping in view the need to sensitize the stakeholders to restore and preserve such bodies, NWM has gathered information of about 100 unique step wells across the country is in the process of compilation of a book which will not only include photographs and details of step wells but also the precise GPS coordinates of their locations.

- The “Jal Shakti Abhiyan: Catch the Rain” campaign was launched by Hon’ble Prime Minister on 22 March 2021, the World Water Day and is being taken up in all the districts (rural as well as urban areas) covering entire country during the pre-monsoon and monsoon period. The campaign period is from March 22, 2021 to November 30, 2021 - the active monsoon period in the country.
- One of the five focused interventions of “Jal Shakti Abhiyan: Catch the Rain” campaign includes renovation of traditional water bodies. Accordingly, under “Jal Shakti Abhiyan: Catch the Rain” campaign, Nation Water Mission has requested all the states and union territories to take up the work of renovation of traditional water bodies.
- As per the information uploaded by Central Ministries/Departments on the “JSA: CTR” portal, around 1,16,639 traditional water bodies have been renovated during the period of 22nd March 2021 to 19.09.2021.
- A project is being funded by National Water Mission (NWM) titled "Hydro-geological Assessment and Socio-Economic Implications of Depleting Water Resources in Nainital" submitted by CEDAR (Centre for Ecology Development and Research), in collaboration with IIT (Indian Institute of Technology, Roorkee) and Forest Research Institute, Dehradun. The project will help in rejuvenation and restoration of Nainital Lake. The project will achieve data sharing, research sharing, first city repository for urban water, and natural environment, formed in such a way that other cities could participate or adapt the mechanism for future.

Recommendation - Para No. 20

The Committee note that as per the data maintained by the Central Ground water Board, 85 percent of the rural population uses groundwater for drinking and other domestic purposes. High concentration of fluoride in ground water beyond the permissible limit of 1.5 mg/L is a major health problem in India. Due to excess fluoride in ground water, a huge rural population is threatened with health hazards of Fluorosis.

184 districts in 19 States of the Country are especially vulnerable in this regard. Similarly, arsenic contamination is another area of concern. Nitrate contamination is mainly from man-made activities. In India, high concentration of nitrate (more than 45 mg/l) has been found in a large number of districts of Andhra Pradesh, Bihar, Delhi, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Tamil Nadu, Rajasthan, West Bengal and Uttar Pradesh, the highest value being 3080 mg/L found in Bikaner, Rajasthan. The Committee find that there is no centralised research centre for checking and preventing the presence of arsenic and fluoride contamination of water in the country. The contaminated water has

resulted in a number of deaths and affects not only human beings but also animals, fishes and horticulture. The Committee take a serious note over lackadaisical attitude of the Government in regard to ground water monitoring and recommend that immediate steps be taken to set up state of the art research centres in all major cities for monitoring of groundwater in all regions of the Country. The Committee also recommend to provide sufficient manpower and equipments for the research centres.

Action Taken by the Ministry

- Central Ground Water Board informed that they have offices in all States to monitor groundwater levels & its quality. The Regional offices of the Board have well equipped chemical laboratories to analyze water samples. 8 of CGWB's chemical labs are NABL accredited. CGWB is periodically monitoring water quality of groundwater at regional scale in the entire country to ascertain the magnitude and extent of ground water contamination.

Recommendation - Para No. 21

The Committee in their 24th Action Taken Report (16th Lok Sabha) on the subject 'Ganga Rejuvenation' pertaining to the Ministry of Water Resources, River Development and Ganga Rejuvenation had expressed serious concern over the way different studies on Arsenic are denied funds/support by the different Ministries/Departments which include "Studies on genesis of arsenic occurrence in Ganga-Brahmaputra basin" by NIH- Roorkee which is awaiting financial approval and another study namely "Study on groundwater dynamics and geochemical processes of arsenic mobilization in the Middle Ganga aquifers for in-situ arsenic remediation" was declined the support on administrative ground. The Committee are not able to understand denial of financial support to such an important studies related to Arsenic particularly when the budgetary allocations made to the mission have remained unutilised and budgetary allocation have been drastically reduced year after year, particularly when it is utmost necessary to identify sources to conclusively establish the mobilization process which helps in arsenic release from Minerals to groundwater to address the issue of arsenic in water. While reiterating their concerns/observations, the Committee would like to be apprised about the status of various studies related to arsenic being undertaken in the country and their financial and physical achievements status.

Action Taken by the Ministry

- A meeting of Inter-Ministerial Group for Arsenic Mitigation (IMG) was held under the Chairmanship of Additional Secretary and Mission Director, National Water Mission, Department of Water Resources, River Development & Ganga Rejuvenation on 20.11.2019 to discuss the progress

of concerned agencies – Central and State Governments – in detecting, mitigating and remedying the arsenic menace in India. During the meeting, following decisions were taken:

- i. The multi-sectorial nature of arsenic problem which cuts across the dimensions of technology prowess, agricultural sustainability, health risks, water-related service provisioning and management, etc. was reiterated.
 - ii. The need for enhanced collaboration among concerned ministries / departments / states in coproducing and implementing a holistic framework of action for introducing transformative outcomes was stressed.
 - iii. State representatives were requested to continuously feed information on their Department's Integrated Management information System for an updated base of knowledge regarding the subject of arsenic in ground water.
 - iv. Initiate a national campaign/competition for sourcing innovative technologies for supplying arsenic-free drinking water to the people and their livestock.
- The funds provided to the States/UTs under Jal Jeevan Mission (JJM) by D/o Drinking Water and Sanitation can be utilized for taking up schemes in water quality-affected areas on priority. Moreover, while allocating the funds under JJM to States/UTs, 10% weightage has been given to population residing in habitations affected by chemical pollutants especially Arsenic.
 - Central Ground Water Board (CGWB) has reported that they have conducted an extensive study covering 15000 samples from the extant network of National Hydrograph Stations in the country and mapped the results showing habitats affected by Arsenic contamination based on the revised limit of 0.01 mg/l by BIS (IS 1050:1012).
 - Under the National Aquifer Mapping Programme, being implemented by Central Ground Water Board (CGWB), special attention has been given to the aspect of arsenic contamination in groundwater. As a special drive, CGWB has constructed exploratory wells in arsenic affected parts of the States of West Bengal, Bihar and Uttar Pradesh under Aquifer Mapping. The arsenic safe deeper aquifer zones have been identified and tapped through cement sealing technique. The exploratory wells are handed over to the State Government for water supply purposes.
 - Physical and financial achievements of exploratory wells constructed by CGWB as part of the special drive in arsenic affected areas of U.P, Bihar and West Bengal States under Aquifer Mapping programme is as under:

S.I No	Study area	No of wells exploratory wells constructed	Expenditure (Rs. in Cr.)
1	Parts of Ballia and Ghazipur District, Uttar Pradesh	62	16.70 Cr
2	Parts of Ghazipur district, Uttar Pradesh	97	26.75 Cr
3	Hoogly district, West Bengal	67	15.69 Cr
4	Buxar district, Bihar	40	8.60 Cr

- Further, Central Ground Water Board has taken up an in-house R&D study on the occurrences and extent of arsenic contamination in Ambagarh Chowki block of Rajnandgaon district, Chhattisgarh.
- Also, National Institute of Hydrology, Roorkee has taken the following steps to mitigate the problem of arsenic contamination:
 - a. NIH has developed a website (draft) containing information on arsenic contamination in India. The link of website (<http://nihroorkee.gov.in/arsenic/>) has been sent to National Water Mission (NWM) for their feedback and suggestions. It is also proposed that the website may be hosted on NWM website for its wider dissemination.
 - b. NIH has submitted a project proposal for Demand Driven R&D study on Arsenic Mitigation in Ganga-Brahmaputra basin with budget estimate of Rs. 1259.50 lakhs to Indian National Committee on Ground Water (INCGW) in Dec. 2020 and awaiting for approval to start the study in Ganga-Brahmaputra basin.
 - c. NIH is carrying out two regional studies and the progress of these studies are provided below:
 1. **Title - Hydro-geochemical Evolution and Arsenic Occurrence in Aquifer of Central Ganges Basin**
 - This study has been undertaken by NIH under purpose driven study (PDS), National Hydrology Project (NHP). The cost of project is Rs. 70 Lakh out of which 66 lakhs has been spent for achieving the goals of the project. The major objectives are: (a) Evaluation of the controls of regional and local hydrology on arsenic contamination through monitoring of contaminated aquifer. (b) Evaluation of the mechanism of transport of arsenic in geo-environment through a column experiment. The study area is Bhojpur district of Bihar where severe arsenic problem is reported. The study is under progress and is to be completed shortly. The geochemical analyses suggest that rock-water interaction is controlling the geochemistry. The chemical results

revealed high arsenic concentration in the Holocene newer alluvium, characterized by various geomorphological features such as meander scars and oxbow lake (northern part of district). Arsenic is more concentrated in the depth range of 15-40 meter below ground surface in proximity to river Ganga. The arsenic concentration ranged from not detected (ND) - 785 ppb with average value of 218 ppb in arsenic contaminated areas during pre-monsoon (May, 2019). The study suggest that reduction of iron oxide adsorbed with arsenic is responsible for arsenic mobilization in the ground water. Sediment chemistry results also indicate that arsenic and iron were found more concentrated in the depth range of 10-20 meter, which support the presence of arsenic in groundwater from shallow aquifer consisting organic rich clay zone.

2. Title - Future Secular Changes and Remediation of Groundwater Arsenic in the Ganga River Basin - FAR GANGA

- The project FAR GANGA deals with developing a process-based understanding of the vulnerability of complex Ganga river basin aquifers to geogenic arsenic pollution. It also addresses, for improved public health and wellbeing, the impact of groundwater management on secular changes in groundwater arsenic hazard. The project has the objectives to i) produce a national risk assessment of shallow groundwater arsenic from a geo-statistical model based on carefully selected tectonic, geological, geomorphological and climatic variables and ii) produce recommendations for the remediation/mitigation of human exposure and health risks arising from current and future arsenic prone groundwaters. The project is collating views, knowledge and understanding of key stakeholders (both institutional and individual) on arsenic hazard and risks in groundwater systems and will make recommendations on best practice in selecting and implementing remediation/mitigation options.
- The project's objectives will be achieved in the context of contrasting hydrogeological regimes in the upper, middle and lower Ganga. To that end, sites for a particular focus of observational studies are spread over the states of Uttar Pradesh, Bihar and West Bengal. The execution of the study is divided into 7 work packages i) Hazard and risk modelling, ii) Remediation strategy – present and future, iii) study of urban and rural organics responsible for mobilization of arsenic in groundwater, iv) MAR systems, v) contaminant transport through Hyporheic zones, vi) Reactive contaminant transport modelling and vii) Outreach, impact and stakeholder engagement. These work packages are co-managed by the India (NIH, IITR, MCS and IIT-Kgp) and UK partners (UoM, UoS, UoB and BGS).

- The key achievements so far are: development of geo-statistical models for the spatial distribution of arsenic in groundwater; review of various remediation approaches; completion of groundwater arsenic mapping across Ballia and across all 38 districts of Bihar, completion of groundwater sampling across the city of Patna, progress in the installation of field monitoring (river/groundwater) stations along the length of the Ganga and successful running of a series of stakeholder events, including in Roorkee, Manchester, Varanasi and Patna.
- In addition to the above, and in consonance with the provision of the Operational Guidelines for implementation of JJM, following is also stated included in so far as JJM is concerned:

While allocating funds under JJM to States / UTs, 10% weightage is being given to the population residing in habitations affected by chemical contaminants, irrespective of type of geo-genic contaminant. Funds provided to the States under JJM to be utilized for taking up schemes in water quality-affected areas on priority. Further, up to 2% of the allocation to States/ UTs can be utilized for Water Quality Monitoring & Surveillance activities. In view of the enhanced allocation under JJM and reported utilization in previous years, funds are sufficient.

In addition, provisioning of potable water supply to water quality-affected habitations is a top priority under JJM. Efforts are made to ensure safe drinking water to all quality-affected villages especially having Arsenic and Fluoride contaminations. In case, it takes some time in completing piped water supply scheme to provide tap water to every home in quality-affected habitations, purely as an interim measure, 8 to 10 litres of water per person per day for drinking and cooking by providing treated water from community water purification plants. This would provide immediate relief. As a permanent relief States have been further asked to provide FHTCs in quality affected habitations from safe sources.

Recommendation - Para No. 22

The Committee find that the Composite Water Management Index of NITI Aayog mentions about the country facing the worst water crisis in its history with 600 million people facing high to extreme water stress, about 2 lakh people dying every year due to inadequate access to safe water. What is worrying more, as per the findings of the report, is that the crisis is going to get worse with country's water demand projected to be twice of the available supply by 2030, implying severe water scarcity for hundreds of millions of people and an eventual 6 percent loss in the country's GDP. To add to the great gaps between the demand and availability of water, inter-State disagreements are on the rise, with seven major disputes currently raging, pointing to the fact that limited frameworks and institutions are in place for national water governance, as reported by NITI Aayog in its report.

While taking note of the alarming water scenario as projected by NITI Aayog in its report, as stated above, the Committee emphasize for taking urgent and immediate actions on various fronts. For effective water management, there is a need for a well drafted and well regulated National Water use Policy which clearly delineate the use of water by different sectors viz. agriculture, industry, domestic etc. The Committee further note that so far as water consumption is concerned, ways of living in the city are unsustainable because of excessive wastage of water. In some States, wastage of water is rampant because of faulty, cropping patterns and also because free electricity and water is being provided. The NAPCC sets a goal of a 20 percent improvement in water use efficiency through pricing and other measures to deal with water scarcity.

The importance of clean water has been highlighted in the Atharva Veda, as quoted in the 15th report of the Committee on the subject 'Ganga Rejuvenation'. Even at the cost of being repetitive, the Committee would again like to quote these hymns to emphasize for the need of clean water for our masses:

"As mothers always bring happiness to their children, in the same manner. The streams, nourishers of mankind, flow incessantly, adding milk and honey to their waters all the way".

"O learned persons, may you know that there is ambrosia in the waters; there is healing balm in them, and there are medicinal herbs; know this, and by their proper use become vigorous like horses and kine."

"O elemental waters, may you behold me with an auspicious glance; may you touch my skin with your body. Dripping luster, glittering here and that are purifying, may those elemental waters be gracious and pleasing to us".

"The worms, that are found in the hilly regions, in the forests, inside the animals' and in waters, and that have entered' our bodies, I hereby destroy their entire generation".

"I bring her these waters, free from wasteful disease. (consumption)- and destroyers of the wasteful disease. I enter these houses with the-, never-dying fire".

Its life-giving and healing qualities are evident from the following description in Rajanirghanta (300 AD) "The qualities of Ganga water are: Coolness, sweetness, transparency, high tonic property, wholesomeness, potability, ability to remove evils, ability to resuscitate from swoon caused by dehydration, digestive property and ability to retain wisdom":

Scriptures cautioned against misusing the Ganga river. For instance, thirteen types of human actions: (1) defecation, (2) gargling, (3) throwing of used floral offerings,

(4) rubbing of filth, (5) flowing bodies (human or animal), (6) frolicking; (7) acceptance of donations; (8) obscenity; (9) considering other shrines to be superior, (10) praising other shrines, (11) discarding garments; (12) bathing, and (13) making noise were prohibited.

The Committee, therefore strongly recommend for working on a mission mode by all the concerned Government Ministries/Departments/Organisations of the Union and State Governments so as to ensure clean water free from all pollutants such as arsenic, fluoride, salinity, heavy metals (Lead, Cadmium, Zinc, Mercury), pesticides, etc. for our large population. On water conservation, the Committee may like to emphasize that every drop of water saved is the water produced and as such all the desired initiatives, which include recharging of under-ground water sources; enhancing storage capacity both above and below ground; giving emphasis on storage of rain water; incentivizing water efficient technologies; efficiencies of irrigation systems; plugging leakages; etc. should be taken with a sense of urgency. Further for achieving water use efficiency, free water should be provided upto a limit for all the sectors. Above all there is a need for sensitizing the people at large about the alarming situation with regard to water so as to involve them in the Mission.

Action Taken by the Ministry

(1) Ensuring water free from pollutants:

- i. Water being State subject, initiatives on water management including conservation and augmentation of ground water in the country is primarily a States' responsibility.
- ii. National Water Mission (National Water Mission) is working in close coordination with Central Ground Water Board, National Institute of Hydrology, Department of Drinking Water & Sanitation, Central Ministries and various State Governments on action plan to ensure clean water free from all pollutants such as fluoride, arsenic, salinity, heavy metals (Lead, Cadmium, Zinc and Mercury).
- iii. National Water Mission has requested Ministry of Environment, Forest & Climate Change; Ministry of Health and Family Welfare; Central Ground Water Board; NIH and all States to submit periodic as well as detailed status report on water quality improvement programs/projects to ensure pollutant free water availability for water users.
- iv. NWM emphasizes operation and maintenance of pollutant removal schemes, especially through effective community participation.

- v. NWM has requested all concerned organizations to provide information on the steps taken to update water quality monitoring and management standards in India.
- vi. The funds provided to the States/UTs under Jal Jeevan Mission (JJM) by D/o DWS can be utilized for taking up schemes in water quality-affected areas on priority. Moreover, while allocating the funds under JJM to States/UTs, 10% weightage has been given to population residing in habitations affected by chemical pollutants especially Arsenic.

(2) Initiatives on various aspects of Water Conservation:

- i. Government of India has launched Jal Shakti Abhiyan (JSA) in two phases, 1st July to 15th September, 2019 and 1st October to 30th November, 2019 under which officers, groundwater experts and scientists from the Government of India have worked with state and district officials in 256 water-stressed districts of the country to promote water conservation and water resource management by focusing on accelerated implementation of five targets interventions, viz. water conservation & rainwater harvesting, renovation of traditional and other water bodies/tanks, reuse and recharge of bore wells, watershed development and intensive afforestation.
- ii. National Water Mission's campaign "Catch the Rain" is to nudge the states and stake-holders to create appropriate Rain Water Harvesting Structures (RWHS) suitable to the climatic conditions and sub-soil strata i.e. before and during the onset of monsoon. Under this campaign, drives to make check dams, water harvesting pits, rooftop RWHS etc; removal of encroachments and de-silting of tanks to increase their storage capacity; removal of obstructions in the channels which bring water to them from the catchment areas etc.; repairs to step-wells and using defunct bore-wells and unused wells to put water back to aquifers etc. are to be taken up with active participation of the people. NWM has written to all States/ UTs, Central Armed Police Forces, Ministry of Defense, Chairman Railway Board, prestigious educational institutions like IIMs & IITs requesting to take steps to ensure appropriate rain water harvesting and artificial recharge structures before the onset of monsoon season.
- iii. The "Jal Shakti Abhiyan: Catch the Rain" campaign was launched by Hon'ble Prime Minister on 22 March 2021, the World Water Day and is being taken up in all the districts (rural as well as urban areas) covering entire country during the pre-monsoon and monsoon period.

The campaign period is from March 22, 2021 to November 30, 2021 - the active monsoon period in the country.

- a) The five major interventions of the campaign include water conservation & rainwater harvesting; renovation of traditional and other water bodies/tanks; reuse and recharge of bore wells; watershed development; and intensive afforestation.
 - b) Other activities proposed to be taken up during the campaign include roof-top RWHS on all buildings- with priority for government buildings, water harvesting pits in all compounds, maintenance of old/ building of new check dams/ponds; enumerating, geo-tagging and making inventory of all water bodies; preparation of scientific plans for water conservation, removal of encroachments of tanks/lakes, de-silting of tanks to increase their storage capacity, removal of obstructions in their channels, repairs to traditional step-wells and other RWHS, use defunct bores/unused wells to recharge aquifers, rejuvenation of small rivers and rivulets, revival of wetlands and protection of flood-bank. The State Governments have been requested to set up 'Jal Shakti Kendras' (JSKs) in all district headquarters. These JSKs will act as "knowledge centers" for disseminating information related to water, techniques for water conservation and water saving. It will provide technical guidance to local people as well as to the district administration.
- iv. National Water Policy (2012) advocates conservation, promotion and protection of water. The Policy has been forwarded to all States/UTs concerned Ministries/Departments of Central Government for adoption.
 - v. In compliance to the decision taken by the Committee of Secretaries, an 'Inter- Ministerial Committee' under the Chairmanship of Secretary (WR, RD & GR) has been constituted to take forward the subject of 'Push on Water Conservation Related Activities for Optimum Utilization of Monsoon Rainfall', The Committee has held several meetings and recommendations given by the Committee have been implemented.
 - vi. Ministry has circulated a Model Bill to all the States/UTs to enable them to enact suitable ground water legislation for regulation of its development, which includes provision of rain water harvesting. So far, 15 States/UTs have adopted and implemented the ground water legislation on the lines of Model Bill.
 - vii. Central Ground Water Board (CGWB) has prepared a "Master Plan for Artificial Recharge to Ground Water — 2013" which inter-alia envisages construction of about 1.11 crore artificial

recharge/Rainwater harvesting structures in urban and rural areas. The Master Plan has been circulated to the State Governments for implementation.

- viii. Central Ground Water Authority (CGWA) has been constituted for regulation and control of ground water development and management in the country. CGWA has issued directives to all States and UTs to take measures to promote/adopt artificial recharge to ground water / rain water harvesting. It also grants No Objection Certificates (NOCs) for ground water abstraction with mandatory conditions for conservation, augmentation and efficient use of ground water.
- ix. Central Ground Water Board is implementing "National Aquifer Mapping and Management (NAQUIM)" for mapping of aquifers, their characterization and development of aquifer management plans to facilitate sustainable development of ground water resources. Aquifer maps and management plans have been shared with the respective State Government agencies.
- x. Central Ground Water Board is also implementing 'Ground Water Management and Regulation' scheme in selected over-exploited blocks of the aspirational districts on pilot basis. A joint Action Plan has been prepared with the Ministry of Rural development for effective implementation of water conservation and artificial recharge structures in convergence with MGNREGS. Nine water stressed blocks in the State of Haryana, Rajasthan, Madhya Pradesh, Maharashtra, Telangana, Karnataka and Tamil Nadu have been identified, where work is in progress.
- xi. Best practices of water conservation by various entities including private persons, NGOs, PSUs etc. have been compiled and put on the website of the Ministry for the benefit of general public.
- xii. Model Building Bye Laws (MBBL), 2016 circulated by Ministry of Urban Development include provisions for rainwater harvesting which has been shared with all the States. So far 32 States / UTs have adopted the provisions of rainwater harvesting of MBBL-2016.
- xiii. Central Government supports construction of water harvesting and conservation works primarily through Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Pradhan Manta Krishi Sinchayee Yojana – Watershed Development Component (PMKSY-WDC).
- xiv. Atal Bhujal Yojana (ABHY), a scheme for sustainable management of ground water with community participation, was launched with the

goal to demonstrate community-led sustainable ground water management which can be taken to scale. It is a Central Sector Scheme with an outlay of Rs. 6000 Cr. with 50% loan from the World Bank.

- a) The scheme is being implemented from April, 2020 for a five year period. The major objective of the Scheme is to improve the management of groundwater resources in select water stressed areas in identified states viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. The areas covered under Atal Bhujal Yojana are enclosed as **Annexure IV**.
 - b) Atal Jal is targeted at sustainable ground water management, mainly through convergence among various on-going schemes with the active involvement of local communities and stakeholders. This will ensure that in the Scheme area, the funds allocated by the Central and State governments are spent judiciously to ensure long term sustainability of ground water resources. It also aims at bringing about behavioural change at the community level through awareness programs and capacity building for fostering sustainable ground water management in the participating States.
- xv. Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is implemented by the Ministry of Rural Development under which various measures for water conservation have been undertaken. Water conservation, water harvesting structures (like underground dykes, earthen dams, stop dams, check dams & roof top rain water harvesting structures), renovation of traditional water bodies (including desilting of irrigation tanks & other water bodies) and conservation of old step well/baolis are permissible activities under MGNREGS.

(3) National Water Mission has undertaken following actions for increasing Water Use Efficiency:

- i. NWM has awarded 26 Base Line studies covering 6 States for improving water use efficiency in irrigation sector, to NERILWALAM, Assam; WALMTARI, Hyderabad; WALMI, Aurangabad.
- ii. NWM has taken up scoping studies through TERI by undertaking comprehensive water audit/ benchmarking in two industrial sectors i.e. thermal power plants & textile industries for enhancing industrial water use efficiency in India.

- iii. For developing standards in respect of improving water use efficiency in domestic appliances, NWM, in collaboration with Bureau of Indian Standard (BIS), is working on efficiency labeling standards for household appliances like washing machines, sanitary wares & fittings.
- iv. Food & Agriculture Organization (FAO) has come out with 'dual crop coefficient' concept replacing 'Single Crop Coefficient' method for assessment of crop water requirement, and to plan irrigation scheduling. It has also developed several soft tools, such as CROPWAT, MABIA app on WEAP software for the same. These techniques need to be spread by the training institutes, and absorbed by stakeholders. This will enhance water use efficiency further.
- v. Issued official circular requesting Ministries & Departments to install "aerators" in office toilets & Rain Water Harvesting Systems at their office premises.
- vi. A workshop on "Improving Water Use Efficiency in Industry" was held on 5th March 2020.
- vii. 'Sahi Fasal' campaign was launched by National Water Mission on 14.11.2019 to nudge farmers in the water stressed areas to grow crops which are not water intensive, but use water very efficiently; and are economically remunerative; are healthy and nutritious; suited to the agro-climatic-hydro characteristics of the area; and are environmentally friendly. Under Sahi Fasal, series of workshops are being organized in the water stressed areas of the country. NWM organised workshops on 'Sahi Fasal' in Amritsar (on 14.11.2019), Aurangabad (on 13.01.2020), New Delhi (on 26- 27.11.2019) and Kurukshetra (on 14.02.2020) where farmers participated enthusiastically. Punjab/Haryana has taken steps for crop diversification.

(4) Initiatives taken up for sensitizing the people:

- i. "National Water Mission Awards" were instituted to encourage and incentivize organizations and individuals to conserve and manage water, and to recognize excellence in water conservation, efficient water use and sustainable water management practices. The awards are given in ten categories defined under five goals of NWM. The first NWM awards were given on 25.09.2019 to 22 winners.
- ii. Periodic Publication/ Webinars/ Seminars:
 - a) 'Water Talk': A monthly 'WATER TALK' lecture series is an important activity undertaken by NWM with the aim to stimulate awareness, build

capacities of stakeholders and encourage people to become active participants sustain life by saving water on earth. 'WATER TALK', the lecture series, wherein leading Water experts are invited to present inspiring and broadening perspectives on current water issues in the country. So far NWM has organized 30 Water Talks out of which last 18 talks have been held on virtual platform.

- b) 'Water Tech Talk': 'The Water Tech Talk' series has been initiated in October 2020 and has been conducted ever since on the on second Friday of every month. These virtual sessions aimed to focus on technological and technical advancements, pioneering research and academic excellence exhibited by experts in the field on a myriad of themes related to the water sector.
 - c) Dialogue series with DMs on "Catch the Rain": A periodic dialogue series has also been started where Collectors/District Magistrates/Commissioners and water activist have been invited to share their commendable work in their districts to address the water issues. The webinar series started in August 2020.
 - d) 'Jal Charcha' magazine: The monthly magazine of the ministry- 'Jal Charcha ' is an effort to bring best practices in water sector to the national stage and move ahead in the direction of creating water consciousness in the minds of the people of the country. Given the vastness of the subject, while the theme of the magazine would change with every issue, effective management of water resources in an integrated manner will remain at the helm.
- iii. IEC and Social Media: NWM has prepared IEC materials on water harvesting and conservation, which is uploaded in the official website of NWM. The link is shared in all meetings to maximize the reach of the campaign. A creative agency was also hired to for implementation of IEC activities with a view to disseminate information about the campaign and to sensitize common populace about the campaign. National Water Mission is using all social media tools like Facebook, Twitter, Instagram, Youtube etc. for disseminating information about the campaign with a view to spread awareness about different aspects water conservation and for effective public outreach. NWM updates the details of water conservation activities on social media platforms on regular basis. NWM also upload details of webinars and meetings etc. on social media. NWM also hired creative agency to promote awareness about JSA:CTR and for sensitization of water conservation activities. State Governments, vide letter dated 16.03.2021, has been requested to take the support of NYKS for

expanding the outreach of the campaign. MyGoV platform has been used to organize quizzes and to take water pledge.

- Ministry of Housing and Urban Affairs (MoHUA) has recently launched AMRUT 2.0 with an outlay of 12,77,000 crore. While Atal Mission for Rejuvenation and Urban Transformation (AMRUT) focussed on providing universal coverage of water supply in 500 major cities. AMRUT 2.0 covers all statutory towns and aims to make our cities 'water secure'. Following are the salient features of AMRUT 2.0 which are in sync with recommendation of National Water Mission:
 - i. AMRUT 2.0 will promote circular economy of water through development of city water balance plan for each city focusing on recycle/reuse of treated sewage, rejuvenation of water bodies and water conservation.
 - ii. Information, Education and Communication (IEC) campaign is proposed to spread awareness among masses about conservation of water. Target based capacity building program will be conducted for all stakeholders including contractors, plumbers, plant operators, students, women etc. to bring greater efficiency.
 - iii. Mission has a **reform agenda** with focus on strengthening of urban local bodies and water security of the cities. Major reforms include rejuvenation of water bodies, rain water harvesting, reducing Non Revenue Water (NRW), meeting 40% industrial water demand through recycled used water, dual piping system for bulk users through building bye-laws.
 - iv. Pey Jal Survekshan will be conducted in cities to ascertain equitable distribution of water, reuse of wastewater and mapping of water bodies with regards to quantity and quality of water through a challenge process.
- The mission has been launched by Hon'ble Prime Minister and Mission Guidelines will soon be launched by MoHUA.
-

Recommendation - Para No. 23

National Mission for Green India

The Committee note that the National Mission for Green India aims at protecting, restoring and enhancing India's diminishing forest cover and responding to climate change by a combination of adaptation and mitigation measures. It envisages a holistic view of greening and focuses on multiple ecosystem services, especially, biodiversity, water, biomass, preserving mangroves, wetlands, critical habitats etc. along with carbon sequestration as a co-benefit. ₹2,000 crores for implementation of

various activities under the mission for 12th plan has been approved by the Cabinet. The Committee also note that the mission seeks to increase forest cover to the extent of 5 million hectare and improve quality of forests on another 5 million ha and also to improve forest based livelihood income of about 3 million households. Further, enhanced annual CO2 sequestration by 50 to 60 million tonnes in the year 2020 is also an objective. The scheme is proposed for a period of 10 years with an outlay of ₹60,000 crore. The Committee find that during FY 2017-18 ₹47.80 crore has been allocated for the scheme which is grossly insufficient as the committed liability for FY 2015-16 and 2016-17 is ₹89.53 crore which is much more than the budget allocated. The Committee, therefore, recommend that adequate financial allocation be made for the mission so that the activities of the mission are carried out more efficiently.

Action Taken by the Ministry

- Green India Mission (GIM) activities started in the FY 2016-16. So far fund amounting to Rs. 455.73 crores have been released under GIM to fourteen States namely Chhattisgarh, Odisha, Manipur, Mizoram, Kerala, Karnataka, Andhra Pradesh, Punjab, Uttarakhand, Madhya Pradesh, Maharashtra, Sikkim, West Bengal and Himachal Pradesh and one Union Territory of Jammu & Kashmir for carrying out plantation activities in 167151 ha and livelihood activities within the GIM Landscapes.
- GIM has made demand of Rs. 526.86 crores for the year 2021-22. However, Rs. 250.0 crore has been allocated for the year 2021-22 which is grossly insufficient to meet the Mission's objectives.
- Therefore, adequate funds need to be allocated for the Mission so that the activities of the Mission can be carried out more efficiently. Afforestation is critical for ecological restoration of the degraded areas and also to meet various national and international commitments. Recognizing the fact that around 60 percent of the allocation under GIM goes for wage employment in rural sector, the budgetary support is essential to implement these Schemes. However, the Ministry will also take up appropriate other measures in addition to the demand for increase in the budgetary allocation.
- Other stakeholders such as CPSUs, SPSUs, Corporate Sectors, NGOs, Institutions will be actively associated in massive tree planting activities outside forest area. Further suitable policy measures will be initiated to leverage private investment in afforestation and tree planting activities.

Recommendation - Para No. 27

The Committee note that the mission envisages improvements in energy efficiency in buildings through extension of the energy conservation building code - which addresses the design of new and large commercial buildings to optimize their energy demand. The Committee are of the view that energy conservation building code talks about important things about energy

efficiency of large buildings such as use of natural light and air for reduced energy requirements. The main issue, however, is the enforceability of the building code. Enforcing changes in construction through imposition of codes may also result in resistance from the people. Moreover, the Committee are of the view that as an ancient civilization, our Country has traditional house building knowledge and technology which are more suited for our needs. All the habitats whether in desert habitat, mountain habitat or plain areas, people have traditional building system designed for comfortable living and maximum use of natural resources like air and water and locally available materials. Blindly following western technologies and using cement and concrete in different habitats result in buildings requiring intensive energy. Therefore, building designs in new cities should be environment friendly, energy friendly and water friendly. The construction of residential/ commercial buildings should be in a way that enables proper cross ventilation and natural light which would reduce the use of energy. The Committee, therefore, recommend to formulate building code and guidelines of the Mission which maximizes use of traditional knowledge and building material in buildings, minimize cutting of trees besides promoting our traditional construction technologies through institutions like CAPART, HUDCO etc.

Action Taken by the Ministry

Ministry of Housing and Urban Affairs (MoHUA) is implementing Pradhan Mantri Awas Yojana - Urban (PMAY-U) since June 2015 to provide all-weather pucca house with basic amenities to all eligible urban households of the country. Based on the project proposals submitted by States/ Union Territories (UTs), as on 31st July 2023, 118.90 lakh houses have been sanctioned by the Ministry, out of which 112.30 lakh have been grounded and 76.02 lakh have been completed/ delivered to the beneficiaries. The scheme period of PMAY-U which was earlier upto 31.03.2022, has since been extended up to 31.12.2024, except Credit Linked Subsidy Scheme (CLSS) vertical of the scheme, to complete all the houses sanctioned without changing the funding pattern and implementation methodology.

To accelerate adoption of innovative and alternative construction technologies, to improve the pace and quality of work under PMAY-U and for addressing the challenges of rapid urban growth and its attendant requirements, a Technology Sub Mission (TSM) has been set up in PMAY-U. The sub mission aims to facilitate adoption of modern, innovative and green technologies and building materials for faster and quality construction of houses. The sub mission, inter alia, works on green buildings using natural resources, innovative technologies and materials, earthquake and other disaster resistant technologies and design. Building Material and Techno10kY Promotion Council (BMTPC) has already been working on promoting the use of local and traditional knowledge with regard to the construction technologies and building material. Further, it is working to develop and operationalize a

comprehensive and integrated approach for promotion of environment friendly and energy efficient innovative building materials and construction technologies.

Recommendation - Para No. 28

The Committee note that at present 30 percent population of the Country lives in urban areas which is expected to grow to 40 percent by 2021 and 50 percent by 2050. The number of motor vehicles on our roads was 52.37 million in 2000 which increased to 121.63 million in 2011. The Committee note that India is poised for rapid economic growth. Such future growth will largely come from economic activities in urban areas as cities today contribute nearly 65 percent of India's GDP. With increasing urban sprawl, it is estimated that by 2030, this figure would reach nearly 70 percent. Nonetheless, economic activities would largely depend on mobility of the people dwelling in urban areas. Hence, development of cities through prioritizing urban transport is a step forward in this direction. Urban Transport is a key urban service that imparts efficiency to the city by providing mobility to the workforce and hence best productivity. However, the huge number of vehicles on roads is also leading to congestion and pollution. The number of motor vehicles on our roads was 52.37 million in 2000 which increased to 121.63 million in 2011. The total number of registered motor vehicles in India was 210.02 million as on 31.03.2015. As a result of rapid increase in motor vehicles, congestion on the road is increasing leading to stress to the commuters and spike in air pollution. One of the objectives of the mission is better urban planning and modal shift to public transport and making long term transport plan to facilitate the growth of medium and small cities in such a way that ensures efficient and convenient public transport.

The Committee note that the Government is implementing AMRUT scheme (Atal Mission for Rejuvenation and Urban Transformation) and Smart Cities mission under the Sustainable Habitat Mission. AMRUT inter alia aims at reducing pollution by switching to public transport or providing facilities for non-motorised transport whereas the aim of Smart Cities mission is to provide basic infrastructure through convergence with other schemes in selected 100 cities. The Government is also encouraging public transport through financing of buses and BUS Rapid Transit System (BRTS) and Jawaharlal Nehru National Urban Renewal Mission (JnNURM). Metro Rail Projects are being implemented in 13 cities of the Country. The Committee are of the view that schemes such as AMRUT and Smart Cities Mission are effective schemes for promoting public transport but their horizontal coverage is very small. Such schemes need to be expanded to other cities also so that the problem could be resolved before it is too late. Similarly, the metro rail services should be expanded to all cities which have a population of more than a million. The Committee also recommend that in major cities multiple modes of transport such as local trains, trams should also be promoted. Besides, attention needs to be paid to switching over to clean energy for running our vehicles, i.e., cars

and buses. Manufacture/ use of electric cars needs to be incentivized besides giving attention to the infrastructure/ services needed like electrical recharging stations. Not only that R&D in solar driven transport like cars and buses should be given more emphasis so as to find solar solutions for our transport. For covering small distances, dedicated cycle tracks need to be constructed. The satellite cities should be linked with the nodal city through rapid transport system to avoid congestion in the city centres. All the initiatives being taken in this regard need to be further emphasized, which certainly would reduce our dependence on diesel/petrol thereby saving money and addressing the issue of pollution particularly in big cities and metros.

Action Taken by the Ministry

Urban transport, which is an integral part of urban development, is a State subject. Therefore, respective state governments are responsible for planning and developing urban transport infrastructure. Ministry of Housing and Urban Affairs (MoHUA) provides financial assistance to such projects under its policy/guidelines, when such proposals are mooted by State Governments subject to feasibility of the projects and availability of resources.

However, in order to deal with the emerging problems of increase in number of private vehicles, traffic congestion, travel time uncertainty, air pollution, etc. due to rapid urbanization, MoHUA has taken certain initiatives which are enumerated as under:

vii. MoHUA formulated National Urban Transport Policy in April, 2006. The objective of the policy is to ensure accessible, safe, affordable, quick, comfortable, reliable and sustainable mobility for all. The policy seeks to promote integrated land use and transport planning, greater use of public transport and non-motorized modes of travel and use of cleaner technologies. It offers Central Government's financial support for investments in public transport, infrastructure for greater use of non-motorized modes of transport, construction of parking facilities etc. It encourages capacity building, innovative financing mechanisms, institutional coordination, private sector participation and public awareness and cooperation.

viii. MoHUA has formulated a National Transit Oriented Development (TOD) Policy in May 2017. The objective of this policy is to encourage compact mixed land use, which reduces the need for travel and improve access to public transport within walkable distance of transit stations. City specific strategies and mechanisms are to be framed by the respective Cities/ States for implementation of TOD.

ix. In order to create an ecosystem for enhancement of metro rail network in the country, MoHUA has also formulated the Metro Rail Policy, 2017. As per the Metro Rail Policy, 2017 respective State Government/Union Territory (UT) is responsible for initiating metro rail projects. The Central Govt. considers financial assistance for such projects in cities or urban

agglomerates, based on feasibility of the proposal and availability of resources, as and when posed by the concerned State Government/ UT Govt. policy bridges the much-needed gap for ascertaining and enhancing the feasibility of metro rail projects from economic, social and environmental perspective. In the Metro Rail Policy, 2017, it has been made mandatory for State Governments to include feeder system and multi modal integration in proposals of Metro Rail seeking Central assistance.

x. Under the Urban Transport Planning and Capacity Building Scheme, this Ministry provides financial assistance up to for taking up Traffic and Transportation Studies, feasibility studies, Comprehensive Mobility Plan (CMP), preparation of DPR for Mass Rapid Transit System (NIR'IS)/ Light Rail Transit System (LRTS), which are Initiated by the State (Governments/Union Territories/Urban Local Bodies (limited to 50% in case of MRTS).

xi. A project named "Efficient and Sustainable City Bus Service (ESCBS)" supported by the World Bank is under implementation in 4 Cities viz. Bhopal, Chandigarh, Jaipur and Mira Bhayandar. The objectives of the project are (i)strengthening capacity of urban bus service institutions through capacity building and training programmes and (ii) assisted cities in preparing and implementing demonstration "City Bus Modernisation Projects" and provided technical assistance in ITS/ MIS, enhancing fuel efficiency, route and business planning.

xii. To assist the States/ Urban Local Bodies, also extended central assistance for creation Of Bus Rapid Transit System (BRTS) corridors. Presently, a total of about 450 km length is operational in 11 cities and about 200 km length in 2 other cities are under construction across the country.

ix. This Ministry has given financial assistance in development of Metro Rail projects in cities in the country. With the impetus of Government on proliferation of metro system in country, about 860 km of metro rail lines are operational in 20 cities and about 1,000 km (including 82 km Delhi-Meerut Regional Rapid Transit System (RRTS)) are under construction in various cities namely Delhi, Gurugram, Mumbai, Kolkata, Bangalore, Chennai, Kochi, Nagpur, Ahmedabad, Pune, Gandhinagar, Navi Mumbai, Patna, Surat, Agra, Kanpur, Meerut, Bhopal and Indore etc.

x. The Government has taken initiative to provide faster connectivity with the satellite cities around Delhi falling within the jurisdiction of National Capital Region through construction of RRTS corridors. The first RRTS corridor of 82 km length between Delhi & Meerut at estimated cost of Rs.30,274 Crore is under implementation.

Under AMRUT Mission so far, 3,423 MLD sewage treatment capacity and 1,437 MLD recycle /reuse capacity has been developed. 99 lakh conventional streetlights have been replaced with energy efficient LEDs. In addition to water supply and sewerage,

emphasis is given on developing infrastructure for Non-Motorised Transport (NMT). In non-motorised urban transport sector projects worth Rs. 626 crore have been completed, projects worth Rs. 384 crore are under implementation. Under Non-Motorised Transport, projects related to footpath/ walkways, sidewalks, foot over bridges facilities for non-motorised transport (such as bicycles) and multi-level parking's have been taken-up. A number of cities selected under the Smart Cities Mission are also implementing projects related to NMT and bike-sharing.

Recommendation - Para No. 29

The Committee note that Swachh Bharat Mission-Urban (SBM-U) was launched on 2nd October 2014 with the objective of inter alia elimination of open defecation, modern and scientific municipal solid waste management and capacity augmentation for Urban Local Bodies to be achieved in five years, i.e. 2nd October 2019. It also targeted to achieve 100 percent door-to-door collection and scientific management of municipal solid waste. The Committee feel that solid waste is one of the major components of urban pollution. The Committee note that a number of policy initiatives have been taken to encourage processing of waste to compost and waste to energy, mandatory use of plastics in road construction, and mandatory use of recycled construction and demolition waste in all construction projects. The Committee feel that waste to compost and waste to energy are very important for creation of sustainable habitats. The Committee find that 145 compost plants are currently functional in the Country while 150 plants are under construction. After construction of these plants, the total compost production will increase from 13.13 lakh tonnes to 33 lakh tonnes. The Committee recommend that the under construction plants should be expeditiously constructed and more cities should be brought under waste to compost plan. The Committee note that 511 MW of power can be produced from municipal solid waste. Currently seven plants are operational and 53 are being constructed. The Committee recommend that the construction of waste to energy plants should be closely monitored so that these plants are constructed without any delay. The Committee are concerned that there is no proper segregation of wastes before they are dumped on the dumpsites. With the increasing electronic waste, hospital waste content among waste, there is serious danger of emission of poisonous gases and diseases spreading from the dumpsites. The Committee, therefore, recommend that there should be proper segregation of waste at the source itself for which public awareness campaign is needed.”

Action Taken by the Ministry

Under SBM-U, 2199 compost plants are currently functional in the country with the designed capacity of 71,682 TPD. Plants with the designed capacity of 30,681 TPD has been approved under SBM-U 2.0 out of which 39 plants are under construction with 4,511 TPD designed capacity.

4. Currently, 9 Waste to Electricity plants are operational and 11 are under construction with a combined total designed capacity of 22,000 TPD and potential to generate 220 MW of power. Also, Action Plans for construction of Waste to Bio-CBG Plants of 5,515 TPD and MRF Facilities of capacity 32,432 TPD have been approved under SBM-IJ 2.0.

5. MoHUA is implementing the SBNI-U 2.0 fully in compliance with the notified Solid Waste Management Rules 2016, read together with other waste management rules, for which Additional Central Assistance is being provided to ULBs. The first step is segregation of waste at source for which ULBs are supported for carrying out regular IEC activities and Capacity Building activities for ULB staffs.

Recommendation - Para No. 31

As regards plastic waste, it is estimated that 15000 tonnes of plastic waste is generated every day in the Country. The plastic waste problem in urban areas has reached alarming proportions while the problem has also spread in rural areas, where, due to absence of any institution tasked for removing garbage, it is posing significant environmental and health challenges. As per data, 60 percent of all plastics in the Country is currently recycled, leaving 40 percent of 6000 tonnes/day being disposed in an unsafe manner. In urban as well as rural areas, there is no effective mechanism to segregate plastic waste, leading to compounding of problem as different plastic has different decomposition rates. In cities, there is another problem where disposable plates, glasses, etc. made of plastic/non-degradable materials are increasingly being used. Although plastic has been banned in several States, its implementation has left much to be desired. Increasing use of plastic bottles and bags in vulnerable mountain ecosystems cause environmental degradation in areas which are already stressed. The Committee, therefore, recommends that institutional mechanism may be set up in all the States to monitor the use of plastics, besides ensuring its proper segregation, recycling and disposal. While banning the use of plastic carry bags, bottles etc., it is utmost important to find the biodegradable alternatives through R&D. Above all, adequate steps need to be taken to spread awareness among people about the importance of proper segregation of plastic waste and avoiding the use of disposable materials to the maximum extent possible.

Action Taken by the Ministry

In this regard, MoHUA has already taken steps to generate and enhance awareness among public and State/ municipal authorities to restrict single use plastic usage.

Under SBNI, the annual Swachh Survekshan (Cleanliness Survey) assesses the ULBs on their implementation of PWM Rules.

Similarly, the Garbage free city Protocol for Star Rating Certification in SWNI also has assessments for prohibition of SUPs.

As per notification issued by on 12th August; regarding Plastic Waste Management Rules, 2021, has incorporated ban on use of Single Use Plastic bags and other items. 'Ibis is an important component in upcoming Swachh Survekshan 2022 and Star Rating Protocol for Garbage Free Cities (GFC) to encourage cities to prevent use of single use plastic.

Detailed Action Plan for phasing out Single Use Plastic (SUP) has been made by MoHUA and ULBs are taking action accordingly. 2127 ULBs/Cities have notified the Plastic ban.

Innovative SUP replacement efforts such as Bartan bhandars, Jhola centres-Thyla Banks, plastic plog runs, food-for plastic waste programmes etc. are also part of Swachh Survekshan indicators and IEC activities.

SBNI-U 2.0 will be implemented with a vision of achieving "Garbage Free" status for all cities. Under the Sustainable Solid Waste Management, greater emphasis will be on source segregation, complete Solid waste management with 100% waste processing with intensified focus on phased reduction on Single Use Plastic.

In SBNI-U 2.0, funding will be provided for setting up of dry waste (plastic waste) processing facilities such as MRFs, waste to electricity etc. for plastic waste management in all statutory towns.

Recommendation - Para No. 33

National Mission for Sustainable Agriculture

The Committee note that the mission aims at enhancing food security and protection of resources such as land, water, biodiversity and genetics, through developing strategies to make Indian agriculture more resilient to climate change such as development of new crop varieties resistant to thermal, fire, drought etc. The mission focuses on natural resource management, water use efficiency, horticulture, crop sector, seed, pest, disease and weed management, soil health management, farm mechanisation, conservation, precision farming, agriculture-supply chain management, safety net, credit, access to information, research & development, capacity building and livestock and fisheries. Although the mission document mentions different aspects of agriculture, the crucial element of giving income security to farmers is missing. The crop insurance scheme and the MSP scheme implemented by the Government is not able to make farming remunerative for farmers. The Committee recommend that these elements be taken into consideration by the Government and they be apprised of the steps taken in this regard.

Action Taken by the Ministry

- The National Mission for Sustainable Agriculture (NMSA) aims at transforming Indian agriculture into an ecologically sustainable climate resilient production system, while ensuring food security, employment and livelihood opportunities in rural areas. Following eleven key priority areas have been identified for programmatic interventions under the revised Mission document which can minimize the impact of climatic change and reduce the risk:
 - (i) Climate Ready Crops, Varieties and Resilient Practices
 - (ii) Enhancing Resilience in Livestock and Fisheries
 - (iii) Improving Water Productivity
 - (iv) Pest Surveillance, Forewarning and Management
 - (v) Soil Health and Nutrient Management
 - (vi) Energy Management and Farm Mechanization
 - (vii) Agri-by products Management
 - (viii) Insurance and Risk Management
 - (ix) Strengthening Value Chain
 - (x) Integrated Farming System (IFS) and Agroforestry, including Bamboo
 - (xi) Organic farming

The Mission builds on the on-going schemes of the Ministry of Agriculture and Farmers Welfare and also leverages related interventions from other Missions.

- The Central Government has started a new Central Sector Scheme, namely, the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) with a view to provide income support to cultivable land holding farmers' families across the country to enable them to take care of expenses related to agriculture and allied activities as well as domestic needs. The measure also protects them from falling in debt traps for meeting such expenses and to ensure their continuance in the farming activities. Under the Scheme an amount of Rs.6000/- per year is transferred in three 4-monthly installments of Rs.2000/- directly into the bank accounts of the farmers, subject to certain exclusion criteria relating to higher income status. The Scheme was formally launched on 24th February, 2019 and is effective from 1.12.2018. As on 6.3.2020, on the basis of the data of beneficiaries provided by the State/UT Governments, 8,64,27,626 beneficiaries have been given financial benefit under the scheme.
- With a view to provide social security to Small and Marginal Farmers in their old age when they have no means of livelihood and minimal or no savings to take care of their expenses, the Government has started the Pradhan Mantri Kisan Maan Dhan Yojana (PM-KMY). Under this scheme, a minimum fixed pension of Rs. 3,000/- will be provided to the small and marginal farmers, subject to certain exclusion criteria, on attaining the age of 60 years. The measure would also provide financial support to the farmers as they continue in the farming activities in the old age. It is a voluntary and contributory pension scheme, with entry age

of 18 to 40 years. The farmer is required to contribute to a Pension Fund between Rs.55 to Rs.200 per month depending on the entry age. The Central Government also contributes in equal amount to the Pension Fund. The Pension Fund is being managed by the Life Insurance Corporation of India (LIC). The Scheme was formally launched on 12th September, 2019. So far (as on 9.3.2020), 19,95,177 farmers have registered for the Scheme.

- Insurance is an important element of any risk management strategy. To provide crop insurance to the farmers, the Government of India launched the flagship scheme, Pradhan Mantri Fasal Bima Yojana (PMFBY) & Restructured Weather Based Crop Insurance (RWBCIS) in 2016 on the theme of One-Nation-One-Scheme. PMFBY supports sustainable production in agriculture by providing financial support to farmers suffering crop loss/damage arising out of non preventable natural calamities. The Scheme is the first largest crop insurance scheme in the world in terms of farmers participation and third in terms of Gross premium. PMFBY is implemented in 27 States and Union Territories in India in one or more seasons and envisages to cover maximum number of farmers under the ambit of crop insurance. It is a multi-stakeholder scheme which has Central Government, 27 State Governments/UTs, 540 Banks and its branches, numerous other financial institutions, 19 empanelled General Insurance Companies and about 2.25 lakh Common Service Centres as stakeholders.

The scheme provides financial support to farmers suffering crop loss/damage arising out of unforeseen events. PMFBY is yield-based insurance that uses crop cutting experiments (CCEs) to determine the yield lost by farmers due to natural catastrophes and adverse weather conditions. The yield obtained through the CCEs determine the pay-out made by the insurance firm to the farmers. RWBCIS aims to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss resulting from weather conditions including fluctuation in rainfall, temperature, wind, humidity etc. RWBCIS seeks to provide insurance claim to farmers on the basis of observed weather data that are directly relevant to the agriculture. Nationwide, there are more than 10,000 Automatic Weather Stations (AWS) under the ambit of Government and private sector, from where the weather data is made available for the claim calculation under RWBCIS.

The budget allocation for the scheme has increased since 2016-17. Details of fund allocation and utilized under the PMFBY scheme are given below:

Rs. In crores

Year	B.E.	R.E.	Actual
2016-17	5501.15	13240.04	11054.63

2017-18	9000.75	10701.26	3419.79
2018-19	13014.45	12983.1	11945.3886
2019-20	14000.00	13640.85	12138.44
2020-21			

In 2017-18, 532.7 lakhs farmers have been enrolled under PMFBY/RWBCIS over an area of 507.7 lakhs hectares. In 2018-19, the number of farmers enrolled has increased to 577.2 lakh and the area insured to 525.8 lakh hectares. In 2019-20, 612.9 lakhs farmers have been enrolled under PMFBY/RWBCIS over an area of 500.3 lakhs hectares. In 2016-17, the claim amounting to 16,809 Crores was paid to eligible insured farmers with an average claim ratio of 78% and in 2017-18, claim paid is 22,118 crores with claim ratio of 89% and 2018-19, the claim paid is 28,119 crores with claim ration of 101% and in 2019-20 claim paid is 25,817 crores with claim ratio of 84%. Claims for 2020-21 is under calculation as the season is going on.

To make the PMFBY & RWBCIS further farmer friendly and to address the existing challenges in implementation, Cabinet of Gol approved revamping of these Crop Insurance Schemes on 19 February 2020 to be implemented from Kharif 2020 season throughout the country. The revamped PMFBY proposed to extensive use Technology solutions like Smart Sampling Techniques (SST) and optimization of number of CCE to ensure early settlement of claims in a transparent manner. However, enrolment under the Scheme has been made voluntary for all farmers for both Crop Insurance Schemes. Under the revamped PMFBY/RWBCIS, flexibility has been offered to the States/UTs to implement the Scheme with option to select any or many of the additional risk covers/features like prevented sowing, localized calamity, mid-season adversity and post-harvest losses. Further, States/UTs can offer specific single peril risk/insurance covers like hailstorm, etc, under PMFBY even with or without opting for base cover for both the Crop Insurance Schemes. Detailed guidelines on the revamped PMFBY/RWBCIS is under process by Government of India.

- Based on the Union Budget Announcement of 2018-19, to ensure remunerative prices to farmers for their produce, the Government of India has launched an umbrella cheme 'Pradhan Mantri Annadata Aay SanraksHan Abhiyan' (PM-AASHA) in September 2018 comprising of erstwhile Price Support Scheme (PSS) with some modifications for pulses, oilseeds and copra, Price Deficiency Payment Scheme (PDPS) & pilot of Private Procurement & Stockist Scheme (PPSS) for oilseeds. These schemes are implemented by DAC&FW, Ministry of Agriculture & Farmers Welfare on the request of the concerned States/ UTs governments when a market price dips below MSP. All the States/UT governments have been offered a bouquet of PSS and PDPS, with a flexibility to

choose either of them in a given procurement season with respect to a particular oilseed crop for the entire State. The pulses & copra will be procured under PSS. Further, States have the option to roll out Private Procurement Stockist Scheme (PPSS) on pilot basis in district/selected APMC(s) of district involving the participation of private stockist.

Further, under PM-AASHA, procurement for paddy, wheat and coarse grains are undertaken by Department of Food & Public Distribution (DFPD) through Food Corporation of India (FCI).

Previously ongoing Price Support Scheme (PSS) has been incorporated under PM-AASHA. Under PSS, only 7.24 lakh metric tones of oilseeds and pulses were procured from the year 2009 to 2014. From 2014 to 2019, 93.42 lakh metric tones of pulses and oilseeds have been procured in PSS at MSP. During the year 2019-20 (upto 04.03.2020), under PSS, 31.28 lakh metric tons of oilseeds and pulses and copra have been procured. Additional procurement of Pulses of 13.67 lakh metric tons of pulses at MSP has also been done under Price Stabilization Fund (PSF) for maintenance of National Buffer Stock by Department of Consumer Affairs during 2015-16 to 2017-18. Apart from this, 16.82 lakh metric tonnes of soybeans have been procured under PDPS in Madhya Pradesh in 2018. Thus, the procurement from 2014-15 to 2019-2020 (as on 04.03.2019) 155 lakh tonnes of oilseeds, pulses and copra have been procured.

Not only MSP is increased by the Govt. but it is also ensured that the benefit of increased MSP has reached to the farmers.

- The restructured National Bamboo Mission (NBM) is operational from the year 2018-19. NBM focuses on the development of complete value chain of bamboo sector to link growers with consumers starting from planting material, plantation, creation of facilities for collection, aggregation, processing marketing, micro, small & medium enterprises, skill development and brand building initiative in a cluster approach mode.
- The objectives of the NBM include increasing the area under bamboo plantation in non forest Government and private lands to supplement farm income and contribute towards resilience to climate change as well as availability of quality raw material requirement of industries. The bamboo plantations are promoted in non-forest land predominantly in farmers' fields, homesteads, community lands, arable wastelands, and along irrigation canals, water bodies etc. This will help to enhance farmers' income.
- The scheme is being implemented in the States where it has social, commercial and economical advantage, including the bamboo rich States of North Eastern region and in Madhya Pradesh, Maharashtra, Chhattisgarh, Odisha, Karnataka, Uttarakhand, Bihar, Jharkhand, Andhra Pradesh, Telangana, Gujarat, Tamil

Nadu, Kerala, Uttar Pradesh & Himachal Pradesh. Union Territory of Jammu & Kashmir is also included under NBM in the year 2020-21.

- The scheme is being implemented as Centrally Sponsored Scheme. The funding pattern is 60:40 between Centre and State Govt. for all States excepting NE & Hilly states, where it is 90:10 and 100% in case of Union Territories/ R&D institutes/ Bamboo Technology support Groups (BTSGs) and National Level Agencies. To achieve the objectives many activities have been undertaken during 2018-19 to 2020-21 under the restructured National Bamboo Mission. As on 30.06.2021, an area of 21388 ha has been covered under bamboo plantation along with creation of 364 nurseries, 71 bamboo treatment units, 323 product development / processing units, 89 infrastructure projects for promotion and development of bamboo markets. 11351 nos. of persons have been trained and 217 workshops/ seminars/ trade fairs/exhibitions have been organized under the restructured National Bamboo Mission.

Recommendation - Para No. 34

The Committee note that one component of the mission is soil health management through promoting organic farming. Farming with the aid of chemical fertilizers is one of the contributor of climate change. Such farming also causes degradation of soil, water as well as farmers. The Committee have been informed that although per capita consumption of pesticides is lowest in India (at 0.6kg/ha), many pesticides are applied without following the minimal safety measures leading to health risks, soil water and air pollution. Further, the usage of pesticides is highly concentrated in irrigated cultivation zones of the Country. The Committee also note that among other things, the mission has brought 18.70 lakh hectare of area under organic farming. The Committee have been informed that organic farming has been taken up at a large scale in various States of the country, most notably in Andhra Pradesh. Besides, as reported in the media, Sikkim became India's first 100 percent organic State in January, 2016. The Committee feel that organic farming needs to be further encouraged as chemical fertilizer based farming contribute 50 percent of the greenhouse gases (GHG). Organic farming can provide 100 percent solution to the build-up of GHG in the atmosphere and use of organic matter also increases the water retention capacity of the soil. The Committee have also taken note of the fact that the productivity in organic farming is not less than that achieved through chemical farming. Moreover, the Committee have been informed that under Paramparagat Krishi Vikas Yojana (PKVY), a subsidy of ₹25,000 per hectare is given to the farmers to support them for moving from inorganic to organic farming over a period of three years. However, it is not a subsidy on par with that given for chemical fertilizers. The Committee feel that this amount is not sufficient and needs to be suitably increased to give more incentive to organic farmers. Similarly, the subsidy given on chemical fertilizers need to be progressively decreased as such a subsidy is like providing incentives for soil, health and climate degradation. The Committee have also noted that the Department of Fertilizers is encouraging use of

city compost by providing Market Development Assistance of ₹1500/metric tonne. This amount also needs to be increased. The Committee also recommend that immediate steps be taken to increase the coverage under organic farming in all the States.

Action Taken by the Ministry

- Government of India has been promoting Integrated Nutrient Management (INM) i.e., soil test based balanced and judicious use of fertilizers (chemical, bio-fertilizers, organic manures like Farm Yard Manure, compost, vermicompost, green manure, etc.) to maintain soil health and its productivity through Soil Health Card Scheme. Govt is also educating farmers through demonstrations, melas, trainings, etc.
- To increase the usage of biological and organic inputs as substitute to chemical fertilizers, the Ministry is also implementing a scheme -Capital Subsidy Investment Subsidy Scheme (CISS) under National Project of organic Farming for setting of bio and organic input units. Under CISS, financial assistance is provided for setting up of State of art liquid/ carrier based Bio-fertilizer units of 200 Ton Per Annum (TPA) capacity; 100% assistance to State Govt./ Govt. Agencies up to a maximum limit of Rs.160.00 lakh/ unit and for individuals/ private agencies assistance up to 25% of cost limited to Rs.40 lakh/unit as capital investment is provided through NABARD. State-wise total number of Biofertilizer / Biopesticides / Fruit and vegetable compost production units sanctioned through NABARD is given at Annexure II and state wise setting up of liquid/carrier based bio- fertilizer production unit under Soil Health Management under soil health management scheme is given at Annexure III. In addition, use of organic/ bio fertilisers and biopesticides has been promoted under organic farming schemes of Paramparagat Krishi Vikas Yojana (PKVY) and Mission Organic Value Chain Development in North East Region (MOVCDNER) by providing incentives to the farmers.
- Ministry of Agriculture & Farmers Welfare is implementing 'Sub-Mission on Plant Protection and Plant Quarantine' Scheme, under which Integrated Pest Management approach is being promoted to educate the farmers about judicious use of chemical pesticides and to recommend use as per the directions prescribed on the label and leaflets. Integrated Pest Management seeks to promote cultural, mechanical, biological methods of pest control and orients the farmers about judicious use of pesticides. During the last 5 years (2016-17 to 2020-21), 3271 Farmer Field Schools and 570 Human Resource Development programs were conducted under Integrated Pest Management and 98,470 farmers and 22,880 pesticide dealers and State Extension officials and master trainers have been trained. 35 Central Integrated Pest Management Centres (CIPICMs) across [MV1] the country are established. The CIPICMs, inter alia, release bio-control agents in the fields, conducts Farmer Fields Schools and organizes IPM orientation programmes.

- Realizing the potential of organic farming Government is promoting organic farming through two dedicated schemes, namely Mission Organic Value Chain Development for North Eastern Region and Paramparagat Krishi Vikas Yojna (PKVY) since 2015-16.
- Under MOVCDNER organic farming is being promoted in value chain mode with assistance from production, postharvest handling, value addition and processing and handholding support for marketing. Entire scheme is promoted in FPO/FPC mode with post harvest infrastructure under farmers own institutions. An incentive of Rs.25000 / ha is provided under MOVCDNER for on farm and off- farm inputs preparation/ procurement. Area under the scheme is certified under third party and niche commodities are being targeted for export markets.
- Under PKVY scheme assistance of Rs. 50,000 per hectare/ 3 years is given out of which Rs. 31,000/- is provided to farmers directly through DBT for inputs (biofertilizers, biopesticides, vermicompost, botanical extracts etc). Besides this farmers through clusters are also facilitated with PGS certification and are supported for market facilitation.
- Government of India has been organic farming under various scheme), Paramparagat Krishi Vikas Yojana (PKVY). Under the PKVY scheme assistance of Rs 50,000 per hectare/ 3 years is given, out of which Rs. 31,000 (62%) is provided to the farmers directly through DBT, for inputs (bio-fertilizers, biopesticides, vermicompost, botanical extracts etc) production/ procurement, post harvest management etc. An incentive of Rs 25000/ ha is provided under MOVCDNER for on farm and off- farm inputs preparation/ procurement.

In general, Integrated Nutrient Management has been promoted through Soil Health card Programme to promote judicious use of fertilisers. Moreover, organic farming schemes aim at promotion of non-chemical farming in the country that improves soil health as well as environmental and human health.

- Participatory Guarantee System (PGS) certified organic production is promoted under PKVY for domestic markets while MOVCDNER aims at 3rd party certified production of niche crops of north east region for exports. Third party certification of organic farming is promoted by Agriculture Processed Food and Export Development Authority (APEDA), Ministry of Commerce.
- Due to these efforts the area under organic farming is on rise. As on March 2019 the area under organic farming is 27.7 lakh ha. As per next 5 years vision document Government proposes to bring another 25 lakh ha area under organic farming by 2024. State-wise details of area covered (certified and under conversion) under Organic farming is at Annexure-IV.

Recommendation - Para No. 35

The Committee in their 22nd Report (16th Lok Sabha) had recommended that the Government should come out with a comprehensive and well defined strategy on organic farming to which the Government in the action taken note had stated that the comprehensive definition will be adopted in the policy on organic farming/organic farm produce. The Committee would again like to emphasise to bring uniformity in the meaning and definition of 'Organic Farming/Organic Farm Produce' to avoid any legal hurdle in domestic consumption and international trade promotion and would urge the Government to take immediate and urgent action in this regard.

Action Taken by the Ministry

- The issue of the new definition of the organic farming was discussed during the Task Force Meeting chaired by Dr. A.K. Singh, Vice-Chancellor, Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya, Gwalior and as agreed by the Task Force, the definition was framed which is as under:

“Organic Agriculture is a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. This is accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic offfarm inputs.”

- Recently the definition of organic food has been defined in Food Safety and Standards (Organic Foods) Regulations, 2017 under Food Safety and Standards Act (2006) which states that “Organic food” means food products that have been produced in accordance with specified standards for organic food production. The standards covered under these rules are National Programme for Organic Production operated by Ministry of Commerce and Industry and PGS-India operated by Ministry of Agriculture & Farmers Welfare.

Recommendation - Para No. 37

The Committee feel that the Mission lacks in giving focus to the farmers while taking initiatives for sustainable agriculture. Agriculture as a sustainable occupation can survive only after the farmers are given chance to sustain themselves. For this, they need to have access to better seeds, best practices in farming and support from the Government to cover farming risk. In this regard, the Pradhan Mantri Fasal Bima Yojana (PMFBY) was launched by the Government in 2016. It is a yield-based insurance that uses crop-cutting experiments (CCEs) to determine the yield lost by farmers due to natural catastrophes and adverse weather conditions. The yield obtained through the CCE's determine the payout made by the insurance firm to the

farmer. The PMFBY improves on other existing schemes by removing caps on the premiums and making use of modern technology. However, the Committee also note that the scheme suffers from several problems such as the delay in crop cutting experiments and its associated high costs, delayed/non-payment of insurance claims to farmers and lack of transparency. As a result, farmers lose interest in the crop insurance schemes. Another problem relating to crop insurance schemes in India is coverage. The PMFBY states that overall area insured has decreased over the last 2 years (from 53.7 million hectare in 2015-16 and 57.2 million hectare in 2016-17 to 47.5 million hectare in 2017-18). This is less than 24 percent of the gross cropped area (against a target of 40percent) as compared to 89 percent in the US and 69 percent in China. There is another insurance scheme which is called Weather Based Crop Insurance Scheme (WBCIS) which aims to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss resulting from weather conditions including fluctuation in rainfall, temperature, wind, humidity etc. This scheme seeks to provide insurance claim to farmers on the basis of observed weather data that are directly relevant to the agriculture. The problem with this scheme is that number of automatic weather stations in the Country is very less. As against the requirement of 33000 AWS, there are only 706 AWS operational currently. In spite of its advantages, the coverage under WBICS has declined from 11.25 million in 2014-15 to a little over 2.1 million in 2016-17. In order to increase coverage, it is necessary for the Government to effectively communicate to the farmers the value of insurance products. Also, adequate financial investment for installation for more AWS is needed. The Committee, therefore, recommend that adequate financial allocation should be made so that the crop insurance schemes attract participation from greater number of farmers. The Committee also recommend that agricultural insurance scheme should be reformulated in order to suit the needs of farmers who engage in organic farming. Multicropping system also which is the very basis of organic farming should also be included under the insurance schemes.

Action Taken by the Ministry

- The Central Government has started a new Central Sector Scheme, namely, the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) with a view to provide income support to cultivable land holding farmers' families across the country to enable them to take care of expenses related to agriculture and allied activities as well as domestic needs. The measure also protects them from falling in debt traps for meeting such expenses and to ensure their continuance in the farming activities. Under the Scheme an amount of Rs.6000/- per year is transferred in three 4-monthly installments of Rs.2000/- directly into the bank accounts of the farmers, subject to certain exclusion criteria relating to higher income status. The Scheme was formally launched on 24th February, 2019 and is effective from 1.12.2018. As on 6.3.2020, on the basis of the data of beneficiaries provided by the State/UT Governments, 8,64,27,626 beneficiaries have been given financial benefit under the scheme.

- With a view to provide social security to Small and Marginal Farmers in their old age when they have no means of livelihood and minimal or no savings to take care of their expenses, the Government has started the Pradhan Mantri Kisan Maan Dhan Yojana (PM-KMY). Under this scheme, a minimum fixed pension of Rs.3,000/- will be provided to the small and marginal farmers, subject to certain exclusion criteria, on attaining the age of 60 years. The measure would also provide financial support to the farmers as they continue in the farming activities in the old age. It is a voluntary and contributory pension scheme, with entry age of 18 to 40 years. The farmer is required to contribute to a Pension Fund between Rs.55 to Rs.200 per month depending on the entry age. The Central Government also contributes in equal amount to the Pension Fund. The Pension Fund is being managed by the Life Insurance Corporation of India (LIC). The Scheme was formally launched on 12th September, 2019. So far (as on 9.3.2020), 19,95,177 farmers have registered for the Scheme.
- Insurance is an important element of any risk management strategy. To provide crop insurance to the farmers, the Government of India launched the flagship scheme, Pradhan Mantri Fasal Bima Yojana (PMFBY) & Restructured Weather Based Crop Insurance (RWBCIS) in 2016 on the theme of One-Nation-One-Scheme. PMFBY supports sustainable production in agriculture by providing financial support to farmers suffering crop loss/damage arising out of non preventable natural calamities. The Scheme is the first largest crop insurance scheme in the world in terms of farmers participation and third in terms of Gross premium. PMFBY is currently implemented in 27 States and Union Territories in India and envisages to cover maximum number of farmers under the ambit of crop insurance. It is a multistakeholder scheme which has Central Government, 27 State Governments/UTs, 540 Banks and its branches, numerous other financial institutions, 18 empanelled General Insurance Companies and about 2.25 lakh Common Service Centres as stakeholders.

The scheme provides financial support to farmers suffering crop loss/damage arising out of unforeseen events. PMFBY is yield-based insurance that uses cropcutting experiments (CCEs) to determine the yield lost by farmers due to natural catastrophes and adverse weather conditions. The yield obtained through the CCEs determine the pay-out made by the insurance firm to the farmers. RWBCIS aims to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss resulting from weather conditions including fluctuation in rainfall, temperature, wind, humidity etc. RWBICS seeks to provide insurance claim to farmers on the basis of observed weather data that are directly relevant to the agriculture. Nationwide, there are more than 10,000 Automatic Weather Stations (AWS) under the ambit

of Government and private sector, from where the weather data is made available for the claim calculation under RWBCIS.

The budget allocation for the scheme has increased since 2016-17. Details of fund allocation and utilized under the PMFBY scheme are given below:

Rs. Incrores

Year	B.E.	R.E.	Actual
2016-17	5501.15	13240.04	11054.63
2017-18	9000.75	10701.26	3419.79
2018-19	13014.45	12983.1	11945.3886
2019-20	14000.00	13640.85	12138.44
2020-21			

In 2017-18, 530.4 lakhs farmers have been enrolled under PMFBY/RWBCIS over an area of 515 lakhs hectares. In 2018-19, the number of farmers enrolled has increased to 568.5 lakh and the area insured is 587.9 lakh hectares. The coverage under the scheme is expected to increase in 2019-20. In 2016-17, the claim amounting to 17,833 Crores was paid to eligible insured farmers with an average claim ratio of 81% and in 2017-18, claim paid is 22,315 crores with claim ratio of 88% and 2018-19, the claim paid is 20,008 crores with claim ration of 78% and the claim of 2019-20 is under calculation as the season is going on.

- To make the PMFBY & RWBCIS further farmer friendly and to address the existing challenges in implementation, Cabinet of Gol approved revamping of these Crop Insurance Schemes on 19 February 2020 to be implemented from Kharif 2020 season throughout the country. The revamped PMFBY proposed to extensive use Technology solutions like Smart Sampling Techniques (SST) and optimization of number of CCE to ensure early settlement of claims in a transparent manner. However, enrolment under the Scheme has been made voluntary for all farmers for both Crop Insurance Schemes. Under the revamped PMFBY/RWBCIS, flexibility has been offered to the States/UTs to implement the Scheme with option to select any or many of the additional risk covers/features like prevented sowing, localized calamity, mid-season adversity and post-harvest losses. Further, States/UTs can offer specific single peril risk/insurance covers like hailstrom etc, under PMFBY even with or without opting for base cover for both the Crop Insurance Schemes. Detailed guidelines on the revamped PMFBY/RWBCIS is under process by Government of India.

Recommendation - Para No. 38

The Committee observe that India had the culture of saving part of the crops as seeds but over the years this traditional system has been taken over by a big market of seeds where MNCs are selling their seeds at high prices thereby increasing the cost of agriculture. Not only that seeds sold by MNCs are often untested in local conditions, consume more water and are vulnerable to failures. The Committee further note that our country has rich variety of indigenous seeds and traditional Indian system of water and agriculture seeds which need to be encouraged to address the issue of availability and quality of seeds. The use of our traditional system besides being eco-friendly would reduce the input cost by saving money spent on purchasing seeds and saving of water. The traditional seeds which were climate resilient and less water guzzling should, therefore, be traced, developed and preserved

Action Taken by the Ministry

Role of Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA) in tracing, improving and enabling access of traditional varieties conserved by farmers in the ambit of Farmers' Rights and Benefit sharing under the Protection of Plant Varieties and Farmers' Rights Act (2001):

- (i) Conduct of Awareness Campaigns Among Farmers in the Country on Farmers' Varieties, Protection and Conservation: Each year between 100-120 awareness campaigns have been conducted in all parts of the country among which at least five each year are for farmers from multi-states in a region, purely on letting the farmers know of their rights and claims to make on benefit sharing when they come to know about any of their conserved varieties of any crop being used in breeding programs by public or private sector, or whenever it comes to their notice if any specific trait which they know historically as occurring only in a traditional variety or species conserved by the community in any commercially sold variety by a public or private sector.

So far 1817 **awareness programmes** have been conducted for the last 10 years and **more than 1.4 lakh farmers** were trained and made aware about the various provisions of the Act.

- (ii) Protection of Farmers' Varieties involving State Governments, Central Government Agencies and Awarding Rights to Communities or Farmers on Farmers' Varieties for Commercialization and Trade: The Authority has publicised and participated regularly in conducting trainings, campaigns on the value of traditional varieties and the utility of obtaining rights of ownership by communities or individual farmers who have been able to

make selections of different variant forms within the traditional varieties so that they can trade commercially with those varieties or their genes/characters if other plant breeders would like to make use of these traits or genes. The Rights which are given to farmers are Rights to produce, sell, market, distribute, import and export exclusively, in addition to the normal Farmers' Rights which are to save, use, sow, re-sow, exchange, share, and sell their farm produce as seed without branding. Both these are 'Unique only to Indian Farmers' in IPRs on plant varieties and their usage. So far more than 64% of the total applications for protection of varieties in India comprises of the Farmers' Varieties with extraordinary focus.

Table: No. of Farmers' Varieties Protected in India since 2008 as on March 4, 2020

Category	No. of Applications Received	No. of Varieties Granted Protection
Public Variety	2143	1391
Private	3971	1313
Farmers	11114(64.51% of the total)	1834(40.41% total granted)
Total	17228	453

- It has been decided by the Authority to notify all public institutions to encourage local farmers or communities in their jurisdiction to have their traditional materials enumerated, characterized, purified, and source-authenticated by growing the material under expert supervision of one of the State Govt. or Central Govt. organization at least for the season. This has been done by issuing Public Notice No.12 of 2020. In order to widen the registration of farmers varieties, and it should not be struck up due to non-notification of crop species it was decided by the Authority that even if the species concerned is yet not notified or its DUS guidelines yet not developed by the Authority, the SAU/CAU/ICAR/CSIR Institutes have been directed to ensure that every available heritage plant genetic material in the form of landraces or local traditional variety is brought on record and registered at this Authority under their facilitation. Further, a landrace or a local material used historically in a given rural area is expected to be owned by the entire community which may be represented by a tribe, a commune, a village or a group of village. In this regard, the PPV&FR Authority have issued Public Notice No. 13 of 2020 and further has also communicated vide letter No. PPV&FR/PS-2/2018/757 to 813 dated 20.10.2020 to all Vice-Chancellors of all SAUs/CAUs and to all State Government vide letter No. PPV&FR/PS-2/2018/867A to 896A dated 12.02.2021. Further to ensure that new and extant varieties filed for registration are free from Pest and Diseases, Public Notice No.8 of 2021 has been issued regarding minimum seed quality standards to be as per

Seeds Act, 1966 and Pest and Disease free Certification from National Agency. In this regard, a D.O. letter No. PPV&FRA/PS-2/2018/740 dated 25th February, 2020 has been issued and Public Notice No. 20 of 2019 has been issued fixing the criteria of DUS for Extant Notified Varieties under Section 5 of Seeds Act, 1966.

- The activities of the Authority relating to documentation and characterization of farmers varieties are as follows:-

1. Around 332 farmer's varieties of Maize, Millets, Pulses and Vegetables from Vindhyan Region of Eastern Uttar Pradesh have been collected documented and characterized and applied for registration and the process is under progress. The Authority has sanctioned and released Rs. 27,00,000/- for the purpose of purification and characterisation of Farmer's varieties.
2. Around 21 farmer's varieties of Pulses, Vegetables and Cereals from Konkan region of Maharashtra have been collected, characterised and 8 farmer's varieties were filed for registration at PPV&FRA. The certificate of 3 farmer's varieties were granted. The Authority has sanctioned and released Rs. 22,54,964/- for the purpose of purification and charactersation of Farmer's varieties.
3. From North hilly region of Chhattisgarh 1715 farmer's varieties which include 778 unique rice and several vegetable crops, millet, pulses, oilseeds and cereals are documented and characterised and applied for registration at PPV&FRA, New Delhi. Around 100 certificate has been issued by the Authority. The Authority has released Rs. 17,49,585/- for the purpose of purification and charactersation of Farmer's varieties.
4. A total of 56 farmer's varieties of Minor Seed Spices (Ajwain, Nigella, Dill and Anise) from North Eastern plain zone of Uttar Pradesh were characterize and Authority has funded Rs. 09.00 Lakh.
5. From the State of Karnataka traditional varieties of rice, vegetable, millets and Oilseeds were conserved and maintained by farmers were collected and characterised and submitted for registration at PPV&FRA, New Delhi in the year 2020. The Authority has released Rs. 19,73,492/- for the purpose of charactersation of Farmer's varieties.
6. Traditional varieties and landraces of around 60 crop species covering cereals, Pulses and Vegetables, Oilseeds, fruits, flower crops and medicinally important crops were collected from Bihar. After documentation and characterisation 710 farmer's varieties were applied for registration at PPV&FRA, New Delhi for which Authority has release Rs. 3,74,403/-.

7. From Kashmir valley 50 landraces of Maize conserve by farmers were characterize and applied for registration at PPV&FRA, New Delhi for which Authority has release Rs. 13,50,000/-).
8. 8. A total of 15 farmer's varieties were collected from Northern Karnataka applied for registration at PPV&FRA, New Delhi. Financial assistance has been provided by the Authority.
9. 9. Around 15 durum wheat varieties from North Karanataka conserved by farmers is under characterization for which financial assistance has been provided by the Authority.
- 10.10. A pigeon pea variety submitted by a farmer from Maharashtra is purified and characterized by State Agriculture University is under the process of registration at PPV&FRA, New Delhi with the financial support of Authority.
- 11.11. For Non-notified crops species namely carrot from Gujarat and Velvet bean from Uttar Pradesh has conserved by the farmers since decades are under the process of characterisation and PPV&FRA, New Delhi has provided financial assistance of Rs. 3.00 Lakh each to the concerned institution.

(iii) **Establishment of Community Seed Bank and Maintenance in Farmer Communities:** The PPV&FR Act, 2001 was enacted on sui generis system, which provides the farmers rights and encourage the farmers those are engaged in preservation and conservation of traditional varieties and land races and allow them to register those varieties as farmers varieties. The Authority also encourage for establishment of community seed banks so that the seeds of the traditional varieties are made available to local farmers. The Authority encourages for establishment of community seed banks through SAUs and KVKs. Four community seed banks are at the moment being maintained in Prayagraj (Uttar Pradesh), Raipur (Chhattisgarh) , Dharwad & Vijayanagar (Karnataka).The Authority also encourages for *in situ* and *ex situ* conservation under Section 45 (2)(c) of PPV&FR Act, 2001.

(iv) **Establishment of Community Seed Bank and Maintenance in Farmer Communities:** The PPV&FR Act, 2001 was enacted on sui generis system, which provides the farmers rights and encourage the farmers those are engaged in preservation and conservation of traditional varieties and land races and allow them to register those varieties as farmers varieties. The Authority also encourage for establishment of community seed banks so that the seeds of the traditional varieties are made available to local farmers. The Authority encourages for establishment of community seed banks through SAUs and KVKs. Four community seed banks are at the moment being maintained in Prayagraj (Uttar Pradesh),

Raipur (Chhattisgarh) , Dharwad & Vijayanagar (Karnataka).The Authority also encourages for *in situ* and *ex situ* conservation under Section 45 (2)(c) of PPV&FR Act, 2001.

- (v) **Recognition of Farmer Communities and Farmers for Conserving and/or Preserving Traditional Varieties:** PPV&FR Act, 2001 is the only Act which confers Intellectual Property Rights (IPR) to farmers who have bred plant varieties. Farmers are exempted for the payment of any fee for registration under PPV&FR Act, 2001. The application for registration of Farmers' Varieties is contained in 6th Schedule of PPV&FR Rules, 2003 and the said application format is very simple and contains no technical questions. Farmers' Varieties are tested to determine DUS (Distinct, Uniform and Stable) criteria for one year at two locations. The DUS criteria for Farmers' Varieties are relaxed when compared to New Varieties and other Extant Varieties.

The PPV&FR Authority is the only body which confers 35 Awards to farmer(s)/farming communities amounting to a total of Rs.85 Lakhs every year. The Plant Genome Saviour Community Award is awarded to five farming communities and each Award amounts to Rs.10.00 lakhs along with citation and memento. The Plant Genome Saviour Farmer Reward is awarded to ten farmers and each Reward amounts to Rs.1.50 lakhs along with citation and memento. The Plant Genome Saviour Farmer Recognition is awarded to twenty farming communities and each Recognition amounts to Rs.1.00 lakh each along with citation and memento. During the last ten years, 138 farmers or farmers communities have been awarded the above at the cost of ` 390 lakhs by the Authority. The awardees as such receive an identity and visibility in being able to enhance the trade value and reach of their varieties.

- The Seed Division at the Ministry has suggested to States Governments to include drought, flood and salt tolerant varieties in State Seed Rolling Plan and Breeder Seed Indent to tackle the climate change condition as per ICAR. Accordingly, the States have reported the availability of short and medium duration varieties certified/quality seeds to tackle the climate change condition from last three years and current year is at **Annexure- VIII**. The availability of stress tolerant (flood, drought & salt) paddy varieties certified/quality seeds from last three years and current year is at **Annexure IX**.
- The **National Food Security Mission (NFSM)** programme is being implemented with the objective of increasing food grain production through area expansion and productivity enhancement in a sustainable manner in the identified districts across the country. The NFSM programme has included various interventions under different

foodgrain (rice/wheat/pulses/nutri-cum-coarse cereals) crops like demonstration of latest crop production and protection technology, distribution of HYVs/Hybrids, stress tolerant/climate resilient/bio-fortified varieties, INM & IPM techniques, improved farm machineries/tools, water saving devices and capacity building of farmers to fulfill the other objective of NFSM i.e., 'Enhancing farm level economy to restore confidence amongst the farmers. New initiatives like breeder seeds/certified seed production and seed hubs had been taken up under NFSM-Pulses and NFSMNutri Cereals. Awareness amongst farmers is also created on above interventions through trainings/meetings/workshops.

- A total of 67 seed banks are functional in NICRA villages, which caters the seed requirement on community basis within the village. These seed banks ensure availability of quality seeds in time with reasonable price ensuring spread of climate resilient varieties in the village.

Recommendation - Para No. 41

National Mission on Sustaining Himalayan Ecosystem (NMSHE)

The Committee note that the objective of NMSHE is to build S&T capacity to address sustenance of Himalayan ecosystem. To achieve its objective, the mission aims to understand the complex processes affecting Himalayan Ecosystem and evolve suitable management and policy measures for sustaining and safeguarding the Himalayan Ecosystem, assess the health status of the Himalayan ecosystem for policy formulation functions and assist states in the Indian Himalayan Region for implementation of actions for sustainable development. The Committee also note that under the mission, a Centre of Glaciology at Wadia Institute of Himalayan Geology, Dehradun has been set up. Moreover, 6 thematic task forces have been set up for detailed study of health status of Himalayan ecosystem and climate change centres in 11 out of 12 states. The task forces have been assigned to establish databases, design monitoring systems, developing modeling and simulations, undertaking vulnerability assessment, adaptation policy research and pilot studies for revalidation. Therefore, the focus of the mission is on creating infrastructure for understanding the Himalayan ecosystem. The Committee feel that any mission for gaining detailed knowledge about Himalayan ecosystem should not be confined to just one part of the Himalayan ecosystem. Himalaya is an international ecosystem encompassing countries such as Afghanistan, Pakistan, China, Bhutan, Nepal, Myanmar, Bangladesh, Vietnam in addition to India. The Committee feel that any effective action for sustenance of Himalayan ecosystem can be meaningful only if it covers all parts of Himalaya and for this reason such centres need to be opened in other countries also which are a part of Himalayan ecosystem. To make this happen, consultations with those countries need to be under taken and Climate Change centres of all these countries should work in tandem.

Action Taken by the Ministry

- DST is working in close coordination with the International Centre for Integrated Mountain Development (ICIMOD), Nepal which is an inter-governmental body serving the eight regional member countries namely Afghanistan, Pakistan, China, Bhutan, Nepal, Myanmar, Bangladesh, Vietnam of the Hindu Kush Himalayas engaged in regional corporation in the area of Himalayan Eco-system. In this regard, several workshops and deliberations have taken place wherein the scientists/ official implementing the National Mission on Sustaining the Himalayan Eco-system (NMSHE) have participated and interacted with scientists of some of these countries. As part of the another major initiative taken up by NITI Aayog with active participation of ICIMOD five working groups in different key strategic areas of Himalayan eco-system addressing sustainable development in the region was taken up in 2017. DST led one of this Working Group in the area of Himalayan Spring. The knowledge generated through these efforts was shared with the neighbouring countries that are part of ICIMOD. Efforts will be made to enhance the opportunities and collaboration in this regard.

Recommendation - Para No. 42

The Committee note that the assigned task to one of the thematic task forces is to compile traditional knowledge existing in the Himalayan region. The key objective of the programme is to develop a sound database on the Traditional Knowledge System (TKS) on the Indian Himalayan Region (IHR). The Committee also note that more than 170 out of total 701 indigenous groups of India inhabit the IHR and are repository of vast array of traditional knowledge. Further 50 groups have been identified for documenting TKS. The Committee further note that data has been created on different aspects of a variety of traditional farming systems, local innovative farming practices and natural resource based livelihood earning traditions of the identified communities. A number of community based organisations are also engaged in documentation of TKS at local level in the region. The Committee are of the view that preserving, documenting and compiling traditional knowledge in the Himalayan region is very important task as our existing education system does not lay adequate emphasis on traditional knowledge and there is a real danger of this knowledge disappearing. Moreover, traditional knowledge pertaining to farming, building houses, tackling weather extremities are of direct relevance in our fight against climate change as they are low energy low carbon solutions which we may apply today also with minimal changes. The Committee, therefore, recommend that the work relating to TKS should be expeditiously compiled and after compilation, they should be widely publicized and made a part of school and college curriculum.

Action Taken by the Ministry

- A thematic task force for mapping the traditional knowledge system has been set up under which nearly 60 local/indigenous groups living in different eco-cultural zones are selected for documentations of their traditional knowledge in integrated and focus manner. A rich data base is being created on the traditional utilization and conservation pattern of the Wild and Agriculture Bio-resources of the Selected Committee.
- A profile document of traditional knowledge system of 30 selected communities from the Indian Himalayan region has been recently published and widely circulated.

Recommendation - Para No. 43

The Committee are of the view that reckless and irresponsible tourism in the Himalayan Ecosystem is one of the major reasons for environmental degradation there. With the construction of roads and luxurious amenities for the tourists, the number of people visiting the Himalayan region have vastly increased which is increasing the pressure on the ecosystem. As a result of large number of visitors, the roads, the houses, the hotels and resorts - all of these have to be constructed by cutting mountains. Many of these constructions are not as per specification for mountains but are more inspired by plain areas. Moreover, the tourists visiting these areas are not sensitized to responsible and sustainable tourism and indulge in littering with plastic bottles and other non-biodegradable materials. The Committee, therefore, recommend, that public awareness campaigns for sensitizing people about vulnerability of Himalayan region and need for sustainable tourism may be undertaken by the Government.

Action Taken by the Ministry

- The issue of sustainable tourism is being dealt by Ministry of Tourism as part of the national initiative taken by NITI Aayog in 2017. A Working Group for sustainable tourism is being set up to look into various facets of issues including the public awareness campaign for sensitizing the people for vulnerability of Himalayas. A detailed report of the Working Group has been brought out.
- In addition, the vulnerability profiles and indexing/ ranking of the Himalayan States in IHR have been prepared which is being implemented by the State Climate Change Cells set up DST. These cells are also conducting public awareness programme to sensitize on the vulnerability of Himalayan regions that includes the issues related to tourism.

- Moreover, MoEF&CC is implementing a National Mission on Himalayan Studies which is probably looking into aspects of sustainable Tourism. NMSHE mission implemented by DST does not deal with this aspect.

Recommendation - Para No. 45

National Mission on Strategic Knowledge for Climate Change

The Committee note that the National Mission on Strategic Knowledge for Climate Change (NMSKCC) seeks to build a vibrant and dynamic knowledge system that would inform and support national action for responding effectively to the objective of ecologically sustainable development. It aims at creating institutional capacity for research infrastructure including access to relevant data sets, technologies, computing and communication facilities and awareness to improve the quality and sector specific scenarios of climate change over the Indian subcontinent. It also seeks to build knowledge and research networks, develop national capacity for modeling the regional impact of climate change on different ecological zones within the country for different seasons and living standards. The mission seeks to form well designed knowledge networks with a well structured framework for harmonization, interoperability, sharing and exchange of data of relevance to climate change and responses, to enhance the research capability in climate science, position a technology watch system for key sectors related to economic development, likely to be affected by climate change, leverage development of suitable technologies for adaptation and mitigation of climate change under various missions, assist other agencies engaged in the implementation of the National Action Plan on Climate Change and supporting the actions under the other Missions, if necessary. So far, 12 thematic knowledge networks have been established, 3 regional climate models have been developed and 75 high quality climate change professionals have been trained. The Committee have noted that India's share in global climate change research publication is less than 2 percent and we are behind countries like USA, UK, Germany and China. The Committee feel that climate change as an academic discipline is largely absent from our colleges and universities and that is why there is absence of trained manpower in the field. The objective of the mission for building national S&T capacity in climate change research to develop strategic knowledge system can be achieved only when climate change as a subject is introduced in colleges and universities. The Committee, therefore, recommend for taking the desired action alongwith adequate financial allocation for the purpose.

Action Taken by the Ministry

- Climate Change and environmental studies are taught at university level in multiple universities in India and in the institutions on National Importance. The list of such courses taught in the institutions is as follows –

S. No.	Name of Course	Name of Institution
1.	M. Tech (Climate Change)	i. IISc Bangaloreii. IIT Bhubaneswar
2.	M. Sc (Climate Change)	Tata Institute of Social Sciences (TISS), Mumbai
3.	M. Sc (Climate Change & Policy)	The Energy and Resource Institute (TERI), Roorkee
4.	M. Sc (Climate Change and Impact Management)	Gujarat University
5.	M. Sc (Environmental Studies)	I. IIT Mumbai II. IIT Kharagpur III. NIIT Roorkee IV. Jawaharlal Nehru University V. Delhi University VI. Banaras Hindu University VII. North-Eastern Hill University VIII. Jammu Central University IX. Gujarat Central University X. Haryana Central University XI. Jharkhand Central University XII. Kerala University XIII. Vishwabharti University XIV. Pondicherry University XV. Indira Gandhi National Tribal University (IGNTU) XVI. Nagaland University XVII. Sikkim University XVIII. Mizoram University XIX. National Institute of Industrial Engineering Mumbai XX. Guru Ghasidas University

Recommendation - Para No. 46

The Committee note that there are 3000 scientists and 450 institutions in the Country in so far as climate science is concerned. For a Country of a size of India, this is a very small number. Moreover, the research efforts in the climate science are

fragmented and there is no coordination in research being undertaken in different institutions. The Committee also note that there is weak linkage between climate science and policy and there is no partnership with private sector and the civil society. The Committee recommend that steps be taken to interlink all the institutions engaged in climate science research and also involve private sector in climate science research through fiscal and other incentives. Involvement of rural population is also necessary to collect the real time data.

Action Taken by the Ministry

Various programmes and projects are initiated under the two National Missions which have close linkages with each other. They are working in close coordination to achieve common goal and deliverables. Efforts are also being made to develop inter-institutional, inter agency, inter-ministerial synergy and convergence. A large number of civil societies and nongovernmental organizations have been engaged specially with State Climate Change Cell as stakeholders for imparting training programme and also the public awareness programme. Under the thematic Task Forces, there is involvement of rural population in data collection for the traditional knowledge system and Himalayan Agriculture.

Recommendation - Para No. 47

The Committee note that the mission seeks to build knowledge and research networks, develop national capacity for modeling the regional impact of climate change on different ecological zones within the country for different seasons. The Committee also note that India does not have an independent data base for climate science research and has to depend on foreign sources for them. The Committee are of the view that dependence on foreign sources is not healthy as their database has been built and compiled for their requirements which may not be similar to us. The Committee, therefore, recommend that efforts be made to develop our independent database commensurate with our needs. For example, we should be able to develop models for monsoon dynamics and regional climate model which are relevant to our eco-system. Action in this regard is urgently called for as the study of climate is a continuous process and provides the necessary information for policy formulation.

Action Taken by the Ministry

Under the National Mission on Strategic Knowledge for Climate Change several projects have been supported to develop India Centric climate model and regional climate model using data from within and from outside country. Several key issues such as convection and cloud parameterization for adjusting monsoon dynamic such as temperature and precipitation etc. are being adjusted in these model development efforts. This work is being carried out by dedicated research teams at IIT Delhi (for India Centric Climate Model) and BHU, Varanasi, Andhra University,

Vishakhapatnam, Cochin University of Science & Technology, IIT Madras, IIT Bombay, IIT, Kharagpur, IIT, Bhubaneswar (for Regional Climate Model) which have been supported by DST. The knowledge generated from these programmes is being translated into strategic knowledge for policy formation purpose.

Recommendation - Para No. 48

Climate change is one of the largest and most complex problems we are facing today. The impacts of higher temperatures, variable precipitation, and extreme weather events have already begun to impact the economic performance of countries and the lives and livelihoods of millions of poor people. India is among the countries most vulnerable to climate change. It has one of the highest densities of economic activity in the world, and a very large number of poor people who rely on the natural resource base for their livelihoods, with a high dependence on natural environment, specially rainfall. The Climate change will affect us through vagaries of weather, incidences of floods and droughts, changes in rainfall patterns, melting of glaciers, effect on groundwater, rise in sea level, food security, energy security, water security, health and increasing conflicts due to increasing stress. The near universal impact of climate change makes effective remedial actions urgent. As a number of agencies are expected to work together to deal with this crisis like situation, the action needs to be urgent, integrated, coordinated, collaborative, collective and effective global, national and local harnessing the energy of all citizens.

Action Taken by the Ministry

Noted

CHAPTER – III

Recommendation - Para No. 7

The Committee note that the NSM was launched in 2010 with an initial target of generating 20000 MW of grid-connected solar power by 2022. The targets were subsequently increased to 100000 MW by 2021-22, 40 percent of which is to be sourced from grid-connected rooftop projects and 60 percent from land-based solar power projects. The Committee also note that the total investment in setting up the targeted solar power is ₹6,00,000 crore. The funding requirement for the targeted solar power generation will be met from budgetary support, internal and international financing. A major part of funding requirement will have to be met through funding by the financial institutions - both domestic and international. The Government has also come out with Viability Gap Funding (VGF) scheme for certain solar power plants. So far as Government funding is concerned, in 2016-17 ₹2541.15 crore (actuals) was allocated for NSM while in 2017-18 (RE) the allocation declined to ₹2102.10 crore. In 2018-19, the BE was ₹2893.74 crore. The Government's outlay for the 12th Plan period is ₹13,690 crore, which is barely a fraction of the required investment. The Committee fail to understand as to how the enhanced targets of generation of 100000 MW of solar power by 2021-22 would be achieved in the aforesaid scenario whereby there is no clarity about the sources of funding for the National Solar Mission. The Committee may like to emphasize that with the cost of solar power consistently declining, effective implementation of Solar Mission has the potential to transform the renewable energy sector and promote ecologically sustainable growth while addressing India's security challenge for which adequate financial resources are required. The Committee, therefore, strongly recommend that an analysis of financial support from each of the source viz. budgetary support, private investment, viability gap funding, international aid should be undertaken by the Government and the revised mission document be brought out indicating therein clearly about the sources of financing.

Action Taken by the Ministry

Solar projects are mainly set up by Private developers, which are selected through a competitive bidding process. These projects are set up primarily through private investments. Apart from this, the Ministry of New and Renewable Energy (MNRE) implements various schemes/programs to achieve the targets, now enhanced to 292 GW by 2030. MNRE under these schemes have spent around Rs. 24,400 crores so far, since introduction of National Solar Mission (NSM).

As on 31-05-2023, a cumulative capacity of 67,821 MW of solar power projects has already been installed in the country. Further, a capacity of around 51,413 MW is under implementation, for which a Letter of Intents (LoI) has been issued, and about 48,878 MW is under the tendering stage.

Recommendation - Para No. 14

The Committee note that one of the initiatives under the mission is Market Transformation for Energy Efficiency (MTEE) under which Bachat Lamp Yojana (BLY) and Super Efficient Equipment Programme (SEEP) is undertaken. The BLY is a public-private partnership program comprising of Bureau of Energy Efficiency (BEE), Distribution Companies (DISCOMs) and private investors to accelerate market transformation in energy efficient lighting. After initially replacing incandescent bulbs by CFLs, BEE is now promoting use of LED lights using the institutional structure of BLY Programme. Under SEEP, appliances are identified and through fiscal incentives, their super-efficient versions are promoted. The Committee have been informed that 70 W ceiling fans have been identified as the first appliance under the programme. As regards the BLY, the Committee agree that installing LED bulbs have resulted in energy savings, but there is a bigger problem of disposal of waste which the programme does not address. The wrong disposal of incandescent bulbs and CFL which were replaced by LED will create a huge ecological problem. Similarly there is no awareness campaign for consumers about the ways to correctly dispose the bulbs, CFLs and LEDs. The Committee, therefore, recommend that the Ministry should take adequate steps to make people aware about how to dispose such waste so that they do not create environmental problems. As regards SEEP, the Committee feel that energy guzzling appliances such as air-conditioners, microwave ovens, geysers have to be expeditiously included in the programme for maximum impact on energy savings. Similarly, alongwith replacement of CFLs and incandescent bulbs, the wires and switch boxes which have become very old and obsolete also need to be replaced to attain better energy efficiency.

Action Taken by the Ministry

- There are specific norms for E-waste management which covers safe disposal of LEDs and fall under the mandate of Ministry of Electronics and Information Technology (MeitY) & Central Pollution Control Board (CPCB).
- Under S&L programme, BEE has introduced energy performance standards for 10 mandatory and 18 voluntary appliances as per table given below:

S. No.	Mandatory Appliances	S. No.	Voluntary Appliances
1	Room Air Conditioners	1	Induction Motors
2	Frost Free Refrigerator Tubular	2	Pump Sets
3	Florescent Lamp Distribution	3	Ceiling Fans
4	Transformer	4	LPG-Stoves
5	Room Air Conditioner (Cassette, Floor Standing)	5	Washing Machine
6	Direct Cool Refrigerator	6	Computer (Notebook/Laptops)
		7	Ballast (Electronic/Magnetic)

7	Color TV	8	Office Equipment (Printer, Copier, Scanner, MFD's)
8	Storage type Electric Water Heater	9	Diesel Engine Driven Mono-set Pumps
9	Inverter Air Conditioner	10	Solid State Inverter
10	LED lamps	11	DG Sets
		12	Chillers
		13	Microwave Ovens
		14	Solar Water Heater
		15	Deep Freezers
		16	Light Commercial Air Conditioners (LCAC)
		17	UHD Televisions
		18	Air Compressors

- As regards to incentivizing the super-efficient appliances to enhance their market share, Energy Efficiency Services Limited (EESL) has initiated actions. Currently Super-Efficient Air Conditioning programme is under implementation on demand aggregation model. These Super-Efficient ACs provide 1.5-TR cooling capacity at high ambient temperature while also reducing the cost of cooling by 50%. As on date, around 1, 300 Super-Efficient Air Conditioners have been sold.

Recommendation - Para No. 15

The Committee would also like to recommend for use of energy efficient appliances in the Government buildings for which LED lights, BEE rated 5-star ACs and ceiling fans should be retrofitted in the existing Government buildings. In the newly constructed buildings, the use of energy efficient appliances should be made mandatory.

Action Taken by the Ministry

- BEE has launched the updated version of Energy Conservation Building Code (ECBC) in the year 2017 and the newly code is futuristic, and easy to implement. The new version has three levels of compliance i.e. ECBC, ECBC+ and Super ECBC. The ECBC specifies building parameter and technical specification for appliances used in buildings. Alongwith the above, BEE has also developed a regulatory framework for enforcement of ECBC by states and UTs. Till June 2021, 20 States and UTs have notified ECBC in their states and 48 Urban Local Bodies (ULBs) from 8 States have incorporated provisions of ECBC for building approval process.
- In order to bring energy efficiency in existing commercial buildings, BEE has developed a voluntary star rating programme for buildings which is based on

the energy usage in the building over its area expressed in kWh/sqm/year. The programme rates buildings on scale of 1-5, with 5-star rating being the most efficient. Star labels for day use office buildings, BPOs, Hospitals and shopping malls have been developed. This program rates buildings on 1-5 scale, with 5 star labelled buildings being most efficient. As on June 2021, 264 buildings have been awarded star rating.

- BEE has also signed a MoU with CPWD in the year 2019 for promoting Energy Efficiency in CPWD managed Government buildings.
- Further, the Ministry of Finance has issued Office Memorandum (OM) no. 26/6/12- PPD dated 21st January 2013 for procurement of energy efficient electrical appliances and OM no. 25(24)/E.Coord/2017 dated 4th August 2017 for mandatory installation of LED based lighting in all Government buildings.
- In order to promote energy efficiency in residential building sector, the residential building energy conservation code (Eco Niwas Samhita) and labeling program for residential building have been developed. In addition, "ECO-NIWAS" Portal (www.econiwass.com) has been launched to raise awareness and make people understand the energy efficiency measures in buildings.
- BEE has provided financial assistance to 5 states namely Maharashtra, Telangana, Andhra Pradesh, Uttar Pradesh and Himachal Pradesh for construction of Super ECBC buildings.
- BEE has conducted feasibility study of 100 existing buildings to understand the energy consumption scenario & provide solutions to the building representatives for achieving Near Zero Energy Building (NZEB) status. The program covers five categories of buildings as Educational Institutions, Health Care, Hospitality, Shopping Complex and Transportation (Airports, Railway Stations and Metro Stations).
- In order to reduce the cooling demand across sectors and to reduce the cooling energy requirements, Government of India launched "India Cooling Action Plan (ICAP)" in 2019. ICAP recommends strategies to propagate sustainable way of living by adoption of climate friendly cooling technologies and strategies to reduce the cooling requirement and related energy demand across various sectors of the Indian economy. The India Cooling Action Plan seeks to reduce cooling energy requirements of 25% to 40% by 2037-38.

Recommendation - Para No. 24

The Committee note that plantation activity is one of the key aspects of the mission. During the FY 2015-16 plantation activity was carried out in 32451.72 hectare area in four States of Chhattisgarh, Odisha, Manipur and Karnataka in forest and nonforest lands. Plantation was carried out in Punjab also in the FY 2016-17. The Committee, however, are of the view that though plantation activity is aimed at increasing green cover, they cannot replace actual forest cover. Forest has plants and trees of numerous varieties and sizes and shapes. Forests grow naturally and according to

climate conditions existing in the area. Afforestation exercises are aimed at increasing tree count and there is no consideration to existing soil and weather conditions. As a result trees like eucalyptus are planted which make environmental problems worse rather than solving it. Planting of unsuitable trees may cause drought, and prevent biodiversity in the regions. The Committee, therefore, recommend that while planting trees and increasing forest cover under the mission, adequate consideration should be given to the climate and soil and only trees that are native/suitable to the area should be planted.

Action Taken by the Ministry

- So far, Rs. 455.73 crores have been released to fourteen States namely Chhattisgarh, Odisha, Manipur, Mizoram, Kerala, Karnataka, Andhra Pradesh, Punjab, Uttarakhand, Madhya Pradesh, Maharashtra, Sikkim, West Bengal and Himachal Pradesh and one Union Territory of Jammu & Kashmir for improving quality of forest and increasing forest/tree cover in 167151 ha within the GIM Landscapes.
- The interventions of GIM aims at improving forest and tree Cover and enhancing ecosystem services like carbon sequestration and storage (in forests and other ecosystems), hydrological services and biodiversity. However, the State Governments have been advised to select landscape and native/suitable plant species for plantation based on the local climatic/soil conditions and other requirements.

Recommendation - Para No. 25

The Committee note that India has made the target of sequestering 2.523 billion tonnes of carbon by 2020-30. As per experts, our current forest cover is 75 million hectare and for meeting our targets of carbon sequestration, 30 million more hectare land for forests would be required. The mission document does not make it clear as to from where this land is going to be arranged. As noted before, till 2016-17 afforestation programme targeted to cover only 51387 hectare which is a tiny proportion of what is needed. The Committee, therefore, are of the opinion that a holistic approach to increasing green cover and protecting existing trees is needed. The Committee feel that all aspects of urban and regional planning including architectural and other sciences have to work on the premise that trees are critical to our survival and they have to be protected at all costs. Similarly, protection of trees and forests are also linked to the protection of people who are dependent on forest produces for their livelihood. Unless interests of these people are protected by making appropriate changes in the law/policy, no amount of plantation exercise will succeed. The Committee, therefore, recommend that the mission should incorporate human as well as physical elements in its programme formulation and implementation.

Action Taken by the Ministry

- The Ministry has initiated the process for revision of Mission Document of National Mission for a Green India in terms of the decision taken in the Prime Minister's Executive Council on Climate Change and in line with NDCs targets submitted by Government of India under UNFCCC. The Mission focus on taking up afforestation and other related activities on degraded forest landscapes and other vacant lands wherever feasible.
- So far, Rs. 455.73 crores have been released to fourteen States and one Union Territory for improving quality of forest and increasing forest/tree cover in 167151 ha. Adequate financial allocation is required for the mission so that the mission activities can be carried out in remaining states also.
- The Mission promotes to enhance tree cover in Urban & Peri-Urban areas (including institutional lands). The mission also seek convergence with already ongoing schemes / programmes such as AMRUT, MGNREGA, CAMPA, National Watershed Mission, National Bamboo Mission, etc.
- The Mission provides to unlock people's energy and solicit their engagement with the greening program. It strives to secure participation of multiple agencies / organizations / individuals (community, farmers, Panchayat bodies, Government / Non-Government, Private institutions / agencies, academia, business houses, children especially in rural communities, media, etc.) in greening activities. This approach supports the implementing agencies for undertaking the Mission's activities like planning, plantation, maintenance, monitoring, research, capacity building, awareness, livelihood improvement activities, etc. with active participation of local communities. The Mission provides for 17% of total allocation of Annual Plan of Operations of the States for carrying out the livelihood improvement activities of household living in and around areas.

Observation/Recommendation (Para No. 26)

National Mission for Green India

Emphasizing the need of comprehensive planning for rural and urban areas under National Mission on Sustainable Habitat, the Committee had recommended as under:

“The Committee note that the National Mission on Sustainable Habitat (NMSH) aims at promoting sustainability of habitats through improvements in energy efficiency in buildings, urban planning, improved management of solid and liquid waste including recycling and power generation, modal shift towards public transport and conservation. The Committee find that major components of the mission are, improvements in energy efficiency in buildings through extension of energy conservation building code, better urban planning and modal shift to public transport, improved solid, liquid waste management in urban areas, improved ability of habitats to adapt to climate change by

improving resilience in infrastructure, community based disaster management and measures for advance warning system for extreme weather events and conservation through appropriate changes in legal and regulatory framework. The objectives of the mission are being met through schemes such as Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Swachh Bharat Mission, Smart Cities Mission and Urban Transport Programme. By the year 2021, these four schemes will result in mitigating GHG emission of 133 million tonnes and by the year 2031, the mitigation will be to the tune of 270 million tonnes. The Committee find that the emphasis of the mission is limited to urban habitats only. There is no attention to rural habitats. As the population of the Country increases, there will be expansion of cities with villages subsumed within the cities. If the integrated plan under the mission does not take into account the requirements of the rural habitats, the problem would not be fully addressed. The Committee are of the view that mission on sustainable habitat has to see the habitat landscape in totality, only then sustainable solutions are possible. The Committee, therefore, recommend that the mission should introduce a comprehensive and integrated planning encompassing the needs of both rural as well as urban habitats. The Committee may be apprised of the steps taken in this regard.”

Action Taken by the Ministry

“The subjects of housing and urban development are in the ambit of State Governments. However, Union (Government plays a catalytic role through formulation and administration of various Policies and Missions, implementation of which is done by the State Governments. Ministry of Housing and Urban Affairs (MoHUA) is mandated to formulate policies on Urban Sector only, while Ministry of Rural Development formulates policies and programmes pertaining to the Rural Sector. Preparation of plans for cities and villages also comes within the purview of State Governments. For planned development, MoHUA has formulated Urban and Regional Development Plan Formulation and Implementation (URDPFI) Guidelines, which advocates preparation of comprehensive and integrated planning encompassing the needs of urban habitats.”

Recommendation - Para No. 30

The Committee in their 15th Report (16th Lok Sabha) had recommended to make suitable provision under 'Namami Gange' to provide bio-digester toilets in all the villages and towns on the banks of Ganga and its tributaries in a time bound manner. The Committee while taking note of the fact that human excreta if buried in soil, converts into manure and if discharged in the water, poisons the water, would like to reiterate their recommendation and would urge the Government to act in a time bound manner.

Action Taken by the Ministry

The assessed performance of Bio-digester toilets gives no assurance of its effluent meeting the environment qualities desired by the Committee any better than that by a Septic tank system. Further, no urban household is, anyway, permitted to discharge human excreta into water or bury it directly in soil.

Recommendation - Para No. 32

The Committee note that the National Mission on Sustainable Habitat is of critical importance to make our habitats - both urban and rural better, livable and with minimal carbon footprint. To make it possible, an integrated approach to resolving existing issues of pollution, congestion and environmental degradation is needed. This also requires people's participation. Private sector participation is also important as the need for funding may not be fulfilled by the Government alone. However, the people are most important element of this programme and without their active participation, the programme will not succeed. Adequate steps to encourage people's participation and involvement of private sector in the programme should, therefore, be taken.

Action Taken by the Ministry

National Mission for Sustainable Habitat(NMSH) 2021 provides an overarching framework for sustainable urbanization and addressing climate change through, various mitigation and adaptation strategies in the coming decade i.e. 2021-2030. As part of NMSH 2021, the Ministry is undertaking the following activities under its flagship missions to ensure active participation of people as well as private sector.

Swachh Bharat Mission-Urban actively engages with all development partners, knowledge partners, sector partners and industry to leverage their support and assistance to accelerate Mission outcomes on the ground, as well as to strengthen institutional capacities in the SWM and Used water management sectors.

Under Swachh Bharat Mission 2.0, projects under PPP mode are encouraged, to invite private capital in urban infrastructure as well as to bring in private sector efficiency in delivery of urban services and O&M. It is also understood that in the current scenario, there may be a requirement for viability gap funding. For Solid Waste Management, revenue streams such as Compost from organic waste, Recycled construction material from C&D waste, etc. can be leveraged, while for waste water management, revenue streams such as compost from fecal waste, sale of recycled waste water etc. may be leveraged from PPP projects.

SBM-U 2.0 encourages adoption of locally innovated, cost effective solutions and business models in sanitation and solid waste management by small scale and private entrepreneurs and start-ups, through investments in R&D, Swachhata technology challenge and facilitation for inclusion in GeM, in order to take forward the government's vision of an "Aatma Nirbhar Bharat" and "Make in India",

All the ULBs explore possibility to take up the projects in a PPP mode (including cluster level projects catering to ULBs of varying population categories). Government of India funds as per prescribed funding pattern will be available for claiming VGF. Payment of VGF from Central assistance will be 50% of the gap funding subject to maximum of 30% of project cost, or as could be the prevalent Central government guidelines. This could be paid in normal PPP mode or Hybrid Annuity Model (HAM) through escrow account. Release of VGF grants will be as per contractual arrangement with the private partner and as approved by State Government. However, it will be ensured that funds do not remain parked with the State Governments. For cluster projects taken up on EPC mode, the fund release will be on pro-rata basis, depending on population category of ULBs proposed to be covered under the cluster.

Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0, Public Private Participation (PPP) projects are mandatory in million plus cities and at least a minimum of 10% of total fund allocation at the city level shall be committed to PPP projects. Projects with focus on selling treated water to industries and other users may be the potential projects for implementing under PPP mode. Such projects can be taken up in Hybrid Annuity Model (HAM) or any other suitable model. Viability gap funding for such projects will be provided through CA. CA will be 50% of the viability gap subject to maximum of 30% of the project cost. Balance viability gap will be borne by State / ULB. Total viability gap will not exceed 60% of project cost.

Recommendation - Para No. 36

The Committee note that India supports 15 percent of the world's population, but has only 4 percent of the world's water resources. The data also shows that only 35 percent of India's agricultural land is irrigated. This means that a huge 65 percent of farming depends totally on rain. Not much has been done to conserve water for offseason use. Even after constructing 4,525 large and small dams, the country has managed to create per capita storage of only 213 cubic meters - compared to 6,103 cubic m per capita in Russia, 4,733 in Australia, 1,964 in the United States, and 1,111 in China. India's water crisis stems from the fact that it is highly dependent on a few major river systems, especially the Ganges and its tributaries, for its water supply. But India use almost twice the amount of water to grow crops as compared to China and

United States. Main reasons for this are power subsidies for agriculture leading to decline in water levels and also the policy to give price support to water intensive crops such as sugarcane, wheat and rice. As a result these crops are being grown even in those areas with the use of groundwater and chemical fertilizers where geographical conditions for these crops are not appropriate. Moreover, new hybrid seeds give more yield but they also need more water. As a result the traditional farming systems and practices have been obliterated because there is no Government support or income support to farmers for them. India's agricultural sector currently accounts for over 90 percent of total water drawn, but contributes only 15 percent to the country's GDP. As a result of Government's policy to provide free water and power to farmers, crops such as rice are being grown in semi-arid areas of Punjab and Haryana and sugarcane is being grown in dry areas of Maharashtra. The Committee are concerned that such heavy use of groundwater is causing steep decline of groundwater levels in many States and the country is moving towards becoming a water scarce Country. The Committee, therefore, recommend that the Government should formulate appropriate policy measures for promoting efficient irrigation methods such as drip irrigation, sprinkler systems for irrigation. Moreover, water efficient crop varieties should be developed through R&D in our research institutions such as ICAR.

Action Taken by the Ministry

- Ministry of Agriculture & Farmers Welfare is implementing 'Per Drop More Crop' component of **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)** which is operational from 2015-16 in the Country. The PMKSY-Per Drop More Crop mainly focuses on water use efficiency at farm level through Micro Irrigation. Besides promoting precision irrigation (Drip and Sprinkler Irrigation System) and better onfarm water management practices to optimize the use of available water resources, this component also supports micro level water storage or water conservation/management activities to supplement Micro Irrigation.

State-wise Year wise Released to the States under PMKSY- Per Drop More Crop

Year	Released (Rs. In Crore)	Achievement (Coverage of Micro Irrigation) (Lakh Ha)
2015-16	1556.73	5.72
2016-17	1991.24	8.39
2017-18	2819.49	10.48
2018-19	2918.38	11.58
2019-20	2700.01	11.72
2020-21	2562.18	9.38
Total	14548.03	57.31

BE 4000 cr. allocated for the programme during 2021-22

State wise progress made under PMKSY-Per Drop More Crop during last four years is given at **Annexure-V and Annexure-VI**.

• **Micro-Irrigation Fund (MIF) created under NABARD**

Micro Irrigation Fund with corpus of Rs. 5000 crore has been created with NABARD during 2018-19. The major objective of the fund is to facilitate the States in mobilizing the resources for expanding coverage of Micro Irrigation by taking up special and innovative projects (any project for covering micro irrigation such as Coverage in specific area, specific crop, canal command, synchronisation of water bodies for micro irrigation, etc.) and also for incentivising micro irrigation beyond the provisions available under PMKSY-PDMC to encourage farmers to install micro irrigation systems i.e. top-up subsidy projects (providing subsidy by states above the norms of scheme guidelines of Govt. of India).

- Steering Committee of MIF and PSC of NABARD has approved projects amounting with loans under MIF to Rs. Rs. 3970.17 Crore. The total area of the projects is 12.81 lakh ha.
- Out of the above approved amount, Rs. 1857.2874 crore has been released to the States of Andhra Pradesh, Haryana, Gujarat, Punjab & Tamil Nadu. Total area covered achieved till now is 7.18 lakh ha.

To further strengthen & expand the adoption of Micro Irrigation systems by the farmers in the county for enhancing water use efficiency at farm level, a Budget announcement has been made to double the initial corpus of Micro Irrigation Fund and augment it by another Rs. 5,000 crores.

- Department of Agriculture, Cooperation & Farmers Welfare has been emphasizing promotion of suitable cropping systems under Crop Diversification Programme (CDP) under Rashtriya Krishi Vikas Yojana (RKVY) and also supplement the efforts of the States to diversify agricultural/horticultural crops as per the local need through various schemes viz. National Food Security Mission (NFSM), National Mission on Oilseeds and Oil Palm (NMOOP), Mission for Integrated Development of Horticulture (MIDH), National Mission for Sustainable Agriculture (NMSA) - Rainfed Area Development & Climate Change (RAD&CC) etc.
- The farmers are encouraged to use available resources like land and water judiciously. The new technologies on cropping pattern are demonstrated at the farmers' fields through State Department of Agriculture/Indian Council of Agricultural Research (ICAR)/State Agricultural Universities (SAUs)/Krishi Vigyan Kendras (KVKs), etc.
- The farmers are given advisories for adoption of modern agronomic practices like raised bed sowing, alternate furrow irrigation, furrow irrigation, sprinkler irrigation, drip irrigation, mulching, Direct Seeded Rice (DSR), System of Rice Intensification (SRI), laser land leveling, adoption of drought tolerant varieties,

and diversifying cropping pattern with low water requiring crops like pulses, oilseeds, maize and agroforestry. Trainings and Field Level Demonstrations etc. are conducted to educate farmers on all these aspects.

- The Department encourages the farmers to take advantage of the scheme by wide publicity through press & print media, publication of leaflets/booklets, organization of workshops, exhibitions, farmer fairs, information on State/Government of India web portals etc. In addition, Indian Council of Agricultural Research (ICAR) imparts training and organizes field demonstrations through Krishi Vigyan Kendras (KVK) to educate farmers for promotion of Micro Irrigation. Demonstrations have been setup so far in 160 Krishi Vigyan Kendras (KVKs) for educating the farmers for taking up MI technology to save water.
- Under the **National Innovations in Climate Resilient Agriculture (NICRA)**, a flagship programme of ICAR following progress has been made since 2011:
 - Climate resilient varieties of rice (CR Dhan 201), mungbean (IPM 205-7 [Virat], IPM 2K14-9 [Varsha], IPM 409-4 [Heera] and IPM 302-2 [Kanika], lentil (IPL 534) and maize hybrid (CMH 08-287) were developed. Rice variety (NICRA Aerobic Dhan 1) is identified for release in 2021.
 - Rice variety CR Dhan 201 is a medium duration (110-115 days), semi dwarf, non-lodging type suitable for water limited/aerobic conditions with an average productivity of 3.8 t ha⁻¹. It is moderately resistant to leaf blast, sheath rot, stem borer, leaf folder and thrips etc. This variety is released for states of Chhattisgarh and Bihar for aerobic conditions.
 - Mungbean variety IPM 205-7 (Virat) is early maturing (52-55 days), high yielding, resistant to yellow mosaic disease with an average productivity of 1.4 tha⁻¹. It is suitable for summer cultivation for states of Punjab, Haryana, Uttar Pradesh, Karnataka, TamilNadu, Madhya Pradesh and Gujarat.
 - Short duration mungbean variety IPM 2K14-9 (Varsha) suitable for *kharif* cultivation in Uttar Pradesh. It matures in 60-70 days and is highly resistant to yellow vein mosaic disease with yield potential of 1.4 t ha⁻¹.
 - An extra short duration mungbean variety IPM 409-4 (Heera) matures in 55-65 days, suitable for spring/summer cultivation and is recommended for release in Uttar Pradesh.
 - Short duration variety IPM 302-2 (Kanika) suitable for cultivation in *kharif* and spring seasons, and is recommended for release in Uttar Pradesh. It is highly resistant to yellow mosaic disease, large attractive green and shining seeds.
 - An extra early lentil variety (IPL 534) is released for cultivation in Madhya Pradesh which avoids force maturity by sudden rise in temperature during pod filling.
 - Drought tolerant maize hybrid CMH 08-287 with average productivity of 8.0t ha¹ is identified for cultivation in the States of Uttar Pradesh, Bihar, Jharkhand, Odisha, Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra.

Recommendation - Para No. 40

As stated in Economic Survey (2017-18) , according to a 2014 study by the Indian Agricultural Research Institute (IARI), in 2008-09 the country generated 620 million tonnes of crop residue, of which around 16 per cent was burnt on farms, of which 60 per cent was paddy, straw, whereas wheat accounted for just 22 percent. As per estimates, Punjab alone produces 19-20 million tonnes of paddy straw and about 20 million tonnes of what straw. About 85-90 percent of this paddy straw is burnt in the field, and, as the satellite images show, wheat straw is also increasingly being burnt in recent years. As per IARI report main reasons for burning crop residues in field include unavailability of labour, high cost in removing the residues and use of combines in rice-wheat cropping system especially in the Indo-Gangetic plains (IGP). The usage of combine harvesting machines is another reason because it only reaps the grains, leaving stalks or stubble of around 40 cm. Removing the stubble manually or by using specialized machines to do the job is costly. For every 0.4 ha of wheat crop, the cost of renting a combine harvester is just ₹800. Once the machine has harvested, the cost of getting the stubble removed is ₹3,500/ha. So the value of fodder is discounted because it is more economic for the farmers to just burn by using match box and clear the fields.

The Committee understand that crop residue burning has been banned by the National Green Tribunal (NGT) in States of Rajasthan, Uttar Pradesh, Haryana and Punjab parts of which constitute the National Capital Region, and in 2014, the Union Government had released the National Policy for Management of Crop Residue, which NGT directed the States to implement. Besides crop residue burning is punishable under the Air (Prevention and Control of Pollution) Act, 1981. In spite of all these provisions, the problem of crop residue burning persists. Burning of crop residues leads to release of soot particles and smoke in the atmosphere causing human and animal health problems. It also leads to emission of greenhouse gases, namely carbon dioxide, carbon monoxide, methane and nitrous oxide, causing global warming. These gases are of major concern for their global impact and also their local impact in causing rise in suspended particulate matter (SPM) in the nearby areas leading to health hazard. While appreciating banning burning of crop residue in States constituting NCR by NGT, the Committee observe that there is a need for consultation with the farmers and understanding their problems. The farmers should be incentivized for use of specialized machines which cut the crop residue from the bottom or removing the stubble manually without resorting to crop residue burning. Besides technological solutions are to be found under a time bound programme and Agriculture Engineering Departments should be incentivized to provide early cost effective alternatives for burning of crop residue.

Action Taken by the Ministry

Paddy stubble burning is mainly practiced in Indo-Gangetic plains of the States of Punjab, Haryana and Uttar Pradesh to clear the fields for Rabi crop sowing. The farmers are resorting to paddy straw burning because of very short time window between the harvesting of paddy crop and the sowing of next crop.

- To address air pollution and to subsidize machinery required for in-situ management of crop residue, a Central Sector Scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' for the period from 2018-19 to 2019-20 is being implemented. During the year 2018-19 and 2019-20, the funds as under have been released under the aforementioned scheme:

State/Agency	Funds released (Rs. in Crores)			
	2018-19	2019-20	2020-21	Total
Punjab	269.38	273.80	272.50	815.68
Haryana	137.84	192.06	170.00	499.9
Uttar Pradesh	148.60	105.28	120.20	374.08
NCT of Delhi	0	4.52	0.00	4.52
ICAR and other Central Agencies	28.51	18.48	8.00	54.99
Total	584.33	594.14	570.70	1749.17

Out of these funds, during last 3 years, the State Governments have established more than 30900 Custom Hiring Centres of crop residue management machinery to provide machines & equipment to the small and marginal farmers on rental basis. A total of more than 1.58 lakh crop residue management machines have been supplied to these established CHCs and the farmers of these four States for management of crop residue.

The State Governments and Krishi Vigyan Kendras (KVKs) have also undertaken Information, Education and Communication (IEC) activities on a massive scale for creating awareness among farmers.

In 2020 season, through the concentrated efforts of this scheme, a reduction in number of paddy residue burning events in comparison to 2016 in the State

of Haryana, Uttar Pradesh and Punjab were reported as 64%, 52% and 23% respectively.

- Under National Food Security Mission (NFSM) programme all the NFSM implementing states have been given flexibility to take up the farm machineries/tools at the subsidized rates as per the guidelines of Sub-Mission on Agricultural Mechanization. Awareness is also created amongst the farmers through training to avoid stubble burning.
- In Punjab and Haryana, emphasis has been on zero till planting of wheat in rice residues with happy seeder as alternative to crop residue burning. The efforts of NICRA led to making of 26 villages as residue burning free villages adjoining the NICRA villages in the states of Punjab and Haryana.

Recommendation - Para No. 49

To conclude, Climate Change issues cannot be resolved with a fragmented approach. They require holistic solution. Any one aspect of environmental change quickly interacts with other components. A slight increase in global warming affects climate, agriculture, health, water (river and underground), life on coastal regions, urban habitats and so on. The Committee strongly recommend to take a holistic view of the existential problem and find holistic solutions with great urgency. The Committee recommend to constitute a Mission Mode Authority with Prime Minister to preside and review all the efforts. The Authority should include representatives of all the Missions and provide a holistic approach for resolving the climate issues. The recent cataclysmic happenings spread over from Uttarakhand to Kerala are the nature's warning bells and the sound is too high in decibels to be ignored. The Committee recommend an urgent action on the part of the Government under a time-bound programme.

Action Taken by the Ministry

A Prime Minister's Council on Climate Change (PMCCC) chaired by Honourable Prime Minister already exists. The nodal agency for coordination and implementation of this action is Ministry of Environment Forests and Climate Change.

CHAPTER – IV**Recommendation - Para No. 8****National Solar Mission**

The Committee find from the data made available by the Ministry of New and Renewable Energy that whereas the performance of NSM during Phase-I (2010-2013) remained satisfactory with achievement of installation/sanctioned solar power generation both grid and off-grid, i.e., 1938.94 MW surpassing the targets of 1300 MW and installation of 7.01 million sq.m of collector areas against the target of 7 million sq.m, the performance has slowed down during Phase-II (2013-2017) of the Mission. The targets of 15900 MW under grid-connected solar power could not be achieved fully with achievement remaining 10602.83 MW thus the shortfall being 5297.17 MW. Under the off-grid solar applications segment, although the power sanctioned, i.e., 713 MW surpassed the targets of 600 MW, the installed power remained just 345.5 MW. Under Solar Thermal Collectors Segment, there is underachievement of targets, achievement being 5 million sq.m against the targets of 8 million sq.m. So far as the performance during the year 2017-18 is concerned, although tenders have been issued in respect of 22945 MW, the power commissioned is just 4804 MW. For another 10048 MW, PPA has been signed but it is not commissioned. The Committee express strong concern over the slowdown of the performance under the Solar Mission during Phase-II and recommend to critically review the performance so as to understand the reasons for the shortfall in achieving the set targets. Since Phase-III of the Mission has already commenced, it is utmost necessary to take the corrective actions besides effective monitoring of the projects so as to achieve the ambitious target of 100000 MW by 2021-22.

Action Taken by the Ministry

The suggestions of the Committee have been noted. Concerted efforts are being made in this regard in consultation with various stakeholders. Further, regular review meetings/video conferences have been taken by various levels to review the progress from time to time and to achieve the set targets without any shortfall.

Phase-wise targets have not been achieved as targeted. However, the progress has picked up in last few years. The installed solar capacity has increased by — 200% with addition of — 45 GW in last five years. As on 31-05-2023, a cumulative capacity of 67,821 MW of solar power projects has already been installed in the country. Further, a capacity of around 51,413 MW is under implementation, for which a Letter of Intent (LoI) has been issued, and about 48,878 MW is under the tendering stage.

Regarding solar thermal collector installations, 12 million sq. meters solar thermal collector area have been installed (specific scheme ended in 2017-18). At present, its installation is taking place in market mode.

Recommendation - Para No. 9

So far as State-wise commissioning of grid-connected solar projects is concerned, there is uneven performance in various States. Whereas Andhra Pradesh, Rajasthan, Tamil Nadu, Telangana, Gujarat, Karnataka, Madhya Pradesh and Punjab remained the first eight leading States with total cumulative capacity in MW as being, 1998.83, 1871.22, 1697.32, 1609.27, 1249.37, 1082.48, 857.04 and 809.45 respectively, the performance in some other big States having larger area of land like Maharashtra, Uttar Pradesh, J&K, Odisha and Chhattisgarh, notso encouraging. The Committee recommend that the Ministry should review State-wise performance of the projects and take the required initiatives particularly in remote and hilly areas.

Action Taken by the Ministry

The suggestions of the Committee have been noted. Efforts are being made in this regard, in consultation with various stakeholders. It is a fact that solar installations in various States, especially Hilly and North Eastern States, are low as it depends on various factors such as solar radiation, land availability, State policies etc.

As on 31-05-2023, total cumulative solar installation in Maharashtra, Uttar Pradesh, J&K, Odisha and Chhattisgarh are 4725 MW, 2520 MW, 50 MW, 458 MW and 950 MW respectively.

Ministry of New and Renewable Energy (MNRE) conducts regular review meetings with State Governments/developers for installation of Renewable Energy Projects.

Under the Solar Park scheme, smaller parks in the Himalayan & other hilly States where contiguous land may be difficult, are also considered. Further, smaller parks may also be considered in States/UTs with shortage of non-agricultural lands.

As on 31-05-2023, Solar Parks of cumulative capacity of 750 MW in Maharashtra, 3730 MW in Uttar Pradesh, 340 MW in Odisha and 20 MW in Mizoram are sanctioned. The Solar Park in Mizoram is already developed. The other parks are at various stages of implementation.

CHAPTER – V

Recommendation - Para No. 39

The Committee note from a media report that NITI Aayog has recently urged to all the States to work towards giving practical shape to the Zero Budget Natural Farming (ZBNF) on the lines of Himachal Pradesh and Andhra Pradesh, for which the Aayog will provide all assistance. Zero Budget Natural Farming system has been stated to have the advantages which include saving of water, protecting the environment, increase in the fertility of land and under this system the cost of production becomes zero and products are non-poisonous. While appreciating the move of the NITI Aayog to give emphasis to traditional ways of farming, the Committee would like the Government to furnish the details of the aforesaid model and plans to implement ZBNF system by various States/UTs.

Action Taken by the Ministry

- Government of India has been promoting organic farming for the welfare of farmers through the dedicated scheme of **Paramparagat Krishi Vikas Yojana (PKVY)** since 2015-16. Under PKVY, flexibility is given to States to adopt any model of organic farming including ZBNF depending on farmers' choice.
- **Bhartiya Prakritik Krishi Paddhti (BPKP)** - A new Sub Mission has been proposed under PKVY Scheme. EFC note has been prepared for implementation of BPKP- Sub Mission under PKVY and submitted to D/O Expenditure for consideration.
- Under **Rashtriya Krishi Vikas Yojana (RKVY)**, States can avail funds for any agriculture development projects including ZBNF with the approval of State Level Sanctioning Committee (SLSC). The States of Andhra Pradesh, Karnataka, Kerala, Himachal Pradesh and **Uttar Pradesh** have been implementing ZBNF.

States Promoting ZBNF

- **Karnataka** – has initiated implementation of ZBNF on pilot basis in an area of 2000 ha in each of the 10 Agro Climatic Zones of the State through the respective State Agriculture/ horticulture Universities as demonstrations/ Scientific experimental trials in farmer's fields and in the research stations of the concerned universities
- **Himachal Pradesh** - is implementing State funded scheme 'Prakritik Kheti Khushal Kisan' since May, 2018, the details of which are as:

2018-19 – 2669 farmers, Area: 357 ha.

2019-20 – 19936 Farmers, Area: 1155 ha.

- **Kerala** – Only awareness programmes, trainings and workshops to draw interest of farmers towards ZBNF has been imparted.
- **Andhra Pradesh** - launched ZBNF in September 2015 under the Rashtriya Krishi Vikas Yojana and Paramparagat Krishi Vikas Yojana. The details on area covered and farmers practicing ZBNF, for the last 3 years are as follows:

Year	No. of farmers	Area covered (ha)
2016-17	40656	16660
2017-18	163000	69175
2018-19	523000	200400

Recommendation - Para No. 44

The Committee, vide para 1 of this part, have noted that glaciers in the Himalayan region are retreating at an alarming rate. As per media reports, due to glacial retreat, Himalayan region has lost 13percent of its glaciers in last four decades resulting in loss of 443 billion tonnes (Gt) glacial ice. The rate of retreat of glaciers in the region, which varies from glacier to glacier, ranges from a few metres to almost 61 m/year. If the same rate continues, it is apprehended that the glaciers are likely to disappear by the year 2035. It is also reported that the rate of glacial loss in the Himalayas has accelerated over the decades, from around 9 Gt/year in 1975-85 to 20 Gt/year in 2000-2010. Glaciers are reported to be retreating faster in Western Himalaya than in Sikkim. The effect of glacial retreat and their eventual disappearance will change the weather pattern and be catastrophic for the entire region affecting crop cycles, economic development, health, water availability, weather etc. The Committee, therefore, recommend that adequate financial allocation be made and adequate infrastructure be created for extensive study of the Himalayan ecosystem to measure the retreat of all the glaciers existing in the region and the ways to mitigate its effects. Besides there is a need to regulate Himalayan Eco-tourism. A Committee comprising of experts to formulate the guidelines, to be observed while preparing the roadmap for Himalayan Eco-tourism, should be constituted. The guidelines should be designed keeping in view the entire Himalayan range from West to East. Urgent steps are required to create a mechanism involving all the stakeholders who are directly or indirectly affected by the changes in Himalayan system so that integrated approach is adopted in the entire Himalayan area. Such a platform will need international cooperation from all the countries falling in/connected to the Himalayan range.

Action Taken by the Ministry

- The glaciers dynamics are being studied at the centres of excellence supported by DST at Divecha Centre, IISc Bangalore, Kashmir University and Sikkim University.
- A centre of Glaciology is functioning at Wadia Institute of Himalayan Geology, Dehradun.
- An inter-University Consortium on “The Himalayan Cryosphere: Science, and Society comprising of four Indian Universities viz., Jawaharlal Nehru University, New Delhi, University of Kashmir, Srinagar J & K, University of Jammu, J & K and Sikkim Central University, Gangtok, Sikkim are formed to look into subject. A national network programme on glaciology has been launched.
- Wadia Institute of Himalayan Geology, Dehra dun, an autonomous institution of DST has been monitoring 10 major glaciers of the Indian Himalayan region for research purpose. These include; Gangotri, Dokriani, Chorabari, Dunagiri, Bangni, Pindari, Kafani, Pensilungpa, Durung Darang, and Prakachik glaciers.
- 2 Task Forces one each at Wadia Institute of Himalayan Geology and National Institute of Hydrology (NIH) carrying out research on Geo- resources and impact assessment of geological processes in NW Himalayan Ecosystem and Water, Ice, and Snow including Glaciers – Integrated Hydrological Studies for Upper Ganga Basin up to Rishikesh.
- An inter-University Consortium on “The Himalayan Cryosphere: Science, and Society comprising of four Indian Universities viz., Jawaharlal Nehru University, New Delhi, University of Kashmir, Srinagar J & K, University of Jammu, J & K and Sikkim Central University, Gangtok, Sikkim are formed to look into subject.
- A National Network Programme on Climate Change and Himalayan Cryosphere with 7 research projects launched in 2018.

NEW DELHI
February 2024

Magha 1945 (Saka)

DR. SANJAY JAISWAL
CHAIRPERSON
COMMITTEE ON ESTIMATES

**MINUTES OF THE SEVENTH SITTING OF THE COMMITTEE ON
ESTIMATES (2023-2024)**

The Committee sat on Thursday, the 1st February, 2024 from 1000 hrs. to 1045 hrs in Room No. '52-B', First Floor, Parliament House, New Delhi.

PRESENT

Dr. Sanjay Jaiswal – Chairperson

MEMBERS

2. Shri Dharmendra Kumar Kashyap
3. Shri P.P. Chaudhary
4. Shri K. Muraleedharan
5. Shri Magunta Srinivasulu Reddy
6. Shri Rajiv Pratap Rudy
7. Shri Francisco Cosme Sardinha
8. Shri Pratap Simha
9. Shri Jugal Kishore Sharma
10. Shri Sumedhanand Saraswati
11. Shri Mohanbhai Kalyanji Kundariya
12. Shri Nihal Chand Chauhan
13. Kunwar Danish Ali
14. Shri Sudarshan Bhagat

SECRETARIAT

- | | | | |
|----|-----------------------|---|-----------------|
| 1. | Shri Santosh Kumar | - | Joint Secretary |
| 2. | Shri Muraleedharan. P | - | Director |

2. At the outset, the Chairperson welcomed the Members to the sitting of the Committee. The Committee then took up for consideration and adoption of the following draft Reports:

- (i) XXX XXX XXX
- (ii) Draft Report on Action Taken by the Government on the recommendations/observations contained in 30th Report (16th Lok Sabha) on the subject “**Performance of the National Action Plan on Climate Change**”; and

3. The Committee after due deliberations adopted the draft Reports. The Committee then, authorised the Chairperson to finalize the draft Reports on the basis of factual verification received from the concerned Ministry and present the same to Lok Sabha.

The Committee, then, adjourned.

APPENDIX-II**ANALYSIS OF THE ACTION TAKEN BY GOVERNMENT ON THE RECOMMENDATIONS CONTAINED IN THE THIRTIETH REPORT (SIXTEETH LOK SABHA) OF THE COMMITTEE ON ESTIMATES**

(i)	Total number of recommendations/observations	48
(ii)	Recommendations/Observations which have been accepted by the Government (Sl. Nos. 2-6, 10, 11, 12, 13, 16-23, 27-29, 31, 33-35, 37, 38, 41-43, 45-48)	33
	Percentage of total recommendations	68.75%
(iii)	Recommendation/Observation which the Committee do not desire to pursue in view of the Government's reply Percentage of total recommendations (Sl No. 7, 14, 15, 24, 25, 26, 30, 32, 36, 40 & 49)	11
	Percentage of total recommendations	22.92%
(iv)	Recommendations/Observations in respect of which Government's replies have not been accepted by the Committee (Sl. Nos. 8 & 9)	2
	Percentage of total recommendations	4.16%
(v)	Recommendations/Observations in respect of which final replies of Government are still awaited. (Sl. No. 39 & 44)	2
	Percentage of total recommendations	4.16%