PROCEEDINGS OF THE 134TH MEETING OF THE GENETIC ENGINEERING APPRAISAL COMMITTEE HELD ON 21.03.2018

The 134th meeting of the Genetic Engineering Appraisal Committee (GEAC) was held on March 21, 2018 in Narmada Conference Hall, Ministry of Environment, Forest and Climate Change (MoEFCC), New Delhi under the Chairmanship of Shri Arun Kumar Mehta, Additional Secretary, MoEFCC and Chairman, GEAC, to consider the agenda items circulated to Members by email on 26.02.2018, and additional agenda items on 19.03.2018, and by hard copy. The list of participants is placed at **Annex-1**

At the outset, Shri. A.K. Mehta, Chairman, GEAC extended a warm welcome to all the Members followed by a round of introduction.

Thereafter, the agenda items were taken up as under:

Agenda Item No. 1: Leave of absence

The Committee granted leave of absence to the four Members who communicated their inability to attend the 134th meeting of GEAC, namely

- Dr. Ranjini Warrier
- Dr. Renee Borges
- Dr. Sushil Gupta and
- Dr. Vijendra Mishra

As many of the ex-officio members did not come for the meeting, the Chairman directed the Secretariat to send a note to them also requesting them to ensure their participation in GEAC meetings.

Decisions:

i. Leave of absence was granted to four members.
ii. A note may be sent to ex-officio members who did not come for the meeting.

Action: GEAC Secretariat

Agenda Item No. 2: Confirmation of minutes of the 133rd GEAC meeting

The draft proceedings of the 133rd meeting of GEAC held on May 11, 2017 at New Delhi were circulated to the Members vide email on 26.10.2017 seeking their comments. No comments were received from any of the Members.

Decision:

Members confirmed the proceedings of the 133rd GEAC meeting.

Action: GEAC Secretariat

Agenda Item No. 3: Action taken report on the decisions taken in the 133rd GEAC meeting

The Member Secretary, GEAC briefed about the action taken on the decisions of the 133rd meeting of GEAC, informing that on most of the items action has been taken, and action on remaining items is in progress.

In response to the Chairman's query regarding pending action in respect of agenda items 6.1 and 6.3 of the 133rd meeting, the Member Secretary informed that a clarification has been sought from Review Committee on Genetic Manipulation (RCGM) as to the meetings of RCGM in which these two applications were recommended. RCGM was requested to expedite sending the information to enable GEAC Secretariat to take action on these items.

Decision:

i. RCGM may provide requisite information to GEAC Secretariat to enable it to take action on agenda items 6.1 and 6.3 of the 133rd meeting of GEAC.

Action: RCGM and GEAC Secretariats

Agenda Item No. 4: Applications related to Commercial/ Environmental Release

4.1 Application for Environmental release of Transgenic Mustard Hybrid DMH-11 and Parental lines containing events *bn 3.6 and modbs 2.99* developed using barnase, barstar and bar genes by M/s. Centre for Genetic Manipulation of Crop Plants (CGMCP), University of Delhi.

The Members took note that the application related to "Environmental release of Transgenic Mustard Hybrid DMH-11 and parental lines containing events *bn 3.6 and modbs 2.99* developed using barnase, barstar and bar genes" submitted by M/s. Centre for Genetic Manipulation of Crop Plants (CGMCP), University of Delhi was referred back to GEAC for its re-examination pursuant to receipt of several representations both in support and against after the 133rd meeting of GEAC held on 11.05.2017.

Keeping in view the above, the GEAC examined all the representations and reiterated that these representations have already been deliberated extensively while taking the decision in 133rd meeting of GEAC.

After detailed discussion and keeping in view that the application has been referred back to GEAC for re-examination, the committee agreed that the applicant may be advised to undertake field demonstration in an area of 5 acres at 2-3 different locations subject to the conditions proposed in recommendations of Sub-committee on GM Mustard, accepted by GEAC in its 133rd meeting, for the purpose of generating additional data on effect of GM Mustard on honey bees and other pollinators and honey, and on soil microbial diversity. Towards this, the applicant may submit a detailed protocol to GEAC for its consideration and approval.

Decision:

i. Applicant may be advised to undertake field demonstration on GM Mustard in an area of 5 acres at 2-3 different locations with a view to generate additional data on honey bees and other pollinators and honey, and on soil microbial diversity.

Action: GEAC Secretariat

4.2. Permission for Environmental approval of process change in manufacture of a chiral intermediate R-Phenyl Acetyl Carbinol (R-PAC) by a greener efficient biotransformation process using a category-1 GMO yeast by Ms. Embio Ltd., Mumbai

The application submitted by M/s Embio Limited, Mumbai, seeking permission for production of R-Phenyl Acetyl Carbinol (R-PAC) on commercial scale at 40KL, and the Environmental Risk Management & Safety Plan (ERM&SP) submitted by the applicant were examined by the Committee.

The Committee also discussed the manufacturing process to assess any possibility of biological material coming into contact with external environment, and also the effluent treatment plan submitted by the applicant. Based on examination of the Risk Assessment and Risk Management (RARM) report submitted by RCGM, and the ERM&SP plan submitted by the applicant, the Committee recommended the application of Ms. Embio Ltd. for production of R-PAC at 40 KL by using Generally Regarded As Safe (GRAS) Category-1 yeast, noting that this falls under least risk category of microorganisms.

Decision:

i. GEAC recommended the application of Ms. Embio Limited seeking permission for environmental approval of process change in manufacture of a chiral intermediate R-Phenyl Acetyl Carbinol (R-PAC) by a greener efficient biotransformation process using a category-1 GMO yeast at 40 KL.

Action: GEAC Secretariat

Agenda Item No. 5: Applications related to Confined Field Trials of GE crops (Event Selection/ BRL-I/ BRL-II Trials)

5.1: Permission to conduct Elite Event Selection (EES) Trial with marker free transgenic rice events with single gene - W2-MF-004, W2-MF-010, O1-MF-006, O1-MF-010 and two gene stacks - W2-MF-004 x O1-MF-010 and W2-MF-010 x O1-MF-010 by Ms. Bioseed Research India

The Committee examined the application of Ms. Bioseed Research India, Hyderabad, related to conduct of Elite Event Selection Trial (EEST) with marker free transgenic rice events with single gene: W2-MF-004, W2-MF-010, O1-MF-006, O1-MF- 010 and two gene stacks: W2-MF-004 x O1-MF-010, and W2-MF-010 x O1-MF-010, in the company-owned premises in Hyderabad.

The Committee noted that this application was earlier approved by GEAC in its 129th meeting held on 20.06.2016, and in order to avail the exemption of requirement of No-Objection-Certificate (NOC) for conduct of EST as per decision taken in GEAC in its 130th meeting held on 11.08.2016, the applicant had re-submitted its application to RCGM, which was approved in its 161st RCGM meeting held on 14.11.2017 and was recommended to GEAC. Considering the above, the Committee recommended the application of Ms. Bioseed Research India, Hyderabad.

Decision:

The application of Ms. Bioseed Research India was recommended by the GEAC.

Action: GEAC Secretariat

5.2 Application for conduct of EST of Yellow Stem Borer resistant marker free transgenic rice events (31 Events) expressing Cry 2 Aa2 gene at Telangana by Ms. Rasi Seeds Pvt. Ltd

The Committee examined the application of Ms. Rasi Seeds Pvt. Ltd, for conduct of event selection trials of yellow stem borer resistant marker free transgenic rice events (31 Events) expressing *cry 2 Aa2* gene in company's own premises at Masaipet, Telangana.

The Committee noted that this application was earlier approved by GEAC in its 129th meeting held on 20.06.2016, and in order to avail the exemption of requirement of No-Objection-Certificate (NOC) for conduct of EST as per decision taken in GEAC in its 130th meeting held on 11.08.2016, the applicant had re-submitted its application to RCGM, which was approved in its 159th RCGM meeting held on 08.08.2017 and was recommended to GEAC. Considering the above, the Committee recommended the application of Ms. Rasi Seeds Pvt. Ltd

Decision:

The application of Ms. Rasi Seeds Pvt. Ltd was recommended by the GEAC.

Action: GEAC Secretariat

Agenda Item No. 6: Applications related to Import/ Export

Applications related to Import of Grains/ Oil

6.1 Import of Crude and Processed Oil derived from Dicamba Tolerant Soybean (Event MON 87708) from USA for consumption purpose in India by Ms. Monsanto Holdings Pvt. Ltd

6.2 Import of Soybean Grain & Oil derived from Herbicide Tolerant Soybean (Event DAS-44406-6) by Ms. Dow Agro Sciences Pvt. Ltd

6.3 Import of Soybean Grain & Oil derived from Insect Resistant Soybean (Event DAS-81419-2) by Ms. Dow Agro Sciences Pvt. Ltd

6.4 Import of Soybean Grain & Oil derived from Herbicide Tolerant Soybean (Event DAS-68416-4) by Ms. Dow Agro Sciences Pvt. Ltd

6.5 Import of partially processed soybean oil derived from herbicide tolerant soybean (Event SYHTOH2) by Ms. Syngenta Biosciences Pvt. Ltd

6.6 Import of oil derived from Roundup Ready Canola (Event RT73) from USA for consumption purpose in India by by Ms. Monsanto Holdings Pvt. Ltd.

6.7 Import of High Oleic Soy Plenish Oil from DP 305423-1x MON 04032-6 by Ms. Pioneer Hi-Bred Seeds Pvt. Ltd

6.8. Import of oil derived from Roundup Ready2 Canola (Event MON 88302) from USA for consumption purpose in India by Ms. Monsanto Holdings Pvt. Ltd

6.9 Import of Herbicide Tolerant Canola oil derived from HT canola (Event MS 11 x RF 3) by Ms. Bayer Biosciences Pvt. Ltd

The Committee deliberated on the above applications related to import of GM Soybean grain and crude/ processed/ partially processed oil derived from Genetically Modified (GM) Soybean / Canola.

Taking cognizance of the order of Hon'ble Supreme Court vide its order dated 11.08.2017 in matters related to Writ Petition No. 173/2006 and Writ Petition No. 11/2008, directing the Food Safety and Standards Authority of India (FSSAI) for framing of relevant guidelines and regulations in connection with genetically engineered and modified food under Section 22 of FSS Act, 2006, and placing it for consideration by the Parliament, the Committee agreed that all applications for import of oil may be transferred to FSSAI for its consideration. Further, the Committee agreed that the applications which are meant for import of GM grain may first be considered by GEAC.

The matter relating to import of GM grain was discussed at length. The Committee noted that there could be several concerns, including possibility of escape of GM grains, that may have the ability to propagate in the environment. In this context, the representative from Plant Quarantine informed that import of grains in bulk for processing is allowed subject to certain conditions, which include that grains are devitalized either by splitting or by heating to 120°C.

The Committee agreed to put in place a process for considering proposals for bulk import of GM grains. Towards this, these applications would be forwarded to RCGM for preparing RARM, which would then be considered in a Sub-committee of GEAC to be set up for this purpose, the report of which would thereafter be considered by GEAC. This entire exercise, it was agreed may be completed in six months.

The representative of FSSAI informed that pursuant to the directive of the Hon'ble Supreme Court, they are in the process to frame relevant guidelines and that FSSAI could consider the applications after the guidelines/ regulations are notified. He also informed that FSSAI is bringing out a policy on labeling, which is at draft notification stage. The Committee requested FSSAI to expedite putting in place the relevant guidelines and policy on labeling at the earliest.

Decision

i. Applications for import of oil may be transferred to FSSAI.
ii. For considering proposals for bulk import of GM grains for processing, these may be forwarded to RCGM for preparing RARM to be considered by a Sub-committee of GEAC, before it is considered by the committee.

iii. FSSAI may expedite putting in place requisite guidelines and policy on labeling at the earliest

Action: RCGM and GEAC Secretariats, FSSAI

6.10 Application of import of raw and refined sugar derived from sugarcane event CTC175-A by Ms. Centre De Technologia Canavieria, Brazil

The Committee deliberated on the above application related to import of raw and refined sugar derived from GM Sugarcane from Centro de Technologia Canavieira.

Taking cognizance of the order of Hon'ble Supreme Court vide its order dated 11.08.2017 in matters related to Writ Petition No. 173/2006 and Writ Petition No. 11/2008, directing the Food Safety and Standards Authority of India (FSSAI) for framing of relevant guidelines and regulations in connection with genetically engineered and modified food under Section 22 of FSS Act, 2006, and placing it for consideration by the Parliament, the Committee agreed that this applications for import of raw and refined sugar derived from GM sugarcane may be transferred to FSSAI for its consideration.

Decision:

i. The application to be transferred to FSSAI

Action: GEAC Secretariat & FSSAI

Applications related to Import of Veterinary Vaccines

6.11 Permission for import of Cell associated Live Recombinant Herpes Virus of Turkey Strain HPV360 (Innovax) by Ms. Intervet India Pvt. Ltd

The Committee reviewed the application submitted by Ms. Intervet Pvt Ltd. seeking permission for import of Cell associated Live Recombinant Herpes Virus of Turkey Strain HPV360 (Innovax) for use in treatment of Newcastle Disease (ND), Infectious Bursal Disease (IBD) and Marek's Disease (MD) in Poultry as a veterinary vaccine.

The committee approved the application of Ms. Intervet Pvt Ltd. and advised the applicant to generate laboratory / in vivo efficacy data under Indian conditions. The applicant was also advised to approach Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture and Drug Controller General of India etc. for seeking further approvals as per existing Indian laws for import of veterinary vaccines.

Decision:

i. The application submitted by Ms. Intervet Pvt Ltd. seeking permission for import of Cell associated Live Recombinant Herpes Virus of Turkey Strain HPV360 (Innovax) was recommended by the GEAC.

Action: GEAC Secretariat

Applications related to Import of Dried Distillers Grain Soluble

6.12 Permission for import of DDGS made from GM Corn from USA by M/s ABIS Export (I) Pvt. Ltd

6.13 Permission for import of DDGS made from GM Corn from USA by M/s Miki Maize Milling Pvt. Ltd

6.14 Permission for import of DDGS made from GM Corn from USA by M/s Kukoochku Poultry Farm

6.15 Permission for import of DDGS made from GM Corn from USA by M/s Srinivasa farms private Ltd

6.16 Permission for import of DDGS made from GM Corn from USA by M/s Shivshakti Agro (India) Ltd

6.17 Permission for import of DDGS made from GM Corn from USA by M/s Gujarat Ambuja Exports Ltd

6.18 Permission for import of DDGS made from GM Corn from USA by M/s Siddhivinayak Poultry Breeding Farm & Hatcheries Pvt Ltd

6.19 Permission for import of DDGS made from GM Corn from USA by M/s Suguna Foods

6.20 Permission for import of DDGS made from GM Corn from USA by M/s Anmol India Ltd.

The Committee was informed that the applications received by GEAC Secretariat on DDGS have been sent to Department of Animal Husbandry Dairying & Fisheries and Ministry of Commerce, copied to Ministry of Agriculture (Seeds division) for comments, which are awaited.

The Committee deliberated extensively on the matter related to import of Dried Distillers Grain Solubles (DDGS) from USA obtained as a co-product of dry milled ethanol production from GM corn, and to be used as animal feed.

In this context, the Committee examined the minutes along with the draft Guidelines for import of DDGS submitted by Prof. Veluthambi, Chairman, Sub-committee for preparation of these Guidelines. After discussions, the Committee approved the draft Guidelines on DDGS.

Further, the Committee agreed that after Ministry's approval of the proceedings of GEAC accepting the guidelines on DDGS, the applicants may be requested to submit their applications in accordance with the Guidelines for import of DDGS. Thereafter, comments of Department of Animal Husbandry Dairying & Fisheries may be sought, as animal feed comes under their mandate, before the applications are considered by GEAC.

Decisions:

i. The Guidelines on Dried Distillers Grain Solubles (DDGS) prepared by the Sub-committee chaired by Prof. K. Veluthambi were accepted.

ii. Applicants may be advised to submit their applications in accordance with the Guidelines on DDGS.

iii. Comments of Department of Animal Husbandry Dairying & Fisheries (DAHDF) may be sought on the applications before their consideration by GEAC.

Action: GEAC Secretariat

Agenda Item No. 7: Additional Items for consideration/ information

7.1 Status of Guidelines and Standard Operating Procedures to be framed for conduct of Event Selection Trials

The Committee examined the Minutes along with the draft Guidelines and standard operating procedures (SOPs) for conduct of event selection trials (ESTs) submitted by Prof. Veluthambi, Chairman, Sub-committee assigned with the task. The Committee noted that as per the newly adopted guidelines for ESTs, Institutional Biosafety Committee (IBSC) would be responsible for ESTs, and which would be regularly monitored through a committee with a representative each from RCGM and GEAC.

After extensive deliberations, the Committee approved the Guidelines. The Committee also agreed that these would apply prospectively, to applications that are received henceforth, and not to previously received applications that have followed the earlier procedure.

Decision:

i. The guidelines and standard operating procedures (SOPs) for conduct of event selection trials prepared by the Sub-Committee Chaired by Prof. K. Veluthambi were accepted by the Committee.

Action: GEAC Secretariat

7.2 Revision of GEAC Forms seeking Permissions under various categories for receipt of GEAC applications online

The Committee took note of the progress made in developing a new website (www.geacindia.gov.in) with a view to facilitate ease of doing business through receipt of applications in online mode, as well as the exercise for e-permitting and e-monitoring which is underway. The Committee suggested that the website may be kept updated by uploading latest information including minutes of all GEAC meetings, relevant guidelines, Acts, knowledge products and resource documents etc. for ease in accessing requisite information by all stakeholders including the applicants.

The Committee agreed to the changes made in the application forms as part of digitization process, so as to have uniformity in submission of online applications. The Committee also agreed to replace Form II-B with the format provided in Environmental Risk Assessment (ERA) Guidelines, 2016, which was adopted by GEAC in its 130th meeting held on 11.08.2016.

The Chairman desired that the process of receiving applications online may be made fully functional within 15 days so that no applications are received in hard copy. He further desired that the exercise for e-permitting and e-monitoring may also be completed at the earliest.

Decisions:

i. The Committee approved the changes proposed in the application forms for receiving online applications and suggested that relevant forms of RCGM may be harmonized wherever required.
ii. Portal for receiving online applications may be made operational in 15 days.
iii. Exercise for e-permitting and e-monitoring may be completed at the earliest.

7.3 Updation of Guidelines and SOPs for conduct of Confined Field Trials published jointly by MoEF&CC and DBT in 2008

The Committee was informed that pursuant to adoption of "Guidelines and Standard Operating Procedures for Confined Field Trials (CFTs) of Regulated Genetically Engineered (GE) Plants", 2008 developed jointly by MoEFCC and DBT, no revision has been made in those guidelines. The Committee taking note of an exercise undertaken in the past for revision of these guidelines, agreed to constitute a Sub-committee with Dr. Veluthambi, Dr. C.R. Babu, Dr. S.R. Rao, Dr. O.P. Govila, Dr. S.K. Apte as Members and to be coordinated by Dr. Murali Krishna.

The matter relating to the possibility of merging BRL-I and BRL-II trials was discussed, but the Committee favored retaining the present system.

Decision:

i. A Sub-committee may be constituted to revise the guidelines and standard operating procedures for conduct of confined fields of regulated GE plants, 2008
ii. The present system of separate BRL-I and BRL-II trials may be retained.

Action: GEAC Secretariat

7.4 Update on status of report of Field Inspection and Scientific Evaluation Committee

The Committee took note of the setting up by DBT of a Field Inspection and Scientific Evaluation Committee (FISEC) for ascertaining the extent of illegal spread of Herbicide Tolerant (HT) Cotton in India as per directions of Prime Minister's Office. Dr. S.R. Rao was invited to inform the Committee about the progress made by FISEC.

Dr. S.R. Rao informed the Committee about the field visits undertaken by this inter-ministerial and inter-state committee which collected several thousand samples from fields. He further informed that the report is under finalization. The Committee requested that the report may be submitted at the earliest.

Decision:

i. DBT may be requested to provide a copy of the report of the FISEC at the earliest.

Action: GEAC Secretariat

7.5 Discussion on Gallagher's report received from ICMR on Safety Studies on Bt Brinjal

The Committee reviewed the report received from Indian Council of Medical Research (ICMR) which had examined in detail the observations made by Dr. Gallagher on toxicological studies being conducted in rats and mice with *Bt* Brinjal. The Committee noted the conclusions in the report of ICMR and suggested that GEAC Secretariat may take further action to submit implementation report to Parliament for dropping of the Parliament Assurance.

Decision:

i. The Committee took note of the conclusions made in the ICMR report.
ii. Action may be taken by MoEFCC for dropping of the Parliament Assurance.

Action: GEAC Secretariat

8 Proposals seeking approvals by Chairman, GEAC for additional location or extension of validity period of approvals

8.1 Request for extension of validity of GEAC permit to conduct BRL-1 trials and seek permission for production of transgenic Maize hybrids containing event TC 1507 (DAS-01507-1) during appropriate season 2018-19 and 2019-20 by Ms. Dow Agro Sciences Pvt. Ltd

8.2 Request for extension of validity of GEAC permit to conduct BRL-2 trials on Wide Strike Transgenic Cotton in Central Zone during Kharif during appropriate season 2018-19 and 2019-20 by Ms. Dow Agro Sciences Pvt. Ltd

The Committee deliberated on the proposal to review the decision taken in 125th meeting of GEAC held on 11.12.2015, wherein it was agreed that applications requiring extension of validity, additional location etc. which are of routine in nature and in applications where there is no change in technical details of the projects, can be approved with the approval of Chairman, GEAC. After discussing at length, the Committee reiterated its previous decision taken in 125th meeting, that applications which are routine in nature without change in technical details may be approved by Chairman, GEAC.

Accordingly, applications submitted by M/s Dow Agro Sciences India Pvt. Ltd. for extension of validity and addition of additional locations (Karnataka, Madhya Pradesh, Uttar Pradesh, Gujarat and Bihar) for conduct of Biosafety Research Level-I (BRL-I) trials and seed production of transgenic maize hybrids containing event TC1507 (DAS-01507-1), and for extension of validity and addition of additional location (Madhya Pradesh) for conduct of Biosafety Research Level-II (BRL-II) trials on Wide Strike™ cotton hybrids, namely WS103 and WS 106, containing (Cry1F event 281-24-236+Cry1AC event 3006-210-23) in Central zone at eight locations in Madhya Pradesh, Gujarat and Maharashtra during appropriate seasons(s) of 2018-19 and 2019-20 can be approved by the Chairman, GEAC.

Decision:

i. The Committee reiterated its earlier decision taken in its 125th meeting that applications where there is no change in technical details of the projects, can be approved by Chairman, GEAC.

Action: GEAC Secretariat

9. Representations on illegal soybean being imported into India

The Committee took note of the representation received by GEAC, about illegal import of GM Soybean, in response to which, MoEFCC has issued a letter to Director General Foreign Trade to take appropriate action and issue suitable directives for curtailing the illegal import of unapproved GM soybean seeds/ grains, with copy to DBT, Ministry of Agriculture, Customs and Plant Quarantine.

10. Any other item with the permission of the Chair

10. Four applications on Event Selection Trials (ESTs) by Ms. Metahelix Life Science Ltd, Bangalore

a) **Event selection trial for lepidopteran insect resistant transgenic cotton events (total 14 events- 12 events to be screened in line background and 2 events to be screened in hybrid background) containing cry1Ac gene at company manned secured locations (long leased lands) at Bangalore, Aurangabad, Hyderabad and Dehgan.**

b) **Event selection trial for herbicide tolerant transgenic cotton events (total 12 events- 8 events to be screened in line background and 4 events to be screened in hybrid background) containing synthetic EPSPS gene at company manned secured locations (long leased lands) at Bangalore, Aurangabad, Hyderabad and Dehgan**

c) **Event selection trial for lepidopteran insect resistant and herbicide tolerant transgenic maize events (total 13 events- 10 events to be screened in line background and 3 events to be screened in hybrid background) containing cry1Ab gene and synthetic EPSPS gene at company manned secured locations (long leased lands) at Bangalore, Aurangabad, Hyderabad and Dehgan.**

d) **Event selection trial for lepidopteran insect resistant and herbicide tolerant transgenic maize events (total 12 events- 11 events to be screened in line background and 1 events to be screened in hybrid background) containing cry1F gene and synthetic EPSPS gene at company manned secured locations (long leased lands) at Bangalore, Aurangabad, Hyderabad and Dehgan.**

10.1 The Committee took note of the four applications seeking permission for conduct of ESTs by Ms. Metahelix Life Sciences Pvt. Ltd. were received by GEAC Secretariat on 19.3.2018, and emailed to them the same day. The Members felt that they need some more time to examine these applications. The Committee agreed that the Members may send their comments on these applications by email, and these can be considered further by GEAC in its next meeting depending on the comments received.

Decision:

i. The Committee Members may communicate their comments on the applications by email, for further consideration by GEAC in its next meeting.

Action: GEAC Secretariat & Members

10.2 Other relevant issues

10.2 The Chairman suggested that the Committee may enhance efforts towards communication and dissemination of scientifically validated information relating to Genetically Modified Organisms (GMOs), inter-alia through relevant organizations. The matter relating to a policy/ plan / strategy for

use of modern biotechnological tools by concerned ministries/ departments such as DBT and M/o Agriculture was also discussed by the Committee.

Action: GEAC Secretariat & Members

10.3 Next meeting of GEAC

10.3 The Committee agreed that it may meet quarterly. Accordingly, the next GEAC meeting may be held in the second fortnight of June 2018.

Decision:

i. The next meeting of GEAC may be scheduled in the second fortnight of June 2018.

Action: GEAC Secretariat

The meeting ended with a vote of thanks to the Chair.

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Annexure-1

LIST OF PARTICIPANTS

Official Members who participated			
1	**Shri Arun Kumar Mehta,** Chairman GEAC & Additional Secretary, Ministry of Environment, Forest & Climate Change, Jor Bagh, Aliganj , New Delhi.	5	**Dr. S. R. Rao** Senior Advisor, Department of Biotechnology, C.G.O. Complex, New Delhi.
2	**Dr K. Veluthambi,** Co-chairman Professor (retd.) & Head, School of Biotechnology, Madurai Kamraj University, Madurai.	6	**Dr. S. K. Apte,** Director (Retd.), Bio-Medical Group, BARC, Mumbai.
3	**Dr. Sujata Arora,** Advisor & Vice-Chairperson, GEAC Ministry of Environment, Forest & Climate Change, Jor Bagh, Aliganj, New Delhi.	7	**Dr. Sunil Bakshi** Advisor Food Safety and standards Authority of india (FSSAI), FDA Bhawan, Next to Rashtriya Bal Bhawan, Kotla Road ,New Delhi.
4	**Dr. Murali Krishna Chimata** Scientist-D, Member Secretary (GEAC) Ministry of Environment, Forests & Climate Change, Jor Bagh, Aliganj , New Delhi.		
Expert Members			
8	**Prof. C.R. Babu** Professor Emeritus Centre for Environmental Management of Degraded Ecosystems, School of Environmental Studies, University of Delhi, Delhi	11	**Dr. S.S. Banga** National professor, ICAR, Punjab Agriculture University, Ludhiana
9	**Dr. Ramesh Sonti** Director National Institute of Plant Genome Research (NIPGR), New Delhi.	12	**Prof. O. P. Govila** Former Prof. of Genetics, Indian Agricultural Research Institute. "MANAS", House No. BU- 58, Pitampura, Delhi .
10	**Dr. V V Ramamurthy** Former Professor , Entomology Division, IARI, New Delhi Centre for Ecological Sciences, Indian Institute of Science, Bangalore.	13	**Dr. N. Sathyanarayana** **Joint Director** Plant protection Advisor Old CGO Complex ,NH-IV, Faridabad, Haryana-121001.
Member who did not participate			
1	**Dr. B. Sesikeran,** Chairman RCGM &Former Director Former Director, National Institute of Nutrition, Hyderabad	8	**Shri K.K. Sinha** Industrial Advisor, Department of Industrial Policy & Promotion, Ministry of Commerce & Industry, New Delhi.
2	**Dr. A.N. Singh,** DDG (Crop Science), Indian Council of	8	**Shri Ashwani Kumar** Joint Secretary (Seeds) Department of Agriculture & Cooperation Ministry of

	Agricultural Research, Krishi Bhawan, New Delhi.		Agriculture, Krishi Bhawan, New Delhi.
3	**Dr. Vijay Kumar,** Scientist G Head, Division of Basic Medical Sciences, Indian Council of Medical Research (ICMR) Ministry of Health and Family Welfare Ramalingaswami Bhavan , Ansari Nagar, New Delhi	9	**Dr. Renee M Borges** Professor, Centre for Ecological Sciences, Indian Institute of Science, Bangalore.
4	**Dr Vijendra Mishra** Associate Professor, National Institute of Food Technology, Enterprenuraship of Management (NIFTEM) Kundli, Sonepat, Haryana	10	**Dr. Luther M. Rangreji** Senior Legal Officer Ministry of External Affair, Legal and Treaties Division , Jawaharlal Nehru Bhawan, Janpath New Delhi.
5	**Prof. B.P Srinivasan** Director, Delhi Institute of Pharmaceutical Science and Research, Pushp Vihar, Sector 3 New Delhi	11	**Dr. Ranjini Warrier** Former Adviser Ministry of Environment, Forest and Climate Change, New Delhi.
6	**Dr. Sushil Gupta** Former Chairman, Central Ground Water Board (CGWB) & Central Ground Water Authority (CGWA), GOI, New Delhi	12	**Mrs. Swati Srivastava** Assistant Drugs Controller, (India) Central Drugs Standard Control Organizations, FDA Bhawan, Kotla Road, New Delhi-110002.

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