Please find enclosed, for further necessary action, a copy of the Record of Discussions (RoD) of the meeting chaired by the Prime Minister with Scientists from across the Science and Technology spectrum held on 19.08.2015 at 7 RCR, New Delhi.

(Brijesh Pandey)
Deputy Secretary
Tel. No. 23013586

D.O. No. 195
Date: 5/10/2015

Cabinet Secretary
Secretary, Ministry of Earth Sciences
Secretary, Dept. of Defence Research and Development
Secretary, Dept. of Agriculture Research and Education
Secretary, Dept. of Health Research
Secretary, D/o Biotechnology
Secretary, D/o Science and Technology
Secretary, D/o Scientific and Industrial Research
Secretary, D/o Atomic Energy
Secretary, D/o Space
DG, CSIR
PS to Minister for S&T and ES
PS to Vice Chairman, NITI Aayog
PS to Minister of State for S&T and ES
PS to PSA to Govt. of India
PS to the Member (Shri V.K.Saraswat), NITI Aayog

Sr. DDG(A) ICMR OFFICE
Diary No. 3399
Date 5/10/2015

PMO ID no. 390/31/C/17/2015-ES-II Dated: September 28, 2015

Circulate to all ICMR Scientists

Kindly see my notes inside

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2/10/2015

Sr. DDG(A) / Admn. II

06/10/15 A.D.G.(AT) / A.O. (Admn. II)

For imm n a pl 6/10/15

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Venue: 7-RCR, New Delhi

List of participants is Annexed.

2. The PMO invited about 30 Scientists from across the Science and Technology spectrum for a discussion at 4 PM on 19 August 2015. The list of those who attended and their affiliation and contact information is appended.

3. Minister of Science & Technology & Earth Sciences Dr. Harsh Vardhan; Vice Chairman NITI Aayog Dr. Arvind Panagariya; Member NITI Aayog Shri V.K. Saraswat; Minister of State for Science & Technology & Earth Sciences Shri Y.S. Chowdary; and Principal Scientific Advisor to Government of India Dr. R. Chidambaram and Secretaries (DAE, Space, DST, Earth Sciences, Health Research & DG ICMR, DBT, DG-CSIR, DG-DRDO) were present at the interaction.

4. Key points made by the Prime Minister are as under:

a. The Prime Minister appreciated the work done by the scientists. He called upon the scientific community to work towards solving the problems faced by India, including in the emerging critical areas of energy and water. Describing the task of cleaning up the rivers, including the Ganga, as a "scientific project," the Prime Minister said it was a challenge to Indian scientists to come up with innovative solutions to achieve this goal. (***Action:*** **DST, DBT, CSIR**).

b. The Prime Minister said Indian science must address the unique healthcare needs and challenges that confront India. He mentioned the prevalence of malnutrition, and diseases, such as sickle-cell anemia in certain tribal areas, as illustrations. He also called for overlapping traditional knowledge with modern systems. He said India must become

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ICMR should launch large programs in both these areas.

problems, the Prime Minister called upon Indian scientists to work towards developing more efficient equipment, which could revolutionize the entire sector (*Action: DST with Heavy Industry and MNRE*).

d. Importantly, asked the Indian scientific community to come up with ideas and concepts for global leadership (*Action item for all Science Departments*).

e. Reiterating that while science is universal, technology must be local, the Prime Minister called for innovations in the agriculture sector that would lower wastage of agricultural produce, and eliminate entirely, India's import of agricultural products. As an illustration, the Prime Minister mentioned that India produces most of the global castor seed, and yet other countries import raw castor seeds from India, to add huge value, and supply the resulting products globally. (***Action*: DST, DBT and ICAR**).

f. On the administrative front, the Prime Minister said that we should not be constrained by a 'silo-approach', there should be greater coordination and there should be a multi-disciplinary environment for research. Institutions should closely collaborate with each other and share resources efficiently (***Action: Secretary Biotech should use example of bio-clusters to meet with other science developments to develop similar synergy.***)

g. Responding to concerns on complex and delayed financial systems, the Prime Minister was strongly of the view that science cannot have the same rules of financial- and people- management that, for example, highway construction may need. Science needs flexibility if we are to make strong demands of scientists. He asked the Vice-Chair of the NITI Aayog to work with the Finance Ministry to speedily come up mechanisms that made such processes more efficient (***Action: Science***

items are as under:

a. Prof. Gadagkar stressed the need for generous material and moral support from the government and increase spending on science research.

b. Prof. Krishna Ganesh highlighted major achievers in science research from our university system. He emphasized the need to establish world class facilities.

c. Prof. Spenta Wadia highlighted role of international experts

d. Prof. Santanu Bhattacharya suggested the promotion of innovation centres in strategic areas, establish start-ups, piloting, and incubation & commercialization facilities.

e. Prof. Mythily Ramaswamy highlighted the importance of an interdisciplinary culture in mathematics with other area.

f. Prof. Tarun Souradeep presented key achievements in the field of astronomy and astrophysics and liked big-projects to 'Make in India'.

g. Dr. Talat Ahmad highlighted the insufficient higher education centres and trained human resources in Earth Sciences.

h. Prof. Ashok Jhunjhunwala emphasized the need for special focus for translational research in S&T community. He further stressed the importance taking risk in S&T and learn to Lead, not always follow.

i. Dr. Baldev Raj: Stressed the need for a new level of coordination is needed for new programmes.

j. Prof. J. Srinivasan proposed a goal for science-based improvement of short term forecasting of extreme rainfall and heat waves in next five years.

personalized medicine for maximum [illegible] health research). Partner with Digital India to collect, examine and evaluate data about epidemiology, diseases burden, clinical trials being generated all over the country. (Action, MeITY, DST, DBT, ICMR).

Jawaharlal Nehru Univ, NIE, NIMHANS, NIRT, NARCL, JALMA, NARI etc.

l. Professor Dinabandhu Sahoo; Pointed out the opportunities and challenges of science in the NE. The PM intervened to encourage that these be strengthened **(Action: DST, DBT to work with NE States and DoNER).** More workshops in NE — collaborate with centres there

m. Prof. Deepak Pental proposed 3 fold increase in agriculture support; Global leadership in agricultural R&D; Change in land usage- for infrastructure; forage crops and fruit & vegetables as some of the realistic ambitions. He also suggested to develop a Cadre of National Professors who can devotee life time for doing research for the benefit of the society. **(Action DBT to co-ordinate a proposal).** *PM's query: Every year India loses its 20-25% of agriculture produce. Do we have any mechanism to save this? Do we have any process by which we can generate wealth out of waste? Have we mapped the varieties of fodder/ grass which are protein rich? Why cannot we make fodder, which is rich in protein & nutrients and also survives extreme weather conditions?* **(Action: DBT and ICAR to coordinate).**

Emeritus Scientists, ICMR Chairs Propose Adjunct Professors - HRD Div

n. Dr. Rajiv I. Modi presented the success story of Indian Pharma Industry and led India to supply affordable medicines to people around the world. He sought consistent and predictable policies from the Government. Government should also increase GDP spend on healthcare.

6. **Comments from other participants are as under:**

a. Dr. Soumya Swaminathan, DG, ICMR said that diseases such as Malaraia, Tuberculosis, Japanese Encephalitis, etc.) burden indigenous

b. Dr. Ram Viswakarma emphasized the need to support Aroma Industry, which is so far neglected. *PM's view: We should initiate establishing as many start-ups as possible in the aroma sector. Similarly start-ups can also be initiated in NER to tap unique and abundant bio-resource with the help of locals and tribals, which fetch them livelihood.* ***(Action: DST and DBT to push this speedily)*** .

c. Prof. Rohini Godbole emphasized the need to reinstate the Standing Committee for Women in Science. (**Action: DST to establish this committee and ensure its effectiveness)**

d. Dr. Partha Majumder and Dr. Vijay Chandru mentioned it would be possible to initiate mapping of genetic diversity of human, animals and plants in a massive way. (**Action: DBT)**

e. Prof. Rama Govindarajan suggested putting an obligatory participation of interdisciplinary groups for projects, which are of social relevance and being operated in mission mode. (**Action: DST and DBT to coordinate with Cabinet Secretary)**

f. Shri P. K. Sinha, Cabinet Secretary pointed out need for better inter-institutional and departmental coordination (**Action: DST and DBT to coordinate)**

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

1. Dr. Sailesh Nayak, Secretary, Ministry of Earth Sciences
2. Prof. Ashutosh Sharma, Secretary, Dept. of Science and Technology
3. Prof. K. VijayRaghvan, Secretary, Dept. of Biotechnology
4. Dr. R. K. Sinha, Secretary, Dept. Atomic Energy
5. Dr. A. S. Kiran Kumar, Secretary, Dept. of Space
6. Dr. S. Ayyappan, Secretary, Dept. of Agricultural Research and Education
7. Dr. Soumya Swaminathan, designated, Secretary Health Research, DG ICMR

Scientists giving Presentation

8. Prof. Raghavendra Gadagkar, President, Indian National Science Academy, New Delhi (Overview of Indian Science)
9. Prof. Krishna N. GANESH, Director, **Indian Institute of Science Education and Research-Pune** (Research in the Universities)
10. Prof. Spenta R. Wadia, Former Director, International Centre for Theoretical Sciences, TIFR, Bangalore (Physics)
11. Prof. Shantanu Bhattacharya, Director, Indian Association for the Cultivation of Science, Kolkata (Chemistry)
12. Prof. Mythily Ramaswamy, Centre for Applicable Mathematics-TIFR (Mathematics)
13. Prof. Tarun Souradeep Ghosh, Inter-University Centre for Astronomy and Astrophysics, Pune (Astronomy and Astrophysics)
14. Prof. Talat Ahmad, Vice Chancellor, Jamia Millia Islamia, New Delhi (Geology)
15. Prof. Ashok Jhunjhunwala, Department of Electrical Engineering, IIT-Madras, Chennai (Engineering and Manufacturing S&T)

[illegible]

33 Prof. Srinivas Sarin, [illegible] Biology & Regenerative Medicine (inStem), Bangalore

34 Dr Partha Majumder, Director National Institute of Biomedical Genomics, Kalyani

35. Dr. Vijay Chandru, Chairman, Strand Life Sciences, Bangalore

36. Dr. Madhu Dikshit, Director, CSIR-Central Drug Research Institute, Lucknow

37. Dr. Ram Vishwakarma, Director, CSIR-Indian Institute of Integrative Medicine, Jammu

Other Participants

1. Dr. Harshvardhan, Minister of Science & Technology & Earth Sciences
2. Dr. Arvind Panagariya, Vice Chiarman, NITI Aayog
3. Shri Y.S. Choudhary, Minister of State for S&T & ES
4. Shri V.K. Saraswat, Member, NITI Aayog
5. Dr. R. Chidambaram, Principal Scientific Advisor to Government
6. Cabinet Secretary

Participants from PMO:

1. Principal Secretary to PM
2. Addl. Principal Secretary to PM
3. Additional Secretary to PM
4. Joint Secretary (B), PMO
5. Joint Secretary (J), PMO
6. Deputy Secretary (B), PMO

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