

**Minutes of the Meeting of the Core Group of RuTAG IIT Delhi held on  
August 17, 2016 in the CRDT Committee Room, Block-III, Room No. 290  
IIT Delhi**

August 27, 2016

A meeting of the Core Group of RuTAG IIT Delhi was held on August 17, 2016 in the CRDT Committee Room, IIT Delhi under the chairmanship of Prof. R. R. Gaur. Following people were present:

- Prof. R. R. Gaur, Chairman, Core Group, RuTAG, IIT Delhi
- Major S. Chatterjee, Senior Project Consultant and Member, Core Group, Scientific Consultant, Office of the PSA, Vigyan Bhavan Annexe, New Delhi
- Prof. Rajendra Prasad, Co-PI, RuTAG IIT Delhi
- Prof. V. K. Vijay, Co-PI, RuTAG IIT Delhi
- Dr. D. Raghunandan, CTD, New Delhi (NGO Expert)
- Prof. Sangeeta Kohli, PI of the project on “Improvement of Furnace for Bangles Making and Improving the Working Conditions of Artisans”
- Prof. M. R. Ravi, Co-PI of the project on “Improvement of Furnace for Bangles Making and Improving the Working Conditions of Artisans”
- Prof. S. K. Saha, Coordinator/PI and Convener, Core Group, RuTAG IIT Delhi
- Mr. Sankalp Lahiri, Research Scholar working on the project entitled “Design and Development of a Low Cost Ground Water Level Measuring Device.”
- Prof. Ajit Kumar, PI of the project on “Improving the Design of Bullock Driven Tractor to make it more user friendly”
- Prof. B. P. Patel, PI of the project on “Development of a low cost small scale unit for crushing, sieving, iodizing and packaging raw salt for tribal population”
- Mr. Yogeshwar Kumar, Jan Samarth NGO
- Mr. Raj Kumar Gupta, Senior Project Assistant, RuTAG IIT Delhi
- Mr. Davinder Pal Singh, Project Associate, RuTAG IIT Delhi
- Mr. Prabhat Kumar, On Contract, RP03164, IIT Delhi
- Mr. Mangal Sharma, Project Attendant, RuTAG IIT Delhi

Prof S. K. Saha welcomed Chairman, Members of the Core Group and participants. With the permission of the Chairman, he started the proceedings of the meeting.

**Agenda item No. 1: Confirmation of the minutes of the last meeting of the Core Group**

The minutes of the meeting of the Core Group of RuTAG IIT Delhi held on February 17, 2016 were already circulated to all the members/participants of the Core Group. No comments were received. Hence, the minutes of the last meeting were deemed as confirmed.

## **A. Status of On-going Projects:**

### **i. Improvement of Furnace for Bangles making and improving the working conditions of artisans.**

**PI: Prof. S. Kohli, Co-PIs: Prof. M. R. Ravi and Prof. S. K. Saha**

**Prof. Sangeeta Kohli** told that artisans from Bharatpur were invited for the testing of fabricated furnace at IIT Delhi during March 28-30, 2016. Several tests were conducted during three days testing program at IIT Delhi. Artisans appreciated the modified furnace and were happy with the reduced pollution and heat exposure, better seating arrangement, and easier operation of modified *kalbhoot*. One third fuel was used as compared to the existing furnace. For further replication of the furnace, manufacturer and artisans need to be given training of the fabrication processes. Lupin foundation must take initiative to popularize the furnace.

For cost reduction and identification of easy fabrication processes of the furnace, a detailed study of various manufacturing processes along with different materials and fuels is required. Therefore, an extension till March 31, 2017 is required.

She also informed that RuTAG team has visited Bharatpur on June 9, 2016 to discuss the foundation layout of the furnace with the civil engineer of Lupin foundation. Construction work of the furnace foundation has started and is in progress at Unch village, Bharatpur. It is expected that the furnace will be transported and installed at above said location soon.

**Major S. Chatterjee** added that the above said furnace is of a special kind for making joint-less bangles. Any market beyond Bharatpur must be explored by Lupin foundation and also a strategy must be devised for replication of the furnace at village or cluster level.

**Decision:** The Chairman suggested that there is a strong need for follow-up of this project for replicability. The concerned NGO (Lupin Foundation) must be consulted to discuss the issue of the cost incurred during modification of the furnace and also for the commitment and assurance from the NGO for the replication and promotion of the improved furnace developed by RuTAG IIT Delhi. The NGO must be invited to IIT Delhi for a discussion upon above said concerns. The extension till March 31, 2017 was approved.

### **ii. Improving the Design of Bullock Driven Tractor to make it more user friendly.**

**PI: Prof. Ajit Kumar, IGNOU**

**Prof. S. K. Saha** told that successful testing of BDT with bullocks was conducted on June 07, 2016 at Dahina, Rewari, and also the BDT was handed over to Mr. Narpal Singh (a resident of Dahina Village) for further testing and usage. He mentioned that five prototypes of modified BDT have been demanded for pilot testing of the technology for various clusters by Ministry of Rural Development and also two more modified BDT have been demanded by two NGOs during Regional Workshop at Jabalpur for their demonstration centres. Further, Santosh Brothers International, Bulandshahr have been contacted for

manufacturing and dissemination of the modified BDT.

**Prof. Ajit Kumar** added that the primary objective of the project in developing and testing the lifting mechanism have been achieved. For more quantitative observation and data collection, a chart was prepared considering all the testing parameters. One more field test will be conducted soon. He also mentioned that an awareness program or a workshop must be conducted in an area where the attitude level of farmers towards utilization of draught bullocks for farming is high. Therefore, to complete the above said work extension till March 31, 2017 is required.

**Major S. Chatterjee** added that RuTAG must focus upon identifying/pursuing manufactures who are either into the fabrication of BDTs or farm implements or some manufactures at village level as BDTs are not fast moving products.

**Dr. D. Raghunandan** mentioned that a measure of good index for dissemination of technology within the scope of RuTAG would be finding and convincing a manufacturer for the fabrication of BDT.

**Decision:** The Chairman suggested to consult various manufacturers and specifically the one in Bulandshahr for fabrication and dissemination of the developed technology. He also proposed to conduct a workshop to sensitize the manufacturers and farmers. The extension till March 31, 2017 was agreed.

### iii. **Adaptation of Sheep-hair Shearing Machine Developed by IIT Delhi.**

**PI: Prof. S. K. Saha**

**Prof. S. K. Saha** told the committee that two workshops were organized on March 03, 2015 at Rampur, Uttarakhand and during October 11-12, 2015 at Pipalkoti, Uttarakhand. Shearers appreciated the performance of the machine developed by IIT Delhi. Besides, the 2<sup>nd</sup> phase of the project under RuTAG is envisaged for another training with the locally made motor and flexible drive. Therefore, extension is required upto March 31, 2017. A project proposal for indigenous manufacturing of complete set of motor, hand piece, flexible drive, comb and cutter, etc. was approved by CWDB, Jodhpur and first instalment has been received.

**Mr. Yogeshwar Kumar** mentioned that shearing is conducted twice in a year in the month of March and September and he will confirm the dates after discussing with the shepherds of Uttarakhand region. He also mentioned to rectify all minor problems especially of pinching occurring in the handpiece during previous workshops in Uttarakhand. He told that he will discuss with Mr. Avinash from Central Wool Development Board, Uttarakhand for the yearly requirement of combs and cutters so that data could be used for setting up mass production targets.

**Decision:** Chairman appreciated the work and insisted on handing over few complete set of shearing machines to the NGO as a part of the 2<sup>nd</sup> phase of the project under RuTAG IIT Delhi. Extension till March 31, 2017 was agreed.

**iv. Design and Development of a Low Cost Ground Water Level Measuring Device.**  
**PI: Prof A. K. Gosain (Deptt. of Civil Engineering)**

**Prof. S. K. Saha** told that field testing of fabricated device was completed successfully in Chirawa district on July 06, 2016.

**Mr. Sankalp** added that Prof. Gosain and the team have imported a contactless ground water measuring device and have tested in and around IIT Delhi campus. The device will be soon tested in Chirawa along with the manual device. He mentioned that design and development of an indigenous contactless device was also started. Therefore, extension is required till March 31, 2017.

**Decision:** Chairman appreciated the work and told that first phase of design development and testing of manual ground water measuring device can be considered closed. However, effort is needed to identify a manufacturer to supply the equipment to meet future demand. Approach towards the second phase of the project, i.e., design and development of indigenous contactless device for measuring ground water level should be discussed during the monthly meeting on September 8, 2016. Extension till March 31, 2016 was approved.

**B. Projects likely to be taken up**

**1. Development of a low cost small scale unit for crushing, sieving, iodizing and packaging raw salt for tribal population.**

**PI: Prof. B. P. Patel**

**Prof. Saha** told that RuTAG IIT Delhi team visited Nawa on May 25, 2016 for the survey of various salt manufacturing processes. RuTAG Team discussed the findings of Nawa visit (for Salt Iodization) with the representative of Society for Rural Industrialization (SRI), Ranchi during a visit on June 28, 2016. Prof. B. P. Patel will be the designated P.I. for this project.

Soon SRI, will be sending the detailed concept note regarding the size of the machine etc. Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar, Gujarat was also contacted for information regarding a small scale unit for iodizing salt (mixing, grinding and packing). A reply from Dr. Arvind Kumar of CSMCRI was received on July 22, 2016 stating that they have developed various techniques related to salt iodization as well as fortification of salt with iodine and iron simultaneously.

**Decision:** Chairman expressed the requirement for a comprehensive survey for better understanding of the need and scale for project formulation. Further, investigation related to project should only be done after receiving concept note form the concerned NGO, i.e., SRI, Ranchi.

**2. Design and Development of efficient and less polluting potters kiln**

**PI: Prof. Sangeeta Kohli.**

Potters at Unch village in Bharatpur District raised problem in their existing potters kiln. Artisans expressed the need for more efficient and less polluting kiln. Lupin Foundation has

expressed the willingness for collaboration. Prof. Sangeeta Kholi along with Prof. M. R. Ravi will visit above said place in the last week of August 2016.

**Decision:** Prof. Gaur insisted that existing technology available on potters kiln must be studied for better understanding in order to formulate the problem.

### **3. Design of LPG fired bell metal melting and mould heating Dhokra Craft Furnace P.I. Prof. Sangeeta Kholi**

For the follow up of the dokra craft furnace problems suggested by Chota Nagpur Craft during Ranchi workshop, RuTAG team visited a village near Lohardaga, Ranchi where artisans were interested in installing LPG fired Dokra Craft furnace.

Concerned NGO was asked to send artisans for training at Kondagaon near Bastar. So far, no communication was received from the NGO.

**Decision:** Chairman told that NGO must support the first training program for the artisans of Lohardaga district in Ranchi and NGO must show willingness in taking forward the project. Otherwise, project proposal will not be considered further.

## **2. Reporting**

### **i. Low cost Haemoglobin level Indicator for village health workers Prof. Veena Koul.**

**Prof. Saha** told that a device was procured from Prof. Veena Kaul, CBME, IIT Delhi and was personally delivered and demonstrated by RuTAG team at SRI, Ranchi on June 28, 2016. Mr. Sengupta of SRI Ranchi will conduct trials in the field and will also send concept note on the dissemination of the above said technology soon.

**Decision:** Prof. Gaur appreciated the work done by Prof. Veena Koul and her student. He told that a small program must be organised to gain the knowledge and to learn from the success story of the technology developed in IIT Delhi so that it could become the source of inspiration to RuTAG projects.

### **ii. RuTAG IIT Delhi's Regional Workshop at Jawaharlal Nehru Krishi Vishwa Vidyalaya, Krishinagar, Jabalpur, Madhya Pradesh on July 28-29, 2016**

RuTAG IIT Delhi conducted a regional workshop at JNKVV, Jabalpur on July 28-29, 2016. Madhya Pradesh Vigyan Sabha, Gyan Vigyan Parisar, Bhopal supported in organizing the workshop at Jabalpur. The program was attended by about 139 participants which included Dr. Vijay Singh Tomar, Vice Chancellor, JNKVV, Jabalpur, Madhya Pradesh along with 19 staff/faculty members, 88 students from JNKVV, Jabalpur, Madhya Pradesh, 2 faculty members and 7 students from IIITDM, Jabalpur, Madhya Pradesh and 26 NGOs.

### **iii. Mentorship Review Committee (MRC) Orientation**

RuTAG Club IIT Delhi participated in MRC orientation program on July 22-23, 2016. The aim was to sensitise the new students joining IIT Delhi about the activities of RuTAG Club IIT Delhi.

**iv. Visit to Kondagaon village of Bastar District in Chhattisgarh for installing LPG gas bank for Dokra Craft furnace**

Prof. M. R. Ravi, Mr. Davinder Pal Singh and Mr. Satyendra Rana visited Kondagaon village in Baster, Chhattisgarh on Feb. 27 to March 03, 2016 for the installation of LPG gas bank. Performance of the furnace was appreciated by the artisans.

**3. Reconstitution of RuTAG Core Group**

Three new field experts (external) were added to the existing core group, i.e., Mr. Yogeshwar Kumar from Jansamarth, Mr. Sita Ram Gupta from Lupin foundation and Mr. Arun Kumar from Development Alternatives. The Core Group members were encouraged to suggest more names who could provide positive inputs. The reconstituted group will be effective from the next Core Group meeting.

**4. Overview of Unnat Bharat Abhiyan (UBA)**

Prof. R. R. Gaur informed the members about the status of the Unnat Bharat Abhiyan (UBA) and possibility of an enlarged role of RuTAG in providing technological support.

The meeting ended with vote of thanks.

(Prof. S. K. Saha)

Coordinator/PI, RuTAG IIT Delhi

The minutes were compiled and typed by Mr. Davinder Pal Singh