

**Minutes of the Meeting of the Core Group of RuTAG - IITD held on  
March 14, 2014 in the CRDT Committee Room, IIT Delhi**

March 30, 2014

A Meeting of the Core Group of RuTAG, IIT Delhi was held on March 14, 2013 in the CRDT Committee Room, IIT Delhi under the chairmanship of Prof. R.R. Gaur. Following were present:

1. Prof. R. R. Gaur, Chairman, Core Group, RuTAG, IIT Delhi.
2. Major S. Chatterjee, Senior Project Consultant and Member, Core Group, Office of the PSA, Vigyan Bhavan Annexe, New Delhi.
3. Prof. V. K. Vijay, Member, Core Group, CRDT, IIT Delhi.
4. Prof. P.M.V. Subbarao, PI of the Project on “Technology Standardization and Testing cum Training Facility for Ultra-micro (Pico) Hydrel Power Package for Rural Applications.”
5. Prof. Ajit Kumar, PI of the Project on “Improving the Design of Bullock Driven Tractor to Make it More Users Friendly”, School of Engineering & Technology, IGNOU, IIT Delhi.
6. Prof. Sangeeta Kohli, PI of the project on “Improvement of Furnace for Bangles Making and Improving the Working Conditions of Artisans.”
7. Prof. M.R. Ravi Co-PI of the project on “Improvement of Furnace for Bangles Making and Improving the Working Conditions of Artisans.”
8. Prof. Rajendra Prasad, Co-PI. RuTAG, IIT Delhi.
9. Dr. Jagpal Singh, Senior Project Assistant, RuTAG, IIT Delhi.
10. Shri Raj Kumar Gupta, Senior Project Assistant, RuTAG, IIT Delhi.
11. Shri Davender Pal Singh, (On Contract), RuTAG, IIT Delhi.
12. Prof. S. K. Saha, Coordinator/PI and Convener, Core Group, RuTAG, IIT Delhi.

Prof. S. K. Saha, Coordinator/PI and Convenor, Core Group, RuTAG, IIT Delhi welcomed the Chairman and Members of the Core Group and the participants. He expressed special thanks to Prof. R. R. Gaur, the Chairman, Prof. Rajendra Prasad, PI and the members of existing Core Group of RuTAG-IIT Delhi. He indicated that new Core Group will be formed soon.

Referring to the discussion held in the last meeting of the Core Group, Prof. R. R. Gaur expressed thanks to the members of the Core Group and the PIs for their cooperation. He however indicated to relinquish the responsibility of Chairman. He further stated that his services will be available in the future too particularly for finalisation of proposals, future plans, monitoring etc. Prof. Saha requested him to continue as Chairman till the new Chairman is decided.

With the permission of the Chairman Prof. Saha 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 December 05, 2013 were already circulated to all the members/participants of the Core Group. No comment had been received. The minutes of the last meeting were deemed as confirmed.

## **Agenda item No. 2. : Action Taken on the decisions taken in the last meeting of the Core Group of the RuTAG-IIT Delhi:**

Following major decisions taken in the last meeting of the Core Group were read and action taken on these decisions was appraised to the Group:

- a) **Decision:** Regarding the project on “Improved Design to Reduce Drudgery in Operation of the Human-operated Treadle Pump for Irrigation” it was emphasized that the improved Treadle Pump developed by RuTAG-IIT Delhi under the project should be installed in the field areas and feed back of the users from the field be collected on this improved version.  
**Action Taken:** The improved treadle pumps (10 Nos.) are being fabricated in a workshop of M/s Bhagwati Engineers at Mohan Nagar, Ghaziabad. These are expected to be completed by March 20, 2014. These will be installed in the villages of Deoria, Gorakhpur and Sant Kabir Nagar districts of U.P. and feedback will be collected from the users.
- b) **Decision:** Regarding the Utilization of the Standardized Animal Driven Gear Box for Multiple Rural Applications, the Chairman indicated that the project cannot be treated as completed because the gadgets with attachments are yet to be tested and if there is any problem, further modifications to be carried out. In view of this there is need to extend the project duration up to March 2014.  
**Action Taken:** A RuTAG-IIT Delhi Team comprised of Prof. S. K. Saha and Shri Raj Kumar Gupta visited Kanpur for testing the applications. Prof. S.K. Saha apprised the Committee that out of four applications Chaff cutter, Atta Chakki and Paddy thresher and the attachments have been completed. Chaff cutter and Atta Chakki were tested with the attachments but the Paddy thresher could not be tested. A team of Students with Shri Raj Kumar Gupta will visit the project on March 28, 2014 for final testing of the applications. They will collect data and after that project will be treated as completed.
- c) **Decision:** Regarding the project on Technology Standardization and Development of Testing-cum-Training Facility for Ultra-micro Hydel Power Package for Rural Applications the PI, Prof. P.M.V. Subbarao had indicated that the testing will be conducted by the end of January 2014. Major S. Chatterjee indicated to conduct Review meeting of the project in middle of February, 2014. The Chairman opined that an internal evaluation of the project may be conducted in the month of January, 2014 before Review meeting. Since the project duration had already expired on October 31, 2013, there was need to extend the project period upto March 31, 2014. Prof. P.M.V. Subbarao was requested to send a status report of the project requesting extension of the project period so that it may be forwarded to the Office of PSA for consideration.  
**Action Taken:** The project duration has been extended up to March 31, 2014. The review of the project by the Project Monitoring Review Committee (PMRC) is being planned in April 2014. Prof. P.M.V. Subbarao told that the project will be completed for demonstration up to April 15, 2014.
- d) **Decision:** Regarding the project on “Facilitating the Use of Fruwash Technology for Extending Shelf Life of Fruits and Vegetables” at Pratapgarh Amla Belt it was indicated that there was demand for mechanical application of Fruwash, particularly for Amla. A machine for mechanical application of Fruwash was designed and was being fabricated at M/s Genius Engineers, Dwarka, New Delhi which was expected to be completed by 15<sup>th</sup> December,

2013. After its completion, the demonstration of application of Fruwash will be conducted at IIT Delhi and then the users/farmers to be invited from Pratapgarh. It will be sent to Pratapgarh for field trials.

**Action Taken:** A representative of the NGO visited RuTAG-IIT Delhi on March 10, 2014 for testing and demonstration of the machine. The machine is ready to despatch to Pratapgarh for using in the field.

The Chairman stated that he had inspected the machine that day and was satisfied with the working. However, he opined that the machine should be practically tested and demonstrated before the users (NGO) using Fruwash for washing the Fruits (Amla)/Vegetables and then should be despatched to Pratapgarh.

- e) **Decision:** Regarding the project on Improving the Design of Bullock Driven Tractor to make it more users friendly it was indicated that an improved model of the Bullock Driven Tractor was being developed with lifting arrangements and was under fabrication in the workshop of M/s Santosh Brothers International, Bulandshahar. It will be tested there. If any problem observed, further modifications will be done there. The improved model was expected to be ready by the end of December, 2013.

Once this model is ready, it will be sent to SCRIA, Khori, Rewari for conducting demonstration before the farmers of nearby area, particularly the farmers of Dahina village who are interested to adopt this technology as expressed in the workshop held on 27-11-2013 at SCRIA, Khori, Rewari.

**Action Taken:** The improved BDT is ready to despatch to Dahina village for testing and field trials.

The Chairman stated that he had inspected the machine that day and was satisfied. It may be sent in the field for field trial.

Prof. Ajit Kumar agreed that the BDT may be tested in the field and if some problem comes up necessary modifications may be carried out. He indicated about two problems – one that handle for lifting the attachment may be inconvenient and second that there should have been axle and the wheels should have been fixed on the axle. In present position the joint of wheel may break during turning. The committee decided to send the BDT to Dahina Village. Shri Mangal Sharma may go to Dahina for assembling of the BDT. Prof. Ajit Kumar will follow-up with the field people for further testing.

- f) **Decision:** Regarding the project on Improvement of Furnace for Bangles Making and Improving the Working Conditions of Artisans Major S. Chatterjee requested that Concept Note of the project may be sent to the O/o PSA.

**Action Taken:** The Concept Note was sent to the O/o PSA. It was discussed in the Review meeting of RuTAG at IIT Bombay and approved.

Prof. Sangeeta Kohli deliberated about the project. She told that she, along with Prof. M.R. Ravi and Mr. Raj Kumar Gupta visited the Lupin Foundation and the furnace being used for Bangles making in the villages of Bharatpur district of Rajasthan. The problems identified in the furnace are a) thermal discomfort to the artisans, and b) inefficient burning of fuel and pollution due to black smoke. The problems in working conditions of the artisans are: sitting

posture: no back support, tying of legs with a belt, pain due to rotating of Kalbhoot rod by hand Palm, working in excess of heat at work place and pollution due to smoke at work place. These are ergonomic problems. To overcome these problems a stove is being designed which could generate the required temperature for melting the raw glass in the furnace. It will be developed and lab tested at IIT Delhi. If found workable, will be provided to each artisan who will fill it with the fuel and place in his chamber of community furnace. The tools being used will be taken up by Prof. S. K. Saha.

Prof. Kohli told that once the technology finalised at IIT Delhi under RuTAG-IIT Delhi project it will be transferred in the field areas in Bharatpur district for which Lupin Foundation was agreed to bear the cost. It was decided that a letter may be obtained from Lupin Foundation in this regard.

- g) **Decision:** Regarding the project on Improvement of Bamboo Stick Making Device the Committee was of the view that the Bamboo sticks proposal may be kept on hold till they make available the metal device.

Major S. Chatterjee emphasised the need of technology of making round Bamboo sticks.

**Action Taken:** The metal device is awaited.

**h) Improvement of Potters Wheels and Potters Kiln:**

**Decision:** Major S. Chatterjee indicated to adequately justify the need of the project. He suggested contacting Dr. D. Raghunandan to collect inputs since CTD has done considerable work on Red Clay Pottery.

**Action Taken:** A team of RuTAG-IIT Delhi under the leadership of Prof. Ajit Kumar will visit Potters' Cluster in Uttam Nagar area on March 20, 2014 to find out the problems in Potters' wheel.

It was discussed and decided that Prof. Ajit Kumar and Sri Raj Kumar Gupta may visit the Potters' Cluster in Uttam Nagar area discuss with the potters for identifying the problems. The Chairman indicated that the Potters wheel developed by MGIRI Wardha may be taken up, if necessary some modifications may be carried out.

Regarding Potters Kiln Prof. M. R. Ravi indicated that LPG fired furnace were being used by the Potters in Uttam Nagar but they did not indicated about any problem. The Committee decided that there was no need to focus on Potters Kiln.

**i) Power Generation using Multiple Bullocks Pairs:**

**Decision:** Major S. Chatterjee was of the opinion that need wise the concept was fine. But it was a R&D component. Conceptually it need to be established first. Cost estimates were to be worked out. A Concept note might be prepared and submitted to the Office of PSA for consideration.

**Action Taken:** The Concept Note was sent to the O/o PSA on January 22, 2014. Reply is awaited. Prof. Ajit Kumar presented about the proposal in brief. He stated that 5 kW energy may be generated using 5 pairs of Bullocks. The cost of project indicated was about Rs. one lakh.

Major Chatterjee told that the proposal was discussed in the RuTAG meeting at IIT Bombay. There were some reservations. Prof. Saha indicated that he has not yet studied the design. The Chairman insisted to take up it after Prof. Saha sees the design.

The Committee decided that Prof. S. K. Saha and Prof. V. K. Vijay may first understand the concept and consider the design and then may come up with their views.

- j) **Decision:** Regarding future programmes Prof. Rajendra Prasad mentioned that workshops will be conducted in Gorakhpur U.P and Shahadol, M.P by RuTAG-IIT Delhi in near future:  
**Action Taken:** Workshop could not be conducted due to paucity of funds.

**Agenda item No. 3. : Change of PI for RuTAG project from February 01, 2014.**

The Committee was apprised that as per the decision taken in the last meeting of the Core Group Prof. S. K. Saha has assumed the responsibility of the Coordinator/PI/ Convenor of Core group of RuTAG-IIT Delhi from February 01, 2014.

**Agenda item No. 4. RuTAG review comments from the PSA's office.**

Major S. Chatterjee told that the report of the Review Committee is being finalized and will be circulated soon.

**Agenda item No. 5. Formation of the new Core Group.**

Prof. S. K. Saha suggested the following structure of the new Core Group of RuTAG-IIT Delhi:

Prof. R. R. Gaur	Chairman
Prof. S. K. Saha	Convenor/Coordinator/PI
Prof. Rajendra Prasad	Co-PI
Prof. V. K. Vijay	Co-PI
Head, CRDT	Member
Head, Mechanical Engg. Deptt	Member
Major S. Chatterjee, O/o PSA	Member
NGO's representative	Member
Shri Satpal Singh, Sarpanch, Dahina Village, Rewari	Special invitee
All PIs and Co-PIs of RuTAG Projects	Special invitee

The Committee unanimously approved the above structure of the new Core Group.

**Agenda item No. 6. Plan of action for the future activities.**

Due to non-availability of the fund the discussion on the new plan of action was postponed.

**Agenda item No. 7. Review of status of funds and project staff.**

Review of the funds vs. the project staff was taken up. The PI has been asked to take action accordingly. Maj. Chatterjee conveyed that the first instalment for the year 2014-2015 may be released in the month of May 2014.

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

(Prof. S. K. Saha)  
Coordinator/PI, RuTAG-IITD