

A Report on
Rural Technology Action Group (RuTAG), IIT Delhi
Regional Workshop at Mathura, Uttar Pradesh

In Collaboration with Human Social Welfare Society, Hathras

held at
Hotel Wingston, Masani Link Road, Mathura, U. P.

On
December 16, 2019



By
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Preamble

RuTAG IIT Delhi conducted a regional workshop on December 16, 2019, in collaboration with Human Social Welfare Society, Hathras at Mathura. The program was attended by 60 participants, which included **Prof. R. R. Gaur**, Hon. Visiting Professor, NRCVVEE, IIT Delhi and Chairman, Core Group, RuTAG IIT Delhi, **Prof. S. K. Saha**, Professor, Dept. of Mechanical Engineering, IIT Delhi, and Coordinator, RuTAG IIT Delhi, **Prof. M. R. Ravi**, Professor, Dept. of Mechanical Engineering, IIT Delhi, and Co-coordinator, RuTAG IIT Delhi, **Prof. Sangeeta Kohli**, Professor, Dept. of Mechanical Engineering, IIT Delhi, and Co-coordinator, RuTAG IIT Delhi, **Mr. Davinder Pal Singh** and **Mr. Yashwant Prasad**, Project Associates, RuTAG IIT Delhi, **Mr. Raj Kumar Gupta**, Senior Project Assistant, RuTAG IIT Delhi, **Mr. Mangal Sharma**, Junior Project Attendant, RuTAG IIT Delhi, **Mr. Suraj Bhat**, Research Scholar, IIT Delhi, **Mr. Abhishesh Kumar** and **Mr. Sanket Beniwal**, B. Tech Students, IIT Delhi.

1. Inaugural Session

Mr. Davinder Pal Singh anchored the workshop. He first welcomed the delegates and participants.

1.1. Welcome by Prof. S. K. Saha



Figure 1. Mr. Davinder Pal Singh welcoming the participants

Prof. S. K. Saha welcomed the participants and briefly explained the agenda of the workshop. He explained the mechanism and role of RuTAG IIT Delhi in technology up-gradation for rural India. He mentioned that this workshop primarily focused on Tulsi Mala Device. He also thanked all the participants. This session was followed by the introduction of the participants.

1.2. Introduction of participants

Participants from various NGOs, institutes, and organisations gave a brief introduction of themselves and their organisations.

1.3. Address by Prof. R. R. Gaur



Figure 2. Prof. Gaur delivering his welcome address

Prof. Gaur welcomed everyone and mentioned the importance of the role of premier institutes such as the IITs in research for rural areas. He also stressed the importance of field-based need identification and the increased demand for user-focused technologies. He acknowledged the role of NGOs in problem identification and implementation of the developed solutions. He also mentioned the role of ministries and government agencies in the dissemination of grassroots technologies.

1.4. Presentation on Rural Technologies developed under RuTAG IIT Delhi by Prof. S. K. Saha

Prof. S. K. Saha outlined several completed and on-going projects of RuTAG IIT Delhi. He gave a brief explanation on Treadle Pump, Tulsi Mala making Device, Sheep Hair Shearing Device, Bullock Driven Tractor, Groundwater level measuring device, and Animal Driven Gear Box. He also mentioned the objectives and mandate of the RuTAG programme sponsored by the office of the PSA (Prof. K. Vijay Raghavan) to the Govt. of India and operated at 7 IITS (Delhi, Madras, Bombay, Kharagpur, Roorkee, Gowhati, and Kanpur).

1.5. Presentation by Prof. M. R. Ravi

Prof. M. R. Ravi spoke about the various furnace-related technologies developed by RuTAG IIT Delhi. Some of the technologies discussed were – Glass Bangle Furnace, Terracotta furnace at Kondagaon, and Dhokra craft furnace.

2. Problem Identification Session

2.1. Presentation by participating organisations

2.1.1. Mr. M. Deeksha, Development Commissioner Handicrafts

Ms. Deeksha, Handicraft Promotion Officer, Office of DC Handicrafts gave a presentation about various schemes available through the office for handicraft artisans. She mentioned different programs such as National Handicraft Development Programme, Human Resource Development, Infrastructure and Technology Support, Research and Development, and Marketing support.

RuTAG IIT Delhi Remarks:

Prof. Gaur suggested that there should be a representative from DC Handicrafts in RuTAG IITD'S core group.

2.1.2. Mr. Prabhu Dayal, Jan Vikas Sansthan

Mr. Dayal spoke about the history of sculpture and sculptors in Mathura region and talked about the problems faced by them.

RuTAG IIT Delhi Remarks:

Prof. Gaur suggested him to get connected with the DC Handicrafts office in Mathura.

2.1.3. Mr. Hemant Sharma, Lupin Foundation

Mr. Hemant Sharma from Lupin Foundation, Bharatpur spoke about his organisation's association with RuTAG IIT Delhi. He also mentioned the various projects done by RuTAG IITD with the collaboration of Lupin such as Tulsi Bead Making Device, Bangle and Pottery furnaces, Marble Cutting, and Stone Dust Prevention.

Intervention Required:

Improvement of the furnace used in making earthen tavas. Intervention required to reduce fuel consumption and smoke emission.

RuTAG IIT Delhi Remarks:

Prof. Ravi will visit the village along with Lupin to have a better understanding of the existing situation.

2.1.4. Mr. Dharmendra, HSWS Hathras

Mr. Dharmendra thanked RuTAG IIT Delhi for organising the workshop. He spoke about the importance of Tulsi within the culture and lifestyle of the people. He also mentioned that by using the older devices, artisans developed health problems because of the sitting and working posture. He also said that there are around 2000 families who work on Tulsi beads. He requested the younger generation to take up the newer machine to produce Tulsi beads.

Intervention Required:

Improvement in Diya making furnace

RuTAG IIT Delhi Remarks:

Prof. Ravi will visit the area to study more about the furnace and its requirements.

2.1.5. Mr. M. K. Sharma, Asst. Director, MSME Agra

Mr. Sharma mentioned about the Common Facility Centres available under MSME for Manufacturing, Packaging etc. which can be used by the artisans.

2.1.6. Mr. Sarvesh Kumar Gupta, NABARD

Mr. Gupta appreciated the work of RuTAG IIT Delhi and spoke about introducing RuTAG technologies to different Self-Help Groups. He also mentioned about the off-farm development department under NABARD that can benefit artisans. He suggested that NABARD can help in technology procurement to artisans via RuTAG and NGOs.

2.1.7. Mr. Rohit Choudhary, Ministry of Textile

Mr. Rohit Choudhary encouraged the participants to get an artisan card done. He mentioned about the various benefits that can be availed through the artisan card. He also mentioned about financial assistance that can be availed through Mudra loans.

Intervention Required:

Improvement in Glass bead furnace in Purdil Nagar

RuTAG IIT Delhi Remarks:

Prof. Ravi will visit the area to study more about the furnace and its requirements.

2.1.8. Mr. Deepak Goswami, Adarsh Yuva Samiti

Mr. Goswami stressed on the lack of profit to the artisans and mentioned that better use of technology could help the situation. He also mentioned about lack of appropriate technology in farm sector especially in food processing.

Intervention Required:

Technology to avoid stubble burning

RuTAG IIT Delhi Remarks:

Many departments in IIT Delhi are already working on it. The name of the lab is KRIYA LABS, TBIU, Synergy Building, IIT Delhi (Email: info@kriyalabs.co.in).

2.1.9. Mr. Satvender Singh, Director, RSETI Mathura

Mr. Singh mentioned that RSETI imparts training to rural youth in skill development and entrepreneurship. He said that he would like to help RuTAG to organise such training sessions to artisans free of cost. He also mentioned that the sessions are conducted both on and off-campus of RSETI based on the course duration.

RuTAG IIT Delhi Remarks:

The proposition was agreed upon.

2.2. Concluding Session by Prof. Gaur

Prof. Gaur thanked all the participating NGOs for their presentations. He thanked the Govt. departments for their participation. He told the participants that RuTAG IIT Dehi will present the relevant faculty at IIT Delhi with the problems discussed in the workshop. He also asked for support in identifying manufacturers and dissemination of technologies from the Govt. organisations.

3. Training and Demonstration Session

Since this workshop focused on Tulsi Mala Device, a dedicated session on Tulsi Bead Making was organised. In this session, the participants, through interactive sessions, learned about the new device, its development, assembly and also learnt how to make beads on the new device.

3.1. Game – Tulsi Mala Bead Making Device assembly



Figure 3. Teams assembling the device with the help of RuTAG staff

In this session, the participants were divided into four groups by drawing chits. Each team was provided with a set of parts of the Bead making device. The groups were asked to assemble the parts using their imagination to develop the device. Later, they were shown the picture of the assembled device and the function of each of the parts were explained. Mr. Yashwant Prasad and Prof. Saha conducted this session. Other RuTAG staff assisted the teams in assembling the device.

3.2. A Journey of Tulsi Mala Bead Making Project

Prof. Saha spoke about the initial stages of the project, how the problem was identified and how RuTAG, with the help of Lupin foundation, started its journey in improving the device. Mr. Raj Kumar Gupta and Mr. Yashwant Prasad presented the history of the development of the Tulsi Mala device. Mr. Gupta spoke about the older device with the DC powered motor. He explained the features and limitations of the device to the audience. Mr. Yashwant explained the new AC motor powered device. He spoke about the functions of different parts of the device. He also mentioned about the safety precautions, costing of the device, and the potential impact of the new device on the livelihood of the artisans.

3.3. Bead Making Training

Ms. Omwati and Mr. Laxman, artisans from Bharatpur and Mathura, respectively, demonstrated how beads could be done using both the DC powered and AC powered devices. Participating artisans were invited to try out the machine and make beads on it. All the artisans succeeded in using the newly developed machine and made beads.



Figure 4. Ms. Omwati (L) and Mr. Laxman (R) demonstrating the new devices

4. Concluding Remarks and Future Roadmap

Prof. Saha concluded the training and demonstration session by thanking all the artisans. He also thanked Mr. Devendra, who is the carpenter for helping to manufacture and assembly the device. Mr. Hemant Sharma said that Lupin Foundation will further assist in dissemination and spreading awareness about the newly developed machine. He thanked Mr. Punit Verma for his role and also requested him to carry forward the work of dissemination in future. Mr. Dharmendra said that a workshop for younger generation of artisans will be a good exercise. RuTAG IITD handed over two machines, one each to HSWS and Lupin to demonstrate and disseminate the device.



Figure 5. New Tulsi Mala Bead Making Devices being given to Mr. Punit Kumar of Lupin Foundation (L) and Mr. Dharmendra of HSWS (R).

5. Vote of Thanks

Mr. Dharmendra of HSWS, Hathras proposed the vote of thanks. He thanked RuTAG IIT Delhi for conducting the workshop. He also thanked all the artisans, NGOs and Government organisations for attending the workshop and for providing valuable inputs.



Figure 6. Group photograph of all the participants of the Workshop

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