

**A REPORT**

on

**INAUGURAL WORKSHOP OF RURAL TECHNOLOGY ACTION GROUP (RUTAG)  
CENTRE IIT ROPAR**

**MAY 3-4, 2011**

Submitted to

**Office of Principal Scientific Advisor to Government of India**



By

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## Report

The inaugural workshop of the Rural Technology Action Group (RuTAG) Centre was organised in the Lecture hall L3 of the Indian Institute of Technology Ropar during May 3-4, 2011. RuTAG is a mission conceptualized, initiated and sponsored by the Principal Scientific Adviser (PSA) to the Government of India. Hon'ble Dr. R. Chidambaram, Principal Scientific Adviser to the Government of India was very kind to be the Chief Guest of the function. Hon'ble Prof. M K Surappa, Director, IIT Ropar presided over the function. The following were present in the meeting:

<b>Sr No</b>	<b>Name/Designation of the Participant</b>	<b>Official Affiliation</b>
1.	Dr R Chidambaram	Principal Scientific Advisor to Govt of India, Chief Guest of the Function
2.	Prof M K Surrappa	Director, IIT Ropar
3.	Shri S Chatterjee	Scientific Consultant and Coordinator, Central RuTAG, Office of Principal Scientific Advisor to Government of India
4.	Prof B K Dhindaw	Dean (Academics and Research), IIT Ropar
5.	Dr (Mrs) Ketaki Bapat	Scientist 'E', Office of Principal Scientific Adviser to Government of India
6.	Mr A Palanivel	Registrar, IIT Ropar
7.	Dr Jagpal Singh	PI RuTAG, IIT Delhi
8.	Prof Devendra Jalihal	Professor, Dept of EE, Indian Institute of Technology Madras
9.	Prof P B S Bhadoria	Rural Development Centre, Indian Institute of Technology Kharagpur, Kharagpur
10.	Dr Ashok Kumar	RuTAG Centre, IIT Roorkee
11.	Dr Gursharan Singh Kainth	Director, Guru Arjan Dev Institute of Development Studies, 14-Preet Avenue, Majitha Road, PO Naushera, Amritsar-143008
12.	Mr Shashank Vaid	Arbitrage Technology Partners shashank.vaid@duke.edu www.fuqua.duke.edu London, Dubai, New Delhi, Shanghai/Kunshan, St. Petersburg, Durham
13.	Mr Surinder Singh	Director, Kheti Virasat, Anandpur Sahib
14.	Sh K D Arora	Chairman, Kusum Arora Memorial Trust - Residence -1141, Sector 43 B, Chandigarh
15.	Sh Chander Prakash	Kusum Arora Memorial Trust, Residence - 350, Sector 9 A, Chandigarh
16.	Sh Kuldeep Singh	Arpan (NGO), Village Dawelia, Distt Ropar
17.	Sh Jagtar Singh	Director, Social Work and Rural Development Centre, VPO Nurpur Bedi, Distt Ropar
18.	Prof S B Singh	Retd Professor, Guru Nanak Dev Engineering College, Ludhiana
19.	Dr Chander Prakash	Punjab Technical University, Jalandhar
20.	Mr Vipul Sharma	Guru Nanak Dev Engineering College, Ludhiana
21.	Mr Sandeep Kumar	RuTAG, IIT Roorkee
22.	Dr Daya Gaur	HOD, CSE, IIT Ropar
23.	Dr Harpreet Singh	PI, RuTAG Centre, IIT Ropar

## **May 03, 2011, Inaugural Session: 1430-1530 hrs**

The workshop started with Saraswati Vandana being recited by the students of the institute followed by lighting of lamp by Chief Guest Dr Chidambaram and Prof Surappa. Prof BK Dhindaw welcomed the participants and introduced Dr Chidambaram to the audience. Dr Chidambaram formally inaugurated the RuTAG centre of the institute on May 3, 2011.

Speaking on the occasion, Dr Chidambaram said two-third of the people of the nation lived in rural areas and were not able to avail technologies. He emphasized on the important role of the faculty from IITs, people from scientific community and NGOs to make rural people aware of technologies that can uplift their lifestyle. He motivated the faculty to spare some time to work for the real problems of the people from rural background. He was of the strong opinion that research efforts should lead to innovations for the common folks. Dr Chidambaram also said that nuclear energy is the need of the hour to meet increasing power demand of the country. The nuclear disaster at Fukushima should not stop us from going ahead with the Jaitapur nuclear power plant. He advocated that our nuclear reactors should not only be quake resistant but should also be able to tolerate Tsunami. He further added that for the countries like India, the human development index was calculated in three contexts, with power consumed per person being one of the major factors. He informed that we currently need six to seven times more energy per person for more development. Renewable sources of energy, such as solar energy, is intermittent while we are already tapping hydel resources and wind energy too is incapable of meeting our ever expanding requirements. He concluded that the 21<sup>st</sup> century's two major concerns are climate change and energy security. We can secure the energy sector by utilising nuclear energy. He hoped that this seventh newly established RuTAG centre of IIT Ropar shall contribute in a big to the activities of the RuTAG programme.

Mr Chatterjee gave a nice introduction to the objectives of the RuTAG centres during the inaugural session. He informed that one of the areas of focus of the Office of the Principal Scientific Adviser to the Government of India is related to the development and dissemination of technologies for rural development. He highlighted the main features of the RuTAG programme such as it is entirely S&T NGO based, avoids grass-root level intervention, non-farm sector preferred, skill upgradation through specialized training, one-off intervention in very rare cases. He told that 5 RuTAGs have already been established, all in IITs, one each in Uttarakhand, Tamilnadu, Assam (for NE states), West Bengal and Delhi. 6<sup>th</sup> RuTAG is being established at IIT, Bombay. RuTAG has linkages with State Governments, R&D Laboratories, Educational Institutions and Corporate Sector/ Industry. Some very innovative technology upgradation projects have been successfully implemented under the programme. He also gave a nice presentation on various kinds of product/technology developments done by the various existing RuTAG centres.

Prof MK Surappa in his inaugural speech said that through non-government organisations and the state government, the centre will work for developing simple technologies and improvising existing ones in order to make work easier for people in the rural sector. He added that work could be done on providing potable drinking water to rural areas as water in several pockets of Punjab is saline because of excessive use of fertilizers. He said that the mission of RuTAG is to reach people such as farmers and weavers, who remain deprived of technologies. RuTAG is to act as a bridge between the people from scientific community and the common man living in rural areas, so that their life styles could be improved and the economy of the country could be enhanced.

The inaugural session ended with vote of thanks by Dr Harpreet Singh, PI of the RuTAG Centre, IIT Ropar. He expressed his thanks to Dr Chidambaram for sanctioning this centre to IIT Ropar. He assured that IIT Ropar will put all their best efforts to meet the objectives of the RuTAG mission of PSA office. He also expressed his gratitude to all the participants, guests and media. Dr Singh concluded his note acknowledging the help and cooperation extended by the faculty, staff and students of IIT Ropar to make this workshop possible.

### **May 3, 2011, Technical Session I: 1600-1735 hrs**

The inaugural session was followed by first technical session of the workshop on May 3 during 1600-1735 hours, during which the PIs/representatives from all the existing RuTAG centres gave presentations regarding their activities and achievements. The detailed programme of the workshop is attached with this report (Annexure A).

Prof P B S Bhadoria, RuTAG, IIT Kharagpur informed that their RuTAG centre has interactions with leading S&T NGOs of Bihar, Jharkhand and Orissa. He give a nice presentation on some technologies that are being upgraded such as Sabai Grass Rope Making Machine, Dryer for Vermicompost, Improved Amber Charkha, Computerised Tassar Silk grading, Potter's Wheel, Sal Leaf Bowl Making Machines, Cashew Nut Decortification, Mannual Peddy Weeder, Sustainable Agriculture, Earthworm Separator, Biogas from Sausage Fruit, Water Purfier etc. He mentioned about his workshops with spinners and manufacturers.

Prof Devendra Jalihal, RuTAG, IIT Madras gave second presentation and told that they take active Support from State Government and have a Network with institutions and NGOs in Tamilnadu and also Kerala. He explained their efforts to upgrade technology for Natural dyes, Coir Ratt, Pern Winding Machine, Sanitary Napkins, LED Lamps, Pumps as Turbines, Windmill for Battery Charging, etc.

Third presentation was given by Prof Ashok Kumar, RuTAG, IIT Roorkee. He told that their centre has very strong linkages with the State Government, institutions and the NGOs. He presented their work towards technologies such as for intervention/up-gradation of Water Mills, Ground Water/Well/Spring Recharge, Food Processing/Packaging, Apricot Drying, Gravity based Ropeway, Light Weight Dandis for Pilgrims etc.

Dr Jagpal Singh, RuTAG, IIT Delhi in his presentation RuTAG at IIT, Delhi presented that they have taken up some activities such as Animal Driven Water Pumps, Conversion Kit for Diesel Engines for Using Biogas, Setting Up a Centre for Design and Testing for Micro Hydel Systems, etc.

Finally Dr Harpreet Singh, the PI of Local RuTAG Centre added some comments regarding some research projects, which were made by the UG students of the institute, however can be useful for rural folks such as manual pump to collect rain water from low-lying areas to fields, medicine vending machine. He also explained forthcoming research centres of IIT Ropar which can help to conduct research on agri-waste utilisation to produce bio-energy and solar powered water desalination plants.

### **May 4, 2011, Technical Session II: 1600-1735 hrs**

The second and final technical session of the workshop started with a nice and interesting presentation by a fresh MBA graduate Mr Shashank Vaid, Arbitrage Technology Partners, who has a passion to be a high-tech agricultural entrepreneur. He gave some novel ideas on ERP systems for agro markets. He is going to float co-creation of World's first integrated agro-tech platforms.

The second presentation came from Prof SB Singh, who gave the idea that RuTAG should include industrialists from Ludhiana-based industries for technology development and manufacturing. This was followed by a presentation by Mr Gursharan Singh Kainth, who informed that RuTAG should work to develop some machinery for paddy plantation, lady finger plantation and other such non-conventional crops.

Mr Surinder Singh insisted that the activities of the RuTAG should be extended to farm sector also as this region of India is mainly agricultural based. He suggested that RuTAG can assist in

improving design of pesticide spray equipment so as to deliver optimum amount of sprayed pesticide quantity. This will reduce environmental hazards. He also suggested that there is need to develop safety equipment for sprayers as per the local working conditions. Chemical analysis of the liquid manure (local) developed by his NGO needs to be chemically analysed and he seek help from IIT Ropar. He also raised some very sensitive issues related to increase in number of cancer patients, debt-ridden farmers, revival of old wells, exposure tours for farmers/rural folks.

Sh K D Arora emphasized that RuTAG should work to impart vocational training/skill development programs for the rural people. He suggested that technology should be developed for assisting rural workers working in the areas of soft toys, pot painting, beautician, candle making and flower making. Mr Kuldeep Singh also stressed upon the need to take help of rural expertise for the development of successful technology under RuTAG program. He insisted that the needs of villagers should be the main focus of RuTAG activities.

### **Concluding Session: 1230 hrs**

This session was chaired by Prof BK Dhindaw and Mr Chatterjee. This session proved to be very interesting as it was very interactive one. The discussion went on for more than hour. The participants, especially from NGOs endorsed their point of views put forward by them during technical session II. They called upon the IITians to come forward and solve the problems of rural folk. In addition to the suggestions put forward in the technical session II, some new directions for future work came up during this brainstorming session. The need for development of simple to use software was proposed for simputers. Ideas like social entrepreneurship, counselling cells and e-choupals were discussed. Prof Dhindaw and Dr Daya Gaur emphasised on the need for the development of central database of RuTAG innovations, so that some other RuTAG centre does not reinvent the wheel. Mr Chatterjee concluded this session and based upon the discussions/presentations held during these two days, some technology gaps were identified.

### **Identified Technology Gaps**

- Technology development for Dehusking of waste
- Development of improved agricultural implements
- New agricultural tools for non-conventional crops
- Improvisation of combine harvester to downsizing the straw
- Chemical analysis testing facilities for soil/manure/water
- Local technology/Implements for food processing so that small groups of villagers can earn from such small processing units

### **Constitution of a Special Award**

On this occasion Mr KD Arora, Chairman, Kusam Arora Memorial Trust (Regd), Chandigarh announced a special award of Rs 5000/- to a student or group of students of IIT Ropar, who develops first innovative product involving improved technology for farm or non-farm sector during this academic year 2011-12. Provided that such end product shall be pre-tested for its quality, efficiency and cost saving features.

At the end of the workshop, all the participants were honoured with souvenirs by Prof BK Dhindaw.

## **Annexure A**

### **Inaugural Workshop of Rural Technology Action Group (RuTAG) Centre at IIT Ropar**

#### **Detailed Programme**

**Venue: L3**

#### **May 03, 2011**

##### **Inaugural Session : 1430-1530 hrs**

- a. Saraswati Vandana : 1430 hrs
- b. Bouquets to the Guests : 1435 hrs
- c. Lighting of Lamp Ceremony by the Chief Guest : 1437 hrs
- d. Welcome by Prof B K Dhindaw : 1440 hrs
- e. Brief introduction about RuTAG- Mr. S. Chatterjee : 1445 hrs
- f. Inaugural Address by Director, IIT Ropar : 1455 hrs
- g. Address by Dr. R. Chidambaram-formal inauguration of RuTAG at IIT Ropar : 1505 hrs
- h. Vote of Thanks- Dr Harpreet Singh : 1525 hrs

##### **Tea/Coffee : 1530-1600 hrs**

##### **Technical Session I : 1600-1735 hrs**

- a. Introduction of Participants : 1600 hrs
- b. Presentation by Prof Devendra Jalihal, RuTAG, IIT Madras : 1610 hrs
- c. Presentation by Prof P B S Bhadoria, RuTAG, IIT Kharagpur : 1630 hrs
- d. Presentation by Prof Ashok Kumar, RuTAG, IIT Roorkee : 1650 hrs
- e. Presentation by Dr Jagpal Singh, RuTAG, IIT Delhi : 1710 hrs
- f. Brief Presentation by IIT Ropar : 1730 hrs

#### **May 04, 2011**

- 1. Technical Session II : 1000-1130 hrs
  - a. Presentations by NGOs and other institutions (Mr Shashank Vaid and others present)

##### **Tea/Coffee : 1130-1200 hrs**

- 2. Discussions : 1200 hrs
- 3. Concluding Session : 1230 hrs
  - a. Identified Technology Gaps
  - b. Closing Remarks- Dr. Harpreet Singh and Mr. S. Chatterjee

##### **Lunch : 1300 hrs**

## STATEMENT OF EXPENDITURE

<b>S. No.</b>	<b>Head/Particulars</b>	<b>Sanctioned Amount (Rs)</b>	<b>Expenditure (Rs)</b>
1	Registration Material	10,000/-	By institute store
2	TA to Participants	20,000/-	12,394/-
3	Boarding and Lodging	30,000/-	30,166/-
4	Stationery, Banners etc	8,000/-	2,021/-
5	Tea ( Two Days)	5,000/-	5,000/-
6	Transportation	10,000/-	9,499/-
7	Tent and Auto Video Arrangements	20,000/-	885/-
8	Contingency	15,000/-	9,135/-
<b>Grand Total</b>		<b>1,18,000/-</b>	<b>69,100/-</b>
<b>Amount received so far</b>		<b>1,00,000/-</b>	
<b>Balance</b>		<b>30, 900/-</b>	