

# **Forest Genetic Resource Assessment and Conservation**

**Sponsored by: MoEFCC, Govt. of India**

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## **TRAINING REPORT**

A three days training programme on 'Forest Genetic Resource Assessment and Conservation' was organized at Institute of Forest Biodiversity (ICFRE), Hyderabad, from 1st to 3rd March, for other stakeholders, with financial assistance from the Ministry of Environment, Forest and Climate Change, Government of India. The training co-ordinator, Dr. S. Pattanaik, Scientist F, welcomed the participants and informed them about the host Institution and the objectives of the programme. Dr. G.R.S. Reddy, Director, Institute of Forest Biodiversity, Hyderabad, inaugurated the programme. In his inaugural address Dr. Reddy emphasized the need of conserving Forest Genetic Resources for the future of mankind, keeping in view the climate change scenarios.

The objectives of the programmes were

- To raise awareness about Forest Genetic Resources and their importance in Biodiversity conservation.
- To raise awareness about modern technologies available for Forest Genetic Resource assessment.
- To raise awareness about approaches for Forest Genetic Resource conservation.

To meet the above objectives the training programme was divided into eight classroom presentations, one laboratory visit and two field visits. The schedule of the programme is appended in Appendix I

**Classroom sessions:**

The classroom sessions covered the following aspects of Forest Genetic Resource and were presented by seven resource persons from various organizations. The brief bio-data of the resource persons are appended in Appendix II. The classroom photos of the trainees are appended.

- I. Forest Genetic Resources – basic concepts, characteristics of forest genetic resources.(Dr. G.R.S. Reddy, IFB)
- II. Value and Importance of Forest Genetic Resources – economic value, environmental value, ecosystem services and resilience, social value, cultural value, medicinal value, scientific value, etc.(Dr. G.R.S. Reddy, IFB, Hyderabad)
- III. Factors Affecting Forest Genetic Resources – Opportunities and challenges in their sustainable utilization (Dr. A. Sabitha Rani, Osmania University)
- IV. *In situ* conservation of Forest Genetic Resources in protected area networks (National parks, Biosphere reserves, Wildlife sanctuaries etc.). (Sri D. Jayaprasad, IFB, Hyderabad)
- V. *Ex situ* conservation approach of conserving and managing FGR. (Dr. S. Pattanaik, IFB, Hyderabad)
- VI. Modern tools and their application in Genetic Resource Conservation. (Dr. Santosh Deshpande, ICRISAT)
- VII. Role of Agroforestry in FGR conservation and implications of climate change (Dr. B. Joseph, Jayshankar Agricultural University)
- VIII. Conservation of medicinal genetic resources in agro-ecosystems (Dr. Madhavi Lata, Jayshankar Agricultural University)

**Laboratory visit:**

The trainees were taken to the molecular biology laboratory at Institute of Forest Biodiversity, Hyderabad. During this visit, the trainees were familiarized with the equipments used in DNA extraction, polymerase chain reaction (PCR), gel electrophoresis, gel documentation system, water purification system etc. The trainees were explained and given demo on how to interpret DNA bands in gel images and how to analyze data to arrive at genetic diversity and structure statistics. The laboratory visit photos of the trainees are appended.

**Field visits:**

During the first field visit, the trainees were taken to the *ex situ* conservation stands of *Pterocarpus santalinus* and *Santalum album* located inside the campus of Institute of Forest Biodiversity, Hyderabad. The trainees were explained the purpose, the sampling methodology of genetic material, the nursery techniques and the plantation establishment techniques viz., the requirement of a nurse crop for the establishment of *Santalum album* stands.

During the second field visit, the trainees were taken to the Forest Research Centre, Mulugu, managed by the Telengana Forest Department. The trainees were taken around the trial plots (progeny trial, clonal trials) and seed orchards of 37 economically important tree species viz., *Dalbergia latifolia*, *Tectona grandis*, *Hardwickia binata*, *Soymida febrifuga*, *Sterculia urens*, *Anthocephalus cadamba*, *Madhuca indica*, *Mitragyna parvifolia*, *Chloroxylon swietenia*, *Stereospermum soyalinthis*, *Buchanania lanzan*, *Dolichandron crispera*, *Melia dubia*, *Terminalia tomentosa*, *Ceiba pentandra*, *Hymenodictyon excelsum*, *Ougenia oojenensis*, *Boswellia serrata*, *Pterocarpus santalinus*, *Melia azedirachta*, *Simarouba glauca*, *Holeptilea integrifolia*, *Santalum album*, *Cochlospermum religiosum*, *Pongamia pinnata*, *Ailanthus excelsa*, *Givotia rotteliformis*, *Gmelina arborea*, *Bixa*

*orelliana*, *Aegle marmelos*, *Acacia nilotica*, *Azadirachta indica*, *Casuarina junghaniana*, *Radermachar xylocarpa*, *Gliricidia maculate* and NTFP species (Amla, Jamun, Seethaphal, Tamarind and Velaga). The trainees also visited nursery areas and got first-hand experience on rooting media, misting system of propagation, mist-less system of propagation, green house, lath house, vermicomposting etc. The field visit photos of the trainees are appended.

### **Composition of trainees:**

Out of the total 42 trainees who took part in the training programme, 40 were females and 2 were males (Figure 1). The trainees are further categorized into 12 teachers (Lecturers/Assistant Professors/Associate professors), 26 M.Sc. students, 3 Ph.D. scholars and one practitioner of Ayurvedic medicine (Figure 2). A complete list of stakeholders and their communication details are appended in Appendix III. The group photos of the trainees are appended.

Figure 1: Composition of trainees by sex.

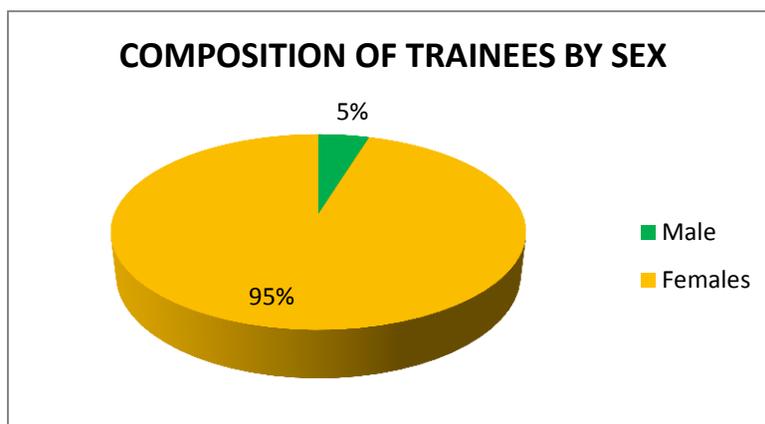
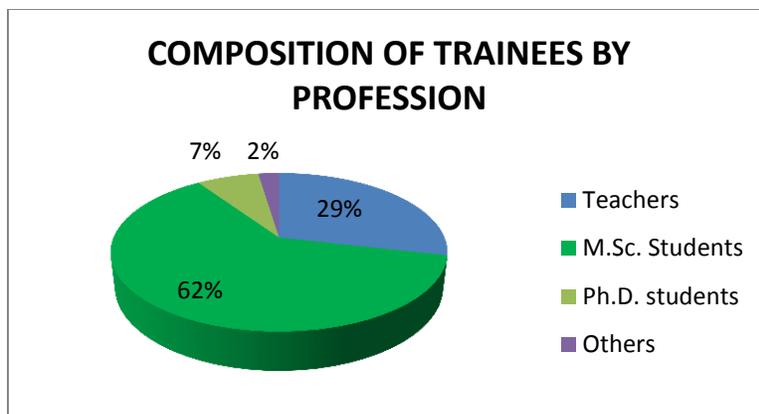


Figure 2: Composition of trainees by profession



**Feedback of trainees:**

After conclusion of the training programme a valedictory function was held, where trainees were requested to give their oral as well as the written feedbacks for further improvement of the training programme. The trainees were requested to rate the programme at nine criteria. The pictorial depiction of the response is given below. Overall, 69% trainees rated the training as excellent and 29% trainees rated it as very good (Figure 10). About 64% trainees felt that the training will be very useful (and 36% useful) in their professional careers (Figure 11). All the trainees were provided with a participation certificate. The programme was concluded with vote of thanks from the training co-ordinator Dr. S. Pattanaik.

Figure 3: How was the training content?

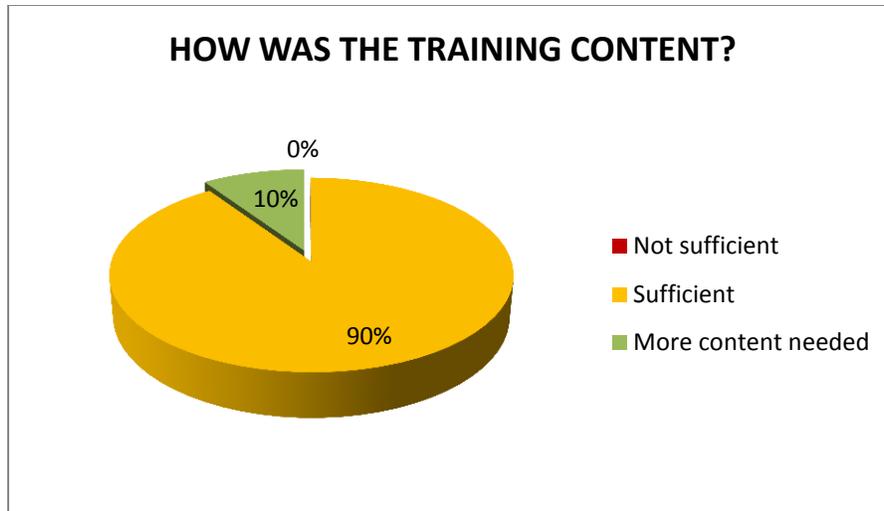


Figure 4: Was enough time given on each topic covered?

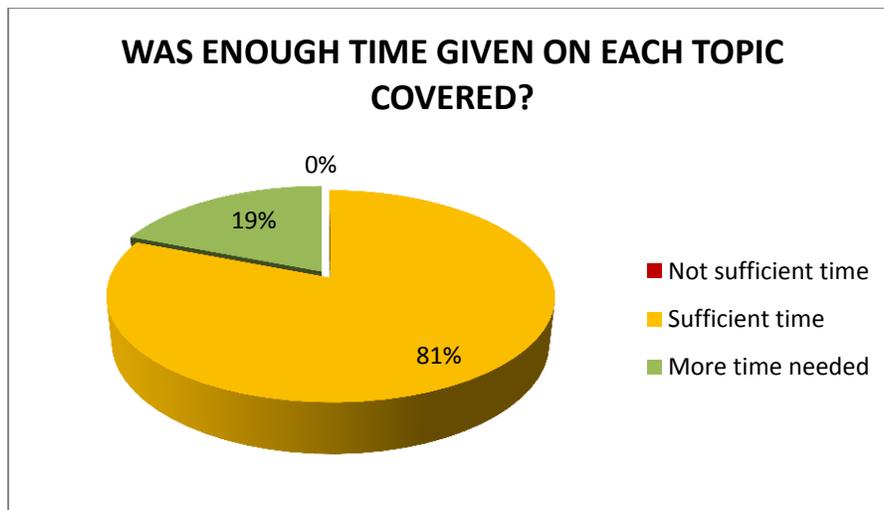


Figure 5: How do you rate the resource persons?

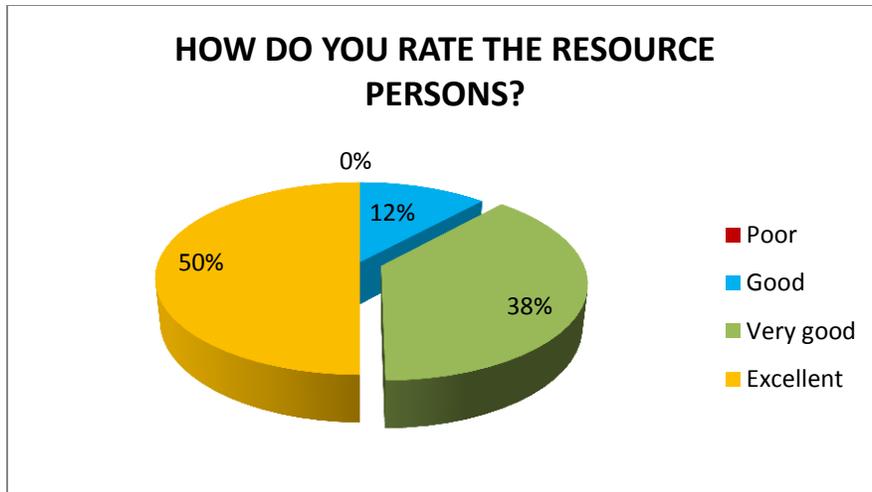


Figure 6: How do you rate the laboratory and field visits?

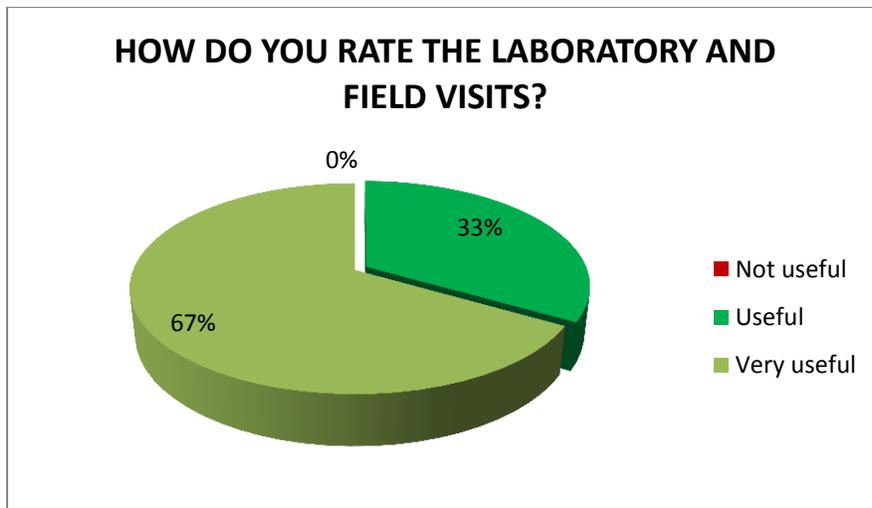


Figure 7: How do you like the venue arrangements?

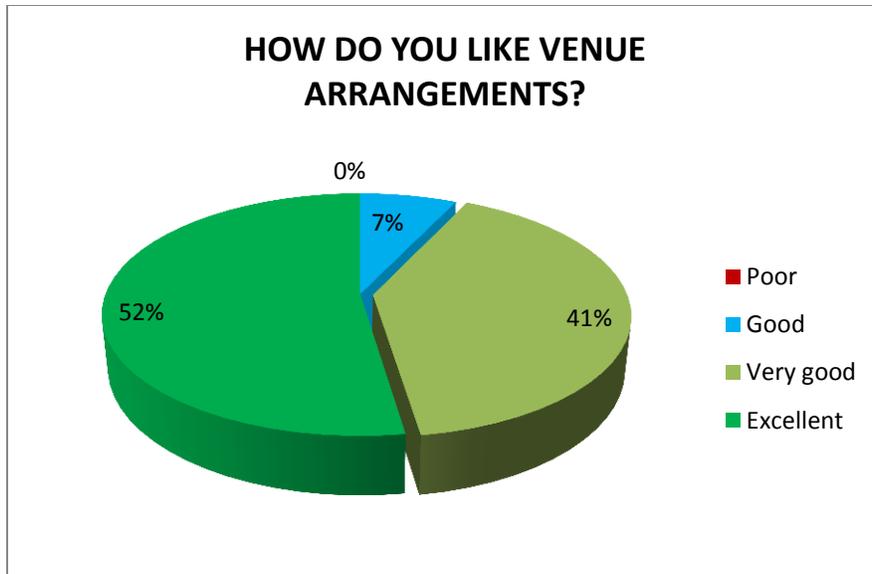


Figure 8: How do you like the food arrangements?

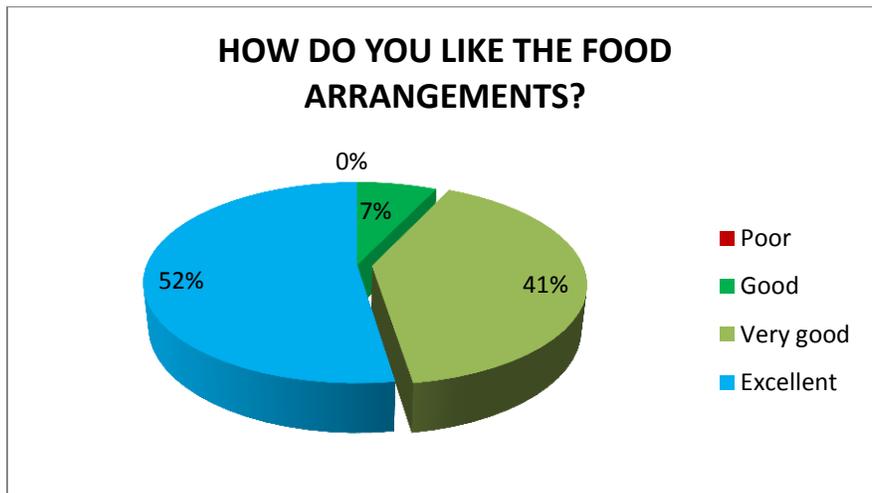


Figure 9: How do you like the travel and accommodation arrangements?

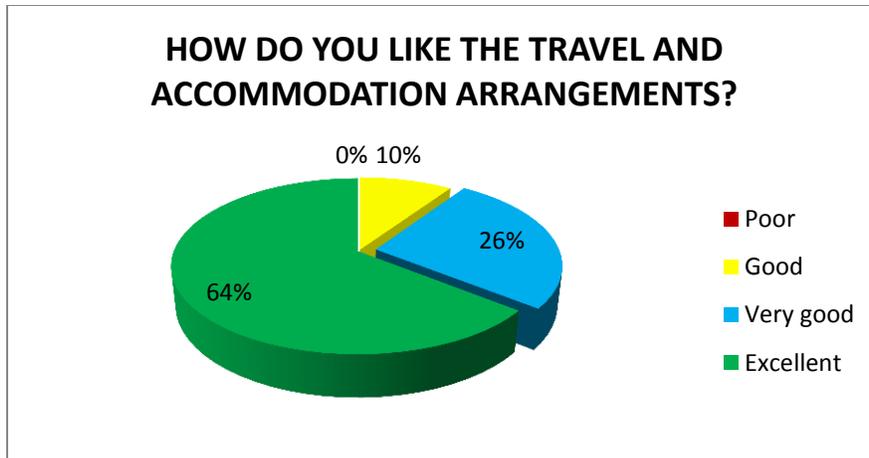


Figure 10: Overall how do you rate the programme?

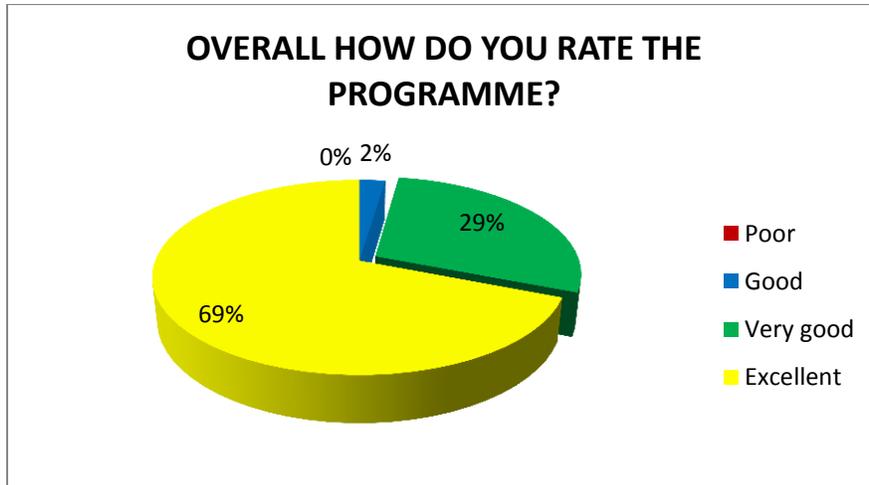


Figure 11: How useful will the training be in your field of profession?



## Training Photos

**Figure 12:** Inauguration of the training programme on 1st March 2016.



**Figure 13:** A view of trainees in the inaugural session.



**Figure 14:** Class room presentation by Dr. S. Pattanaik, IFB, Hyderabad.



**Figure 15:** Group photo of trainees.



**Figure 16:** Visit to molecular genetics laboratory at IFB, Hyderabad.



**Figure 17:** Field visit to Forest Research Station, Mulugu.



**Figure 18:** Field visit to Redsanders germplasm bank, IFB, Hyderabad



**Figure 19:** Field visit to Forest Research Station, Mulugu, Hyderabad.



**Figure 20:** Feedback by one of the trainees.



**Figure 21:** Certificate distribution ceremony.



## Appendix I Training schedule

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### Day-I (1st March 2016)

**9.0 am – 10.0 am:** Registration

**10.0 am – 10.15 am:** Inauguration

**10.15 am – 10.30 am:** Tea break

**10.30 am – 12.0 Noon:**

- Presentation on "Forest Genetic Resources – basic concepts, characteristics of forest genetic resources"
  
- And presentation on "Value and Importance of Forest Genetic Resources – economic value, environmental value, ecosystem services and resilience, social value, cultural value, medicinal value, scientific value, etc."

By Dr. G.R.S. Reddy, Institute of Forest Biodiversity, Hyderabad.

**12.0 Noon - 1.15 pm:**

- Presentation on "Factors affecting Forest Genetic Resources – Opportunities and challenges in their sustainable utilization"

By Dr. A. Sabitha Rani, Osmania University, Hyderabad.

**1.15 pm – 2.15 pm:** Lunch break

**2.15 pm – 3.15 pm:**

- Presentation on " Conservation of medicinal genetic resources in agro-ecosystems"

By Dr. Madhavi Lata, Jayshankar Agricultural University, Hyderabad.

**3.15 pm – 3.30 pm:** Tea break

**3.30 pm – 4.30 pm:**

- Presentation on " *Ex situ* conservation approach of conserving and managing Forest Genetic Resources"

By Dr. S. Pattanaik, Institute of Forest Biodiversity, Hyderabad.

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## **Day-II (2nd March 2016)**

### **10.0 am – 11 am:**

- Presentation on "Modern tools and their application in Genetic Resource Conservation".

By Dr. Santosh Deshpande, ICRISAT, Hyderabad.

### **11.0 am – 11.15 am:**

- Tea break

### **11.15 am – 1.15 pm:**

- Laboratory visit (By Dr. S. Pattanaik and Dr. M. Deepa, IFB, Hyderabad)
- Visit to Sandal and Red sanders conservation stands.

### **1.15 pm – 2.15 pm:**

- Lunch break

### **2.15 pm – 3.30 pm:**

- Presentation on "Role of Agroforestry in Forest Genetic Resource conservation and implications of climate change"

By Dr. B. Joseph, Jayshankar Agricultural University, Hyderabad.

### **3.30 pm -3.45 pm:**

- Tea break

### **3.45 pm – 4.30 pm:**

- Video presentation on "World's most endangered forests"
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**Day-III (3rd March 2016)**

**9.0 am -1.30 pm:**

- Field visit to Forest Research Station, Mulugu (Dr. S. Pattanaik and Sri M. Honnuri, IFB, Hyderabad)

**1.30 pm – 2.30 pm:**

- Lunch break

**2.30 pm – 3.30 pm:**

- Presentation on "*In situ* conservation of Forest Genetic Resources in protected area networks (National parks, Biosphere reserves, Wildlife sanctuaries etc.)"

By Sri D. Jayaprasad, Institute of Forest Biodiversity, Hyderabad.

**3.30 pm – 4.0 pm:**

- Valedictory and certificate distribution.

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## Appendix II

### Internal Resource Persons

**1. Name: Dr. G.R.S. Reddy**

**Designation:** Director

**Qualification:** Ph.D. (Forestry)

**Experience:** Over 25 years' experience in the field of forestry

**Organization:** Institute of Forest Biodiversity, Hyderabad

**Contact No:** 040-66309501

**Email ID:** [grsreddy@icfre.org](mailto:grsreddy@icfre.org)

**2. Name: Sri D. Jayaprasad**

**Designation:** Additional PCCF, Kerala cadre

**Qualification:** Indian Forest Service

**Experience:** Over 25 years' experience in forestry and wildlife management

**Organization:** Presently on deputation to Institute of Forest Biodiversity, Hyderabad

**Contact No:** 040-66309502

**Email ID:** [jpdusi@gmail.com](mailto:jpdusi@gmail.com)

**3. Name: Dr. S. Pattanaik (Training Co-ordinator)**

**Designation:** Scientist F

**Qualification:** Ph.D. (Forestry)

**Experience:** Over 18 years' experience in R&D in forestry discipline

**Organization:** Institute of Forest Biodiversity, Hyderabad

**Contact No:** 040-66309506

**Email ID:** [pattanaiks@icfre.org](mailto:pattanaiks@icfre.org)

### External Resource Persons

**4. Name: Dr. A. Sabitha Rani**

**Designation:** Assistant Professor

**Qualification:** Ph.D. (Genetics)

**Experience:** Over 25 years research experience and 12 years teaching experience

**Organization:** Department of Botany, University College for Women, Osmania University, Hyderabad

**Contact No:** 9290609610

**Email ID:** [sabitaamma@yahoo.com](mailto:sabitaamma@yahoo.com)

**5. Name: Dr. A. Madhavi Lata**

**Designation:** Associate Professor

**Qualification:** Ph.D. (Agronomy)

**Experience:** Over ten years' experience in research and three years' experience in teaching

**Organization:** Department of Agronomy, College of Agriculture, Prof. Jayashankar Telengana Agricultural University, Hyderabad

**Contact No:** 9866930111

**Email ID:** [mlata017@gmail.com](mailto:mlata017@gmail.com)

**6. Name: Dr. Santosh Deshpande**

**Designation:** Scientist (Molecular Breeding)

**Qualification:** Ph.D.

**Experience:** Over ten years' experience in genomics and molecular breeding of Sorghum and Finger millet.

**Organization:** International Crops Research Institute for Semi-arid Tropics (ICRISAT), Hyderabad

**Contact No:** 040-30713340

**Email ID:** [s.deshpande@cgiar.org](mailto:s.deshpande@cgiar.org)

**7. Name: Dr. B. Joseph**

**Designation:** Principal Scientist

**Qualification:** Ph.D. (Agronomy)

**Experience:** Over 33 years' experience in Agroforestry, Agronomy and Watershed management

**Organization:** Regional Sugarcane and Rice Research Station, Rudrur, Prof. Jayashankar Telengana Agricultural University.

**Contact No:** 9848260672

**Email ID:** [bollajoseph123@gmail.com](mailto:bollajoseph123@gmail.com)

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**Appendix III**  
**List of Stakeholders**

<b>Category - Teachers</b>				
Sl.No.	Name	Designation	Phone number	Email ID
1	Humera Nishat	Lecturer	8801669210	<a href="mailto:nishathumera702@gmail.com">nishathumera702@gmail.com</a>
2	Sumera nazneen	Assistant Professor	7306920189	<a href="mailto:sumeranaazneen2008@gmail.com">sumeranaazneen2008@gmail.com</a>
3	Nazneen Begum	Lecturer	8143817747	<a href="mailto:princes-naaz786@gmail.com">princes-naaz786@gmail.com</a>
4	Dr.J.Shashikanth	Lecturer	9550683022	<a href="mailto:jale-shashikanth@yahoo.com">jale-shashikanth@yahoo.com</a>
5	Asra Tabassum	Assistant Professor	7794991165	<a href="mailto:tabassumasra4@gmail.com">tabassumasra4@gmail.com</a>
6	Bibi Hafsa Azra	Lecturer	8297220795	<a href="mailto:maliha.ajra@yahoo.com">maliha.ajra@yahoo.com</a>
7	Dr.Sadia fatima	Assistant Professor	9703352349	<a href="mailto:ghazalaft248@gmail.com">ghazalaft248@gmail.com</a>
8	Dr.Zehra M Siddiqui	Assistant Professor	9573456535	<a href="mailto:drzehrasiddiqui@yahoo.com">drzehrasiddiqui@yahoo.com</a>
9	Dr.I.Sobha Rani	Assistant Professor	7842842146	<a href="mailto:isobharani6@gmail.com">isobharani6@gmail.com</a>
10	Mrs.Radhika Devi	Associate Professor	9247479463	<a href="mailto:radhikabsg@gmail.com">radhikabsg@gmail.com</a>
11	Dr.S.K.Shivarani	Assistant Professor	9553444585	<a href="mailto:shivaraniपालancha@yahoo.in">shivaraniपालancha@yahoo.in</a>
12	Dr.G.Sulakshana	Assistant Professor	9553396704	<a href="mailto:sulakshanasagar@gmail.com">sulakshanasagar@gmail.com</a>
<b>M.Sc-Students</b>				
13	Amtul Haleem Khan	Student	8686302933	<a href="mailto:amtulhkhani2@gmail.com">amtulhkhani2@gmail.com</a>
14	C.Rajitha	Student	9701045762	<a href="mailto:chevellarajji34@gmail.com">chevellarajji34@gmail.com</a>
15	P.Sumithra	Student	9493018012	
16	B.Kavitha	Student	9989122409	<a href="mailto:kavithanandu143@gmail.com">kavithanandu143@gmail.com</a>
17	T.Swathi	Student	7893282432	<a href="mailto:swathi009@gmail.com">swathi009@gmail.com</a>
18	Ch.Srilatha	Student	9052424311	<a href="mailto:srilathach009@gmail.com">srilathach009@gmail.com</a>
19	Sadia Banu	Student	9515226842	<a href="mailto:sadia.banu1@gmail.com">sadia.banu1@gmail.com</a>
20	Manupati Srilatha	Student	7036324048	<a href="mailto:manupatisrilatha123@gmail.com">manupatisrilatha123@gmail.com</a>
21	G.Rajitha	Student	9010817469	
22	Bonkuri.Renuka	Student	8186085798	<a href="mailto:bonkurirenuka2@gmail.com">bonkurirenuka2@gmail.com</a>
23	Chouti.Vandhana	Student	85009364503	<a href="mailto:vandhanachouti@gmail.com">vandhanachouti@gmail.com</a>
24	Ch.Saritha	Student	9063418845	<a href="mailto:sarithachavva@gmail.com">sarithachavva@gmail.com</a>
25	G.Saritha	Student	8192748823	
26	P.Sampoorna	Student	9640923230	
27	Dharani.Sindhuja	Student	8501941645	<a href="mailto:sindudharani@gmail.com">sindudharani@gmail.com</a>
28	V.Shailaja	Student	9951462369	<a href="mailto:vasamshailaja@gmail.com">vasamshailaja@gmail.com</a>
29	S.Swathi	Student	9052003563	<a href="mailto:swathisindurla5@gmail.com">swathisindurla5@gmail.com</a>
30	mulkala Divyavani	Student	9440542928	
31	Domalapalli Vasumathi	Student	8886435132	<a href="mailto:vasumathidomalapalli@gmail.com">vasumathidomalapalli@gmail.com</a>
32	E.Sowmya Vardhini	Student	9989915736	<a href="mailto:sowmyavardhini232@gmail.com">sowmyavardhini232@gmail.com</a>

33	Nuzahath Jahan	Student	7842182636	<a href="mailto:jahanuzhath@yahoo.com">jahanuzhath@yahoo.com</a>
34	Thatha Mounika	Student	9618597473	<a href="mailto:thathamounika@gmail.com">thathamounika@gmail.com</a>
35	G.Shirisha	Student	8497977556	<a href="mailto:sirisha.slms@gmail.com">sirisha.slms@gmail.com</a>
36	A.Pushpa	Student	9642134632	<a href="mailto:pushpa.aanandapu@gmail.com">pushpa.aanandapu@gmail.com</a>
37	Pardya Soujanya	Student	9948210593	
38	K.Sree Krishna Geetha	Student	7382458995	<a href="mailto:krishnageetha12@yahoo.com">krishnageetha12@yahoo.com</a>
<b>Research scholars</b>				
39	E.Shravya Puri	Ph.D scholar	9052084199	<a href="mailto:asharam341@gmail.com">asharam341@gmail.com</a>
40	Hajera Sana	Ph.D scholar	7893433862	<a href="mailto:hajera.sana@gmail.com">hajera.sana@gmail.com</a>
41	S.Sharada	Ph.D scholar	7794941228	<a href="mailto:sharada.msc@gmail.com">sharada.msc@gmail.com</a>
<b>Others</b>				
42	K.Shiva Prasad Varma	Ayurvedic Practitioner	9502187829	<a href="mailto:kspvarma18@gmail.com">kspvarma18@gmail.com</a>

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