

Format of ICFRE Annual Report 2013-14

	<p>Executive Summary Executive summary of the report Summary of projects</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-left: 20px;"> <thead> <tr> <th style="width: 25%;">Projects</th> <th style="width: 25%;">Completed Projects</th> <th style="width: 25%;">Ongoing Projects</th> <th style="width: 25%;">New Projects Initiated During the Year</th> </tr> </thead> <tbody> <tr> <td>Plan</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Externally Aided</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Projects	Completed Projects	Ongoing Projects	New Projects Initiated During the Year	Plan				Externally Aided			
Projects	Completed Projects	Ongoing Projects	New Projects Initiated During the Year										
Plan													
Externally Aided													
	Contents												
1.	<p>Introduction: Information about respective Institutes and Centres (in one para only), Map showing Institutes, Centres and their jurisdiction B.Research Management: Activities of Directorate of Research, Director(IC)</p>												
2.	<p>Managing forest and Forest products for livelihood Support and Economic Growth</p> <p>Tapping the potential of some selected indigenous lesser known wild edible plants for food and nutrition in arid and semi arid regions.(Project code no. 110/AFRI/NWFP/2011-16)</p> <p>Selected lesser known wild edible plants viz. <i>Cordia gharaf</i> (Goondi) , <i>Cassia tora</i> (Puad), <i>Ceropegia bulbosa</i> (Khedula) , <i>Haloxylon salicornicum</i> (Sajji) and <i>Grewia tenax</i> (Gangeran), <i>Calligonum polygonoides</i> (Phog), <i>Leptadenia pyrotechnica</i> (Khim) and <i>L. reticulata</i> (Rai dodi) with edible leaves/fruits/tubers consumed in arid and semi arid forest zone of Rajasthan were evaluated for their nutritive value in order to identify alternative bio-nutritional sources. Survey was carried and samples were collected from different regions in Rajasthan. Morphological data was taken and samples were analyzed for their nutrient content. <i>Leptadenia pyrotechnica</i> pods were found to have highest amount of average protein content viz 17.95 % . <i>Grewia tenax</i> and <i>Cordia gharaf</i> fruits were found to be rich sources of sugar with 28.5 % and 17.63% respectively. <i>Ceropegia bulbosa</i> and <i>Haloxylon salicornicum</i> are especially rich in minerals viz. Iron, Zinc, Potassium, Magnesium. Vitamin C content is high in almost all the species with <i>Leptadenia reticulata</i> pods having highest content (15-17.2%). All the selected species were rich sources of dietary fibre.</p> <p>Project : Enhancing fodder productivity through silvipastoral system on degraded land of India (AFRI-02/NWFP/Int-ICFRE)</p> <p><i>C. mopane</i> trial was maintained, general application of 0.2% bavistin in all the plants in summer months . Urea application (100 g/plant) was done in July 2013 after rain . Annual growth data (height and collar diameter) was recorded for <i>C. mopane</i> plants. Height increment was ranging from 3 to 7.5%. as compared to last year. Structure repairing was undertaken and grass sowing is done July but due to heavy rain immediately after the sowing germination was poor. Resowing was done in August , however due to heavy rain again grass establishment is less.Green grass yield for <i>C. ciliaris</i> was measured by laying quadrats of 1x1 m randomly on soil structures, it was ranging from 300 to 580 g m⁻² . Soil analysis indicate that pH was generally high (9.08 -10.0) on those soil structures where grass establishment was poor. Grass yield for other grasses was <i>Sporobolus diander</i> (200-875 g m⁻²), <i>Chloris</i> spp (300-800 g m⁻²), <i>Dactyloctenium indicum</i> (450 gm⁻²), <i>Bracharia ramosa</i> (260 g), <i>Cyperus</i> spp ((260 g).</p> <p><i>S. nudiflora</i> seedlings were obtained from Harij nursery in Gujarat Disc ploughing and soil leveling was done as preplanting preparations . Layout was done and soil bunds of the size 1m x 18 m x 0.3m were made at a spacing of 5 m. Seedling planting was done in August 2013 after good rain at a spacing of 4m on each bund with goat FYM (1 Kg) and SSP (15 g) . After five months (January 2014), survival (75%) and initial ht 29.7 – 57.1 cm and</p>												

crown dia 10.0-33.4 cm was recorded. Irrigations were carried out in Feb and March 2014.

		
Establishment of <i>S. nudiflora</i> on soil bunds	Establishment of <i>C. ciliaris</i> on soil slope with <i>C. mopane</i>	Various salt tolerant grasses with <i>C. mopane</i>

Rodent control work was done in Dec 2013 but was repeated in Jan 2014 due poor control in Dec 2014.

Project: Quantification, Value addition of NTFP and improved agricultural productivity in the tribal belt of Sirohi district of Rajasthan

Prepared village profile of 24 tribal dominated villages of Abu road area on NTFP collection and selling; identified key NTFPs of the study area- *Jatropha curcus* : seeds (20 villages) , *Momordica dioica*: fruits (16 villages) , *Diospyrose melanoxylon*: fruits (15 villages), *Cassia tora*: pods and seeds (14 villages), *Dendrocalmus strictus* : (12 Villages) and *Phoenix sp.* fruits : (12 Villages), *Butea monosperma* : flowers and leaves (12 villages).

Organized a meeting of tribal farmers to acquaint them with the various uses of *Acacia senegal* and other species to be planted. Selected three farmers in Siyawa village and three tribal farmers in Jamboori village interested in bund planting. Planted 105 seedlings of five species (*Acacia senegal*, *Dalbergia sissoo*, *Bambusa bambose*, *Azadirachta indica* and grafted ber) on farm bund.

Identified *Butea monosperma* as a value addition species as natural vegetation of study area is dominated by it and even its natural regeneration is observed. Therefore, it can be introduced as a source of income for rural tribals through value addition.



Planting and protection of plants by tribal farmers in Siyawa and Jamboori villages of Rajasthan

Project : Productivity enhancement of Kair (*Capparis decidua*) to generate livelihood in rural areas of Thar Desert (AFRI-07/NWFP/Ext (SFD Rajasthan)/2013-16)

Project Investigator : Dr Ranjana Arya Sci F NWFP Division

This project was sanctioned in the year 2013 for three years. **Survey was undertaken in forest areas of Jodhpur , Jaisalmer, Badmer, Pali and Nagaur district. Gogelao beed area in Nagaur was finalized after the visit with Director , GCR and Co(F) in July 2014.** The area is undulating and the texture of the soil was sandy loam. The soil pH values are ranging from 7.82 to 8.39, EC 0.27 to 0.39 dSm-1 and organic carbon (0.28 to 0.51%) in 0-20 cm soil layer.



Boundary Marking of Experimental Field

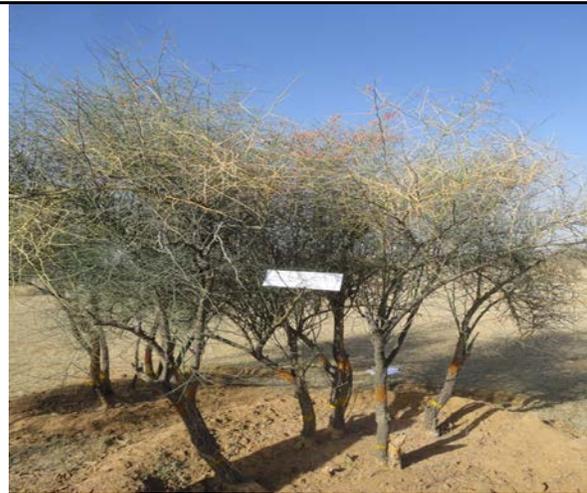


Condition of plants in Aug.2013

All the plants were divided into three blocks. Fertilizer treatments with leaf compost, goat FYM and VAM in combination to different fertilizers SSP, SSP + K, K , Zn and SSP, K, + Zn and NPK etc were applied with irrigation in October 2013. Collar diameter and height measurements were recorded in October and it was ranging from 182-243cm & 200-271 cm, 198-244cm & 200-262 cm and 174-242 cm & 200-270 cm in block A, B and C, respectively.

Phenological observation were recorded in the first week of December, all the plants showed very good crown growth , multiple new branching was observed, more in younger plants. Most of the Plants suffered with frost damage in January 2014 ranging from 10 -100% in all the plants. Flowering was initiated in March third week. It was late due to frost effect as other plants in the region flowered in first week of March. Data analysis indicate that maximum flowering (73.5%) was observed in frost affected leaf compost treated kair plants followed by Vam treated plants (24.3%). Flowering was minimum (14.4%) in Goat FYM treated plants till second week of April 2014. There was no flowering in untreated plants in any treatment.

Fencing details were discussed with DFO Nagaur, they expressed inability to provide the fencing material . SFD was requested to provide an additional sanction of 1 lakh. Quotations are invited to provide cement post with barbed wire fencing .



Plants with frost damage and flowering in various treatments

6. Forestry Education and Policy Research to Meet Emerging Challenges

6.1 Improving Formal Forestry Education-

6.1.1 FRI University (Applicable for FRI, Dehradun only)

6.2 Accreditation of Universities

6.3.1 Participation in Seminars/Symposia/ Workshops/Trainings

Papers in Indian Journals

Ranjana Arya and Vinod Singh Gour (2013): Conservation strategy for critically endangered species of the Thar Desert: *Commiphora wightii* (Arn.) Bhandari, Paper published in Indian Forester, 139(8):744-745

Mala Rathore 2012. Important lesser known wild edible plants of arid and Semi arid zone of Rajasthan. *ENVIS Forestry Bulletin*. 12(2), 56-60.

Proceedings/Chapters in book :

1. Ranjana Arya (2013). Managing Degraded Arid Sandy Salt affected Soils with *Atriplex* sp for Improved Productivity In Proceedings of First Indian Forest Congress held on 22-25 Nov' 2011, pp 93-99, ICFRE, MOEF, New Delhi.
2. Sangeeta Tripathi, Ranjana Arya and Uma Lohara (2013). Traditional Wisdom and Value Addition Prospects of Arid Food for Biodiversity Conservation in Thar Desert of Rajasthan In Proceedings of First Indian Forest Congress held on 22-25 Nov' 2011, pp 100-104, ICFRE, MOEF, New Delhi.
3. V.P. Tewari and Ranjana Arya (2012). Bamboos: distribution, uses and propagation techniques. pp. 45-53. In:

Pankaj Aggarwal, V.P. Tewari, P.R. Triveni and S.C. Joshi (eds.) Recent Advances in Bamboo Propagation, Management and Utilization. IWST, Bangalore

4. MalaRathore and RK Meena,(2013). Harvesting of *Calotropis procera* Flowers from Different Agro-climatic Zones of Rajasthan for their Medicinal Use ‘ Forestry in an Expanding Economy In *Proceedings of 1st Indian Forest Congress – 2011* ICFRE, MOEF, Dehradun, pp159-161.
5. **Sangeeta Tripathi**, Ranjana Arya and Uma Lohara (2012): Traditional wisdom and value addition prospects of arid food for biodiversity conservation in Thar desert of Rajasthan" " *Proceedings of 1st Indian Forest Congress*, held at IARI, New Delhi from 22.11.11 to 25.11.11, pg.48

National Seminar/ Conference/workshop

1. Ranjana Arya (2103): Growth enhancement of *Salvadora persica* plantation due to fertilizer application on salt affected soil in arid Rajasthan in **National Workshop on Tree Seed Science & Silviculture 28th & 29th November 2013 at IFGTB Coimbatore**

International Seminar/ Conference/workshop

1. Ranjana Arya (2104): Performance of *Ziziphus mauritiana* and *Cordia gharf* with different modes of grass sowing in silipastoral system degraded hilly pediments in Gujarat'

संगीता त्रिपाठी (2014) : अकाष्ठ वन संपदा : सिरोही जिले में आदिवासियों की आजीविका की आर्थिक संबलता का प्रमुख आधार, प्रोसिडिंग्स, राजभाषा वैज्ञानिक संगोष्ठी, रक्षा प्रयोगशाला, जोधपुर 20-21 फरवरी, 2014, पृ. सं.75-79.

रंजना आर्या एवं बिंदु निर्वाण (2013) : गुग्गुल से सतत गौद-रेजिन दोहन की इथेफोन आधारित उन्नत प्रौद्योगिकी , आफरी दर्पण, जुलाई-सितम्बर, 2013, पृ. सं. 7-9

6.3.2 Visits Abroad

4. Extension Panorama/Activities

- National Forest Library and Information Centre (NFLIC) (Applicable for FRI, Dehradun only)
- Environmental Information System (ENVIS) (Applicable for FRI, Dehradun only)

4.1 Report on Van Vigyan Kendras (VVKs) and Demo Village (DV)

4.2 Technologies transferred

4.3 Research Publications

4.4 Seminars/Symposia/Workshops Organized

4.5 Consultancies

4.6 Technical Services

4.7 Activities of Rajbhasha

4.8 Awards and Honours

4.9 Special Activities (Such as Van Mehotsava, Forestry Day and Other occasions)

5. Administration and Information Technology

Introduction

5.1 Information Technology

5.2 Sevottam: Activities relating to the Citizens/Clients Charter as detailed below has to be included in the Annual Report 2011-2012.

- 5.2.1 Action taken to formulate the Charter for the Department and its subordinate formation;

	<p>5.2.2 Action taken to implement the Charter;</p> <p>5.2.3 Details of Training Programmes, Workshops, etc. held for proper implementation of Charter;</p> <p>5.2.4 Details of publicity efforts made and awareness campaigns organized on Charter for the Citizen/Clients;</p> <p>5.2.5 Details if internal and external evaluation of implementation of Charter in the Organization and assessment of the level of satisfaction among Citizen/Clients.</p> <p>5.3 Welfare measures for the SC / ST/ backward / minority communities</p>
<p>6.</p>	<p>Annexures</p> <ol style="list-style-type: none"> 1. RTI 2. Email and Postal addresses 3. Intellectual Property <ol style="list-style-type: none"> 3.1 Patents Granted 3.2 Others