ABSTRACT OF THE PROJECT

1.	Project Code	IFB -2016-17
2.	Name of the Project	Intensive Organic Farming System based on Paddy +Bach (*Acorus calamus* L.) with Trees and Fish in Agroforestry system - A pilot research cum development project
3.	Funding Agency/ Agencies	TSMAPB
4.	Institute/ Directorate (ICFRE HQ.)	Institute of Forest Biodiversity, Hyderabad
5.	Name and Designation of Principal Investigator	Dr. G.R.S.Reddy, Scientist-G
6.	Name (s) and Designation (s) of Co-Principal Investigator (s) and Associates, if any	Mrs. SoniBala Devi IFS Chief Executive Officer, Telangana State Medicinal Aromatic Plants Board
7.	Division	Forest Ecology and Climate Change
8.	Project Discipline	Ecology and Environment
9.	Objectives of the Project	**Long term Objectives:** Create a hub of *Acorus calamus* production in Telangana and diversify farmer's income and increase productivity per unit area by combining simultaneously or sequentially the crops

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<tr><td></td><td></td><td>such as bach, paddy, trees (Babul (Acacia nilotica), Sesbania grandiflora, Sandal (Santalum album), Pongamia pinnata (Karanz) and Medicago sativa (Lucerne) and fish and secure health for all

Short term Objectives:

1)To raise Acorus calamus crop along with paddy, trees and fish in Telangana wetlands</td></tr>
<tr><td>10.</td><td>Species involved</td><td>Sesbania grandiflora, Acacia niloticaand fodder trees, Medicago sativa as feed to fish and as manure to Acorus calamus,the main crop.</td></tr>
<tr><td>11.</td><td>Experimental Work</td><td>The experimental work is to plant paddy, Acorus calamus simultaneously and release fish and grow trees on the bunds that is fodder for fish and manure for Acorus calamus and cash returns to the farmers and health and nutrition to the society.

Seedlings were distributed to the following farmers:

<table>
<tr><th>Name of the farmer and address</th><th>Date of distribution</th><th>Plantation area</th></tr>
<tr><td>Shri. JVR Kishore Babu (939823899), Janakampet Village Nizamabad</td><td>June 2016</td><td>3 acres</td></tr>
<tr><td>Shri. B. Bapu Reddy (9441367099) Thippaipally</td><td>July 2016</td><td>2.5 acres</td></tr>
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		Shri. B. Bapu Reddy (9441367099) Gummadam	July 2016	2.5 acres
		Shri. GattuThimmappa (9440200788), Gadwal	June 2016	8 acres
		Shri. Vishnu, Jedcherla	April 2016	2 acres
		Shri. K. Nagi Reddy S/o K. Koti Reddy, Nagireddyguda, Nereducherla Mandal, Nalgonda	April 2016	8 acres
a)	Methods adopted	The paddy was planted at 20 x 20 cm spacingand *Acorus* was planted at 30 x 45 cm and 45 x 45cmspacing. The *Acorus clamus* was brought from Jabalpur. The rooted propagules were not available, only rhizome cuttings were available and they were purchased and supplied as there is no other alternative. Since the material in Jablapur was Kullu accession supplied by me it was preferred for its quality parameters. The rooted propagules which are arising from apical buds or grown for a little longer period in soil form pink buds which were always better which grew to 1.5 m in length but the stem cuttings took four months to establish and nine months to grow to maturity and harvest.		
b)	Equipment's used, if any	Computer, Digital camera,pH, E.C meter, Weighing machine, Tape		
c)	Scope (States covered)	Telangana		
12.	Date of commencement of the Project	11th April 2016		

13.	Date of completion of the Project	31st March 2017
14.	Budget outlay of the Project	Rs. 6.32 lakhs
15.	Expenditure incurred on the Project	Rs.4.00 lakhs
16.	Reason for financial deviation	Released as per availability of funds
17.	Manpower involved	Farmers have provided their own man power. Scientific inputs were given.
(a)	No. of Scientists/officers	Two
(b)	No. of Research personnel	Field Assistants not part of the project
(c)	No. of office staff	One Field Assistant from other projects was given additional work
18.	Extension of findings to the User Groups	Farmers of the State
19.	Publications from the findings of the Project	Nil
20.	Patents, if any	Nil
21.	Project Summary/achievements/ Findings during the project period.	1). The lesson learnt is that the success depends on rooted vegetative slips as compared to stem cuttings as the crop maturity period got enhanced by three

		months instead of 12 months due to unrooted rhizome cuttings. 2). Sufficient water in summer should be made available, and it should be tested before the planting is taken up. 3). In one of the sites (Mr. JVR Kishore Babu's farm), the crop failed as there was a clash of interest between tenant and farmer and it resulted in failure. And farmer did not plant and propagules dried up resulting in failure and loss of planting material and time and labour. 4).Shri.GattuThimmappa has done the trial as per the experiment in a bookish manner and succeeded in raising paddy and *Acorus* together with fish and trees on bunds. First year crop was successful but he had converted the entire 8 acres farm into fish pond as fish proved to be more profitable. The *Acorus* yield was 2.4 tonnes per acre on an average. The soil was loam and pH was normal to slightly saline towards lower slopes. But growth was better in the slope due to more moisture. Paddy yield was 2.5 tonnes per acre which is as usual. 5).Shri.B Bapu Reddy has planted *Acorus* crop and maintained well and

		successfully and the yields obtained were in the range of 2.1tonnes per acre and 2.5 tonnes per acre in Thippaipally and Gummadum respectively. Thippaipally site was submerged initially for 2 months even though the crop successfully grew up from under 45 cm water for three weeks and 20 cm water for three weeks. More importantly it was saline alkali soil. Yields were on par with 2.1 tonnes per acre of *Acorus* rizhomes. 6) Shri.Nagaraju cultivated one ha area under the IOFS with different components and recorded 2.70 tonnes/acre. The yields would have been 3.0 tonnes and above had we been able to provide rooted propagules as it was one disadvantage felt in the trials.