ANNUAL PROGRESS REPORT

2010-2011

GRAMIN VIKAS TRUST RAIPUR, (CG)





Gramin Vikas Trust

Office : PRATIKSHA, C-80, Sector – 4, Devendra Nagar, Raipur- 492001 (CG) Telefax No. : 0771-2284815 Email : <u>gvtraipur@sifymail.com</u> Web: <u>www.gvtindia.org</u>

INDEX

Sl. No.	CHAPTER	PARTICULAR
1	Chapter I	Wadi - I
2	Chapter II	Wadi –II
3	Chapter III	CInI Project
4	Chapter IV	RiUP Best Bet Project
5	Chapter V	SLP Project
6	Chapter VI	VDP Project
7	Chapter VII	Alt. IGA Project
8	Chapter IX	Financial Overview

ACKNOWLEDGEMENT

This Annual Progress Report of **Gramin Vikas Trust, Raipur, Chhattisgarh** is a sincere attempt to make an in-depth study of the physical financial work progress for development of poor marginal farmers of **Chhattisgarh**. The present work is the modest attempt to draw a closer sketch the developmental work being done by Gramin Vikas Trust.

Neither has it had any pretention to be a scholarly treatise nor claim absolute originality in this presentation but what matters is the sincere and honest efforts towards the outcome.

This is a unique experience & indeed a source of immense pleasure to conduct the preliminary data collection and survey. The field work and writing process had been full of unforgettable moments of excitements, apprehensions, hindrance, adventure, understanding and lot of learning through field work.

After the completion of this task words are inadequate in expressing deep sense of gratefulness to **All Funding Agencies** for providing the opportunity to implement all these projects and giving their guidance and valuable suggestions for betterment.

GVT would like to render special thanks to all the community members for participating in this project very enthusiastically and guiding us throughout the project. It was under their enlightening guidance that we were able to complete the project.

GVT Team, Raipur, (CG)

PREFACE

This report describes the development efforts of GVT to be initiated through **Various Projects** in Chhattisgarh. The projects has been dealt with various dynamics of the developmental aspects of poor rural community. The need for community's participation in qualitative and quantitative development of the natural resource was recognized right from the outset. Government of India and various Funding Agencies realized that these projects could be a suitable and sustainable endeavour for the difficult areas where the percentage of development is comparatively lower. Also it is envisaged that in the identified areas the poor marginal farmers and forest dwellers did not meet even the basic needs of the life. Thus appropriate and long lasting options for the qualitative improvement of livelihood, reduction in poverty and overall improvement of the living standard of community would be an important part of our implementation work.

In this report we have presented the efforts being taken for the implementation of strategies for sustainable advantages of the projects. This report produced positive outcomes that will benefit the livelihood of thousands of poor farming households in Chhattisgarh.

The participatory methods used here are widely applicable to all farming systems and forest dwelling communities across India. We hope that this will stimulate others to use these approaches that have proven to be so effective in increasing the options available to community in some of the most difficult development conditions in the country.

The results in this project show the power of working closely with the community to find out exactly which system and methodologies are acceptable to them.

4

ABBREVIATIONS

- Alt IGA Alternative Income Generating Activity.
- RiUP Research in Use Project.
- SLP Sustainable Livelihood Enhancement of Poor Rural Community Project.
- VDP Village Development Plan.
- SWC Soil and Water Conservation
- WRD Water Resource Development.
- BMO Block Medical Officer
- PHC Primary Health Center
- SHG- Self Help Group
- SWC/WRD Soil Water Conservation/Water Resource Development

Chapter - I Project – WADI - I Funded By – NABARD, RAIPUR, (CG)



WADI – I, PHASE-II

"Wadi" programme is agriculture based farming system in the rainfed tribal areas, which envisaged empowering women through community participation, initiatives for micro financing as well as processing and marketing of products. The project is focused on **development of small fruit orchard** (Wadi), agriculture improvement through inter cropping and restoration of denuded land through soil and moisture conservation measures. It was observed that this programme is an effective tool for addressing the livelihood problems of the tribal families. NABARD is funding the project and GVT (Gramin Vikas Trust) became the nodal agency for the programme and has created a dedicated fund for the project namely Tribal Development Fund (TDF) with an initial corpus of **Rs.50 Crores** which is to be supplemented by similar contribution from central and state government.

The Wadi-I project has been implemented in **21 villages of block Charama, District Kanker,** (CG). The project is about planting **53 horticulture plants** in **1 acre waste land** these plants are **Mango - 25 Cashew-21 & Lemon-7**. Along with this border plants viz **Khamar, Sagoun, Ber, Aonla & Bamboo** are also being given to the farmers. The **total duration** of the project is **7 years**.

WADI – I, Phase – II

				(Rs. 000)		
Sl. No.	Programme components	Year 2	Achievement	Percentage (%)	Lag (%)	
1.	Livelihood programme					
a.	Horticulture Plantation	3663	3057	83.46	16.54	
b.	Soil conservation	899	956	106.34	- 6.34	
c.	Water Resource Development	1773	355	20.02	79.98	
2.	Women Development	157	160	101.9	- 1.9	
3.	Community Health	88	90	102.3	- 2.3	
4.	Training and Capacity Building	146	133	91.09	8.91	
5.	Sub-Total of Development Interventions	6726	4751	70.63	29.37	

Projection of Physical Vs Financial

In WADI-I, Phase-II project, under Horticulture Plantation of Livelihood programme, GVT has been covered the targeted **400 acres** in **21** Different project Villages of Charama Block of Kanker District, Chhattisgarh. Under the sub-Head of Horticulture Plantation of Livelihood **Programme**, GVT disbursed the following amount accordingly as Budget sanctioned.

Subject/Operation	Unit	Qty	Rate (In Rs.)	Value	Total
A. Material					
1. Mango Grafts	No.	25	25	625	2,50,000
2. Cashew Grafts	No.	21	25	525	2,10,000
3. Lemon Grafts	No.	7	20	140	56,000
4. Border Plants	No.	325	2.50	813	3,25,200
5. Fertilizers and Manures					
Ν	Kg	5.3	12.50	66	26,400
Р	Kg	2.65	31.25	83	33,200
К	Kg	4.8	9.58	46	18,400
Neem Cake	Kg	106	3	318	1,27,200
Bone Meal	Kg	53	3	159	63,600
6. PP Chemicals				500	2,00,000
7. Pitchers (Irrigation)	No.	160	8	1280	5,12,000
B. Labour					
8. Ploughing	Day	2	200	400	1,60,000
9. Pit Digging	MD	28.786	36	1036	4,14,400
10. Pit Filling and Plantation	MD	14.393	36	518	2,07,200
11. Basin Weeding	MD	10	36	360	1,44,000
12. Application of PP Chemical and fertilizers	MD	10	36	360	1,44,000
13. Irrigation	MD	10	36	360	1,44,000

14. Tree Crop	325		500	2,00,000
Management				
15. Implements	0	0	500	2,00,000

Purchase Procedure Followed

The purchase committee of GVT, Raipur had gone for the market survey in different location of UP in the month of July 2010 to identify the party. Consequently Abdullah Nursery, Malihabad, Lucknow, (U.P.) was finalised as the L1 party. Mango, Lemon and Karonda plants have been purchased from this nursery. This nursery has been honoured with Padam Shri Award for its truthfulness & growing extraordinary quality of mango and other horticultural plants. Despite this the manager of Abdullah nursery also gave some suggestion about landscaping and better cultivation practices viz. grafting, method of planting, application of chemicals and fertilizers, irrigation management etc.



Figure showing plants procured for plantaion

Sad Bhavana SHG, Ranidongri has been developed by Gramin Vikas Trust, Raipur engaged in Pitcher making unit. The members got all the technical inputs by training conducted in Ganpati Traders, Dhamtari, (CG) like the combination of sand and cement (1:10), cementing of pitcher, hole size of pitcher, percolation rate from the hole, etc. The 12 member Sad Bhavana SHG got an option for their Livelihood. In lean season member worked together for pitcher making and in peak season, members engaged in Agriculture activities. The Up gradation in status (Financial, Economical and Social) of SHG members reflect the potential of Tribal women and the direction, technical assistance, provided by Gramin Vikas Trust, Raipur.



Following are the pictures showing activitiesWomen

SHG members preparing pitcher



SHG Members are preparing in cement layering of Pitcher.



The preliminary preparation for pitcher



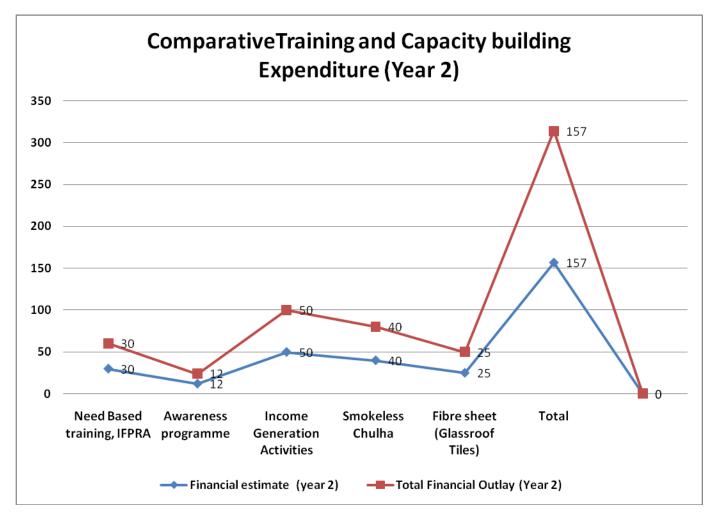
Miss Minakshi Bisen, APO, GVT, Raipur is supervising SHG Members about the technicalities and SHG Members are engaged in material preparation for Pitcher

In Wadi-I, Phase-II project, under Training, Capacity building Component, GVT has been covered the targeted 400 beneficiaries in 21 Different project Villages of Charama Block of

Kanker District, Chhattisgarh. Under the sub-Head of **Training, Capacity building Component**, GVT (Raipur) disbursed the following amount accordingly as Budget sanctioned.

Training, Capacity building

<u>a 11</u>		T T 1 :		T1 1 T		(Rs. 000)
S.N.	Activities	Unit	Physical Estimate (year 2)	Financial estimate (year 2)	Total Financial Outlay (Year 2)	Percentage
1.	Community Mobilization	No.	8	24	24	100
2.	Farmers Training, Material demonstration	No.	6	36	36	100
3.	Farmers Exposure visit (Outside State)	No.	2	40	20	50
4.	Farmers exposure Visit (Within State)	No.	5	10	10	100
5.	Training to PIA staffs	No.	4	24	24	100
6.	Non-Farm Training	No.	2	12	12	100
	Total		27	146	126	86.30



Graph showing comparative Training and Capacity Building Expenditure

Under **Training**, **Capacity building** component, GVT, Raipur had organized Video shows, Wall paintings, meetings to aware the WADI beneficiaries about the project. In these context video shows in all 21 villages of Wadi has been organized to generate awareness and motivate the villagers.

In the show all technical aspects viz type of soil, planting, agricultural inputs, stacking, fencing, etc is explained in a movie "*Wadi Ho To Aisi*". Consequent to this some more movies for health awareness was shown viz safe drinking water, health awareness, etc. Also for making them aware about Income Generating Activity, some movies were shown to the villagers.

The shows were very successful and villagers have started responding positively for next phase of WADI. These video shows were helpful in clearing the mental blocks of villagers about WADI project. Our community organizers have described all the components of WADI very meticulously to the villagers. The appreciable point was that the women participation was considerably higher in comparison to the men participation.



Villagers watching video show on Wadi ho to aisi



Villagers watching Wadi shows

Wall Painting

Farmers got motivated through **wall painting** along with the other activities, **pamphlet** and **posters**. These tools are very effective and Wadi beneficiates were getting inspiration with the essence of these slogans being painted on the walls.

Following are the pictures showing the Wadi slogans being painted in the walls of villeges



Wall painting in Wadi Village at Gitpahar



Wall painting in Wadi Village at Kusumpani

Under Training, Capacity building component, GVT, Raipur had organized an activity of farmer's training & Material Demonstration, at Krishi Vigyan Kendra (KVK), Kanker, Chhattisgarh. The KVK scientists had provided training to the farmers on new techniques of

paddy cultivation, Vermi-compost Units, NADEP cow dung compost unit, new varieties of Red gram, Pigeon pea and other Oil seed crops and pulses. Along with that Farmers visited the plots of Banana, papaya, mango and learnt the methods of orchard making. Mr. Birbal sahu and their associates had demonstrated new farm machineries like cono-weeder, seed cum ferti drill, hand harrow, cycle harrow etc. The new machineries can save the time and increase the productivity of land. Marginal farmers can also increase their produce by these new techniques. The subsistence WADI farmers had an exposure of best field practices.



Farmers Training at KVK by Agri-Scientists



Mr. Birbal Sahu delivering speech on new Techniques of Paddy Cultivation



Farmers are listening carefully the Concept of

Farmers are enjoying the training peacefully. New Technique of Paddy Cultivation



Mr. Birbal Sahu demonstrate a Vermi-compost unit



Mr.Phool Singh Markam demonstrate Tissue Culture of Banana



Mr. Ramamohan Sabu demonstrate marigold Plot paddy Plot



Mr. Ramamohan Sabu demonstrate Summer



Mr. Birbal Sah and his associates demonstrate Advanced seed cum ferti drill.



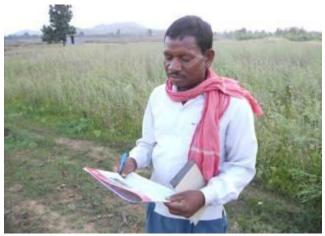
A farmer harrow weeds by cycle harrow



Demonstration of Hand Harrow and Conoweeder by Mr. Birbal sahu and Mr. Ramamohan Sabu



Mr. Biarbal sahu Demonstrate an Advanced Seed Cum ferti Drill



Mr. Ghansu Kunjam in his leisure Period



Mr. Birbal sahu demonstrate seed drill



KVK Staffs demonstrate Seed

Machine

Ferti drill Pheromone tran to control

Ferti drill Pheromone trap to control insects and pestst

An Exposure visit of wadis in Banswada, Rajasthan

Under **Training, Capacity building** component, an exposure visit outside the state in Banswada, Rajasthan was organized under NABARD, WADI project.

The participants learnt about all technical and non technical aspects of WADI. After accomplishment of this exposure visit the participants are confident and well versed with the concept of the WADI and its sequential development. The participants gathered new ideas and information like maintenance and marketing of nursery, watershed structures, etc. The farmers also shared their learning and views of WADI with the other villagers of Charama Block after their visit.



Wadi Visit of Farmers at village Kushalgadh Banswada, Rajasthan.



Wadi Visit of Farmers at village Kushalgadh Banswada, Rajasthan.



Intercropping in Wadi

Under **Training, Capacity building** component, 5 exposure visits within state at Chhindbharri, Dhamtari, Chhattisgarh was organized under NABARD, WADI project. The Wadi beneficiaries got the idea of **orchard development, caring of plants, stacking, fencing, and watershed structures**. The concept of intercropping in Wadi was also taught to them. The benefits of **deep ploughing, crop rotation, vermicompost, nursery management & drip irrigation concept** had dealt by Pradan officials. The exposure visit of Wadi beneficiaries was very fruitful.



WADI visit of Farmers at Chhindbharri, Dhamtari, Chhattisgarh



Wadi visit of Farmers at Chhindbharri, Dhamtari, Chhattisgarh



Wadi visit of Farmers at Chhindbharri, Dhamtari, Chhattisgarh (Intercropping)



Wadi visit of Farmers at Chhindbharri, Dhamtari, Chhattisgarh (Watershed Structure)

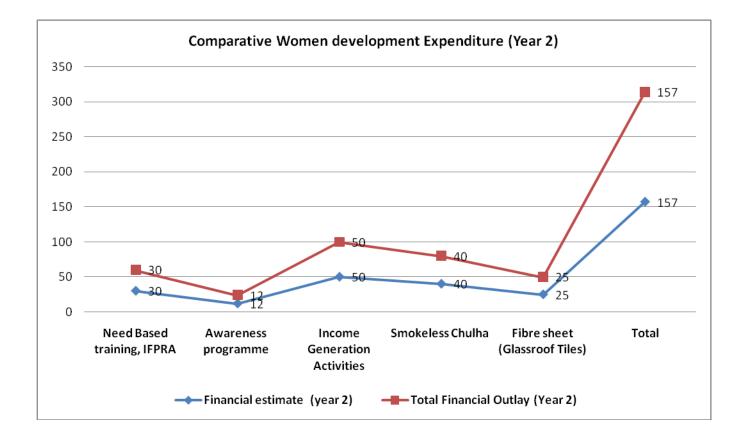
Under Training, Capacity building component, 4 PIA Staff training had been conducted at Raigarh Sahyog Samiti (RSO), Raigarh, Chhattisgarh under NABARD, Wadi project.The

PIA staffs got the idea of orchard development, caring of plants, stacking, fencing, and watershed structures. The concept of intercropping in Wadi was also taught to them. The benefits of deep ploughing, crop rotation, vermicompost, nursery management & drip irrigation concept were dealt by RSO officials.

Under Training, Capacity building component, 2 Non Farm Training Programme had been conducted in Geetpahar and Ranidongri. The focus was demand driven which was lac cultivation. 60 beneficiaries were participated in this programme. Mr. P. Mandavi, Master trainer provided their valuable suggestions to villagers. The training covered rearing and caring of lac insect, incubation period of Lac, processing and marketing of Lac, etc. The beneficiaries were following the obsolete way of Lac cultivation, but after the training, they were zealous to cultivate the lac with new scientific way. They had demanded quality brood lac and as a whole the training was Successful.

						(Rs. 000)
S.N.	Activities	Unit	Physical Estimate (year 2)	Financial estimate (year 2)	Total Financial Outlay (Year 2)	Percentage
1.	Need Based training, IFPRA	No.	10	30	30	100
2.	Awareness programme	No.	8	12	12	100
3.	Income Generation Activities	No.	5	50	50	100
4.	Smokeless Chulha	No.	100	40	40	100
5.	Fibre sheet (Glassroof Tiles)	No.	100	25	25	100
	Total			157	157	100

Women Development



Under **women development**, 10 need based training had been organized on Poultry, house hold based Food processing unit, NTFP, Lac cultivation, washing powder, Agriculture mandi visit. The objective of this training is to build the capacity of SHG by Nursery development through income generating activity.

A nursery at village kilepar has been developed by a SHG under WADI project. The nursery has been developed to meet out the requirement of horticultural sampling for wadi as well as to popularize the practice of planting horticulture plants in village area of charama block. The existing SHGs are very much interested in establishment of nursery at village but they are lacking technical & management skills required for the maintanance of nursery.



Need based training for the members of the SHGs were organized on the following topics: House hold based processing unit, Washing Powder, Lac, Mandi procedure, Poultry



Sharathi Mahila SHG Members under learning process



Member of Chetna Mahila SHG is Preparing Processed food



SHG members got training of NTFP (Processing of NTFP) at Dugli, Dhamtari, Chhattisgarh.



Training on poultry.



Training on poultry unit establishment by Veteranarian.



Washing powder training to 3 SHGs at Halba and Mr. R.P.Minz investigating the training.

Under **women development**, 8 Awareness programme had been organized in 21 Villages through advertisement (Road shows), pamphlet distribution and WADI slogans. Farmers were

motivated along with the other activities through Avertisement, pamphlet. These tools are very effective and WADI beneficiates were getting inspiration with the essence of these slogans being painted on the walls.

Under **women development, 125** beneficiaries got benefitted of smokeless chulha. The women of the viilages spent 70-80% of their working time in Kitchen and traditional chulhas were emitting lot of smoke and subsequently, decrease the calorific value of fuel These villagers were given training for construction of Smokeless Chulhas. After training the

beneficiaries were provided all the necessary material for the construction of smokeless Chulhas viz Pipe, Bricks, Iron Grate, Cement, Red oxide Primer & Paint, etc.

The basic aim of this activity was to contribute somewhere in the conservation of Forest. This is by reducing the consumption of fuel wood. Moreover this activity will contribute in keeping the health status of women intact. This activity will reduce the emission of smoke near the cooking place, which will help the women's to get rid of the breathing problem and lungs infection and eye infection. Furthermore, these smokeless Chulhas will help in improving the general ambience of the house. It is so because the traditional Chulhas emits lot of smoke which gets deposited on the wall everyday and turns it dark. Simultaneously the deposition of the smoke in the form of carbon is hazardous for health. It absorbs the light and leads to darkness inside the house even during the day time. Also a specific smell remains throughout with the use of traditional Chulhas, which can be rectified by the use of smokeless Chulha.

Smokeless Chulhas are also cost effective in comparison to the traditional Chulhas because complete combustion of fuel takes place in smokless Chulhas because of the increase in the calorific value of wood, cow dung cake and coal etc. This activity has also addressed the drudgery of women.



Smokeless Chullah

 $(R_{S}, 000)$



Smokeless Chullah under Construction

Number of Fiber Sheets installed: 125

The traditional tribal house of Chhattisgarh is thoroughly deficient of sunlight inside the house. It is so because, these houses doesn't have ventilation or windows. Moreover the doors are also very small, because of which the house remains very dark even on the bright sunny day. Therefore, the villagers need to use the earthen lamp or Lantern even during the day time. The use of glass roof tiles will also be a cost effective affair as it will save the consumption of Kerosene and electricity during the day time.

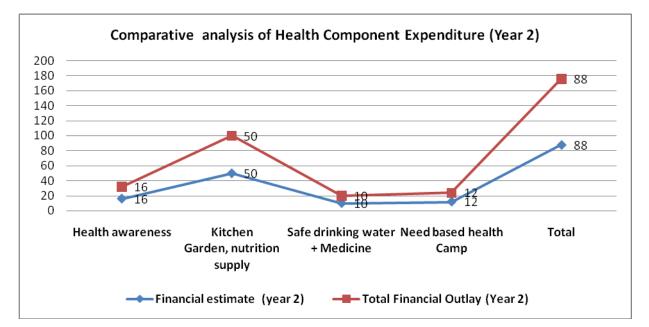
After installation of glass roof tiles women can stay inside the house for longer duration which can help her to do maximum work within the house during the harsh summers, rainy season, and extreme winter time.

S.N.	Activities	Unit	Physical Estimate (year 2)	Financial estimate (year 2)	Total Financial Outlay (Year 2)	Percentage
1.	Health awareness	No.	8	16	16	100
2.	Kitchen Garden, nutrition supply	No.	100	50	50	100
3.	Safe drinking water + Medicine	L.sum	5	10	10	100

Health Component

4.	Need based health Camp	No.	2	12	12	100
	Total			88	88	100

Graph showing comparative analysis of health component expenditure



Health awareness

Under Health component of WADI project, 8 health awareness programmes has been conducted by GVT, Raipur with an ambition to creat awareness among the villagers and make them health conscious. The programmes were organized in Pandripani, Lilwapahar, Ranidongri, Dumarpani, Aroud, Kurrubhat, Jepra, and Badatola.

Kitchen Garden, Nutrition supply

Under Health component of WADI project, GVT, Raipur provided vegetable seeds to the beneficiaries to earn profit from vegetable cultivation or use vegetables in their diet for health point of view.

Safe Drinkin water

Under Health component of WADI project, 5 Safe drinking water programmes has been organized by GVT, Raipur in 5 different project villages: Ranidongri, Halba, Palewa, Bhanpuri, Kohkatola. The Objective of conducting safe drinking water programme is to aware the villagers about fatal diseases caused due to water contamination like Diarrhoea, Cholera, Jaundice, Hepatitis-B etc. The best way to cope up with these diseases is to take preventions especially in monsoon season. Use boil and filtered water for drinking purpose; avoid stagnation of water in villages causing Malaria, Dangue, etc.

Need Based Health Camp

A health Camp has been Organized by Gramin Vikas Trust, Raipur at Palewa Village of Charama block District Kanker, Chhattisgarh under health component of NABARD WADI-I. The camp was Constitute of a team of 4 Doctors and 6 Paramedical staffs. 128 villagers from villages Palewa, Kilepar, Jepra, Geetpahar, and Hatkacharama were benefited. There was an eye specialist in the camp; patients checked their eyes up during the camp. Two lady doctors were taking care for the problems of Ladies in the camp. The Block medical Officer Chrama supported and assisted us and made the Camp successful. GVT, Raipur Purchased the medicine under the prescription of Dr. O.P.Shankhwar, Block medical Officer posted over there. The Camp targeted Ladies, Children, Old men and women because these sections need more attention on Health Point of View. There was an Instance in Camp a 6 Month old baby was a victim of Jhhola chhaap Doctor and his stomach had burning spots. So, we have to organize more health camp in these tribal areas so we cannot lose lives of innocents and upgrade the ranking in HDI. Health Camp at Palewa under NABARD WADI-I



Health Camp at Palewa under NABARD wadi-I



Doctor examining the patients



Doctors examining the villagers in the camp

Health Camp

Health Camp was organized under NABARD Wadi project at village Bhanpuri, Charama, Kanker. The total number of beneficiaries from village Banpuri, Murdhowa and Thanabodi were **246**.

Dr. O. P. Shankhwar, Block Medical Officer, Charama, Dr. Reshma Kewalramani and Dr. Nisha Kewalramani, Primary Health Center, Halba, Haradulla and an Ophthalmologist were in the team of doctors. In this health camp participation of women was given special attention.



Village women seeking benefits of medicines distribution in Health Camp



Distribution of medicine in health camp in Bhanpuri



Doctors examining the villagers in Health Camp



Doctors prescribing medicines to Village

Chapter - II Project – WADI – II Funded By – NABARD, RAIPUR, (CG)



WADI – II, Phase-I

"WADI" programme is agriculture based farming system in the rainfed tribal areas, which envisaged empowering women through community participation, initiatives for micro financing as well as processing and marketing of products. The project is focused on development of small fruit orchard (WADI), agriculture improvement through inter cropping and restoration of denuded land through soil and moisture conservation measures. It was observed that this programme is an effective tool for addressing the livelihood problems of the tribal families. NABARD became the nodal agency for the programme and has created a dedicated fund for the project namely Tribal Development Fund (TDF) with an initial corpus of Rs.50 Crores which is to be supplemented by similar contribution from central and state government.

The WADI-II project is implemented in 4 villages of block Charama, District Kanker, (CG). The project is about planting 53 horticulture plants in 1 acre waste land these plants are Mango-25 Cashew-21 & Lemon-7. Along with this border plants viz Khamar, Sagoun, Ber, Aonla & Bamboo are also being given to the farmers. The total duration of the project is 7 years.

WADI-II, Phase-I

S.N.	Programme Components	Year 2	Achievement	Percentage (%)	Lag (%)
1.	Livelihood programme				
a.	Horticulture Plantation	23.29	17.33	74.41	25.59
b.	Soil conservation	3.40	3.46	101.76	- 1.76
c.	Water Resource Development	10.90	2.11	19.36	80.64
2.	Women Development	1.13	0.95	84.07	15.59
3.	Community Health	0.68	0.56	82.35	17.65
4.	Training and Capacity Building	1.10	0.92	83.64	16.36
5.	Sub-Total of Development Interventions	40.50	25.33	62.54	37.46

Physical Vs Financial Projection

(Rs. Lakh)

In WADI-II, Phase-I project, under Horticulture Plantation of Livelihood programme, GVT has been covered the targeted 200 acres in 4 Different project Villages (Thanabodi, Nawdabri, Sriguhan, Hatka-Charama) of Charama Block of Kanker District, Chhattisgarh. Under the sub-Head of Horticulture Plantation of Livelihood Programme, GVT (Raipur) disbursed the following amount accordingly as Budget sanctioned.

Subject/Operation					Total
	Unit	Qty	Rate	Value	
C. Material					
16. Mango Grafts	No.	25	25	625	125000
17. Cashew Grafts	No.	21	25	525	105000
18. Lemon Grafts	No.	7	15	105	21000
19. Border Plants	No.	325	5	1625	325000
20. Fertilizers and Manures					
Ν	Kg	5.3	12	64	12800
Р	Kg	2.65	29	77	15400
K	Kg	4.8	10	48	9600
Neem Cake	Kg	106	9	954	190800
Bone Meal	Kg	53	7	371	74200
21. PP Chemicals		0.39	500	195	39000
22. Pitchers (Irrigation)	No.	159	8	1272	254400
D. Labour					
23. Ploughing	Day	2	200	400	80000
24. Pit Digging	MD	25	40	1000	200000
25. Pit Filling and Plantation	MD	11	40	440	88000
26. Basin Weeding and formation	MD	15	40	600	120000

27. Fertilizers	MD	6	40	240	48000
application and					
Spraying of Plant					
Protection Chemicals					
28. Irrigation	MD	30	40	1200	240000
29. Ag.Implements		0	0	1905	381000
+Intercrop+Fencing					

The purchase committee of GVT, Raipur had gone for the market survey in different location of UP in the month of July 2010 to identify the party. Consequently **Abdullah Nursery**, **Malihabad**, **Lucknow**, **(U.P.) was finalised as the L1 party**. Mango, Lemon and Karonda plants are purchased from this nursery. This nursery has been honoured with **Padam Shri Award** for its truthfulness & growing extraordinary quality of mango and other horticultural plants. Despite this the manager of Abdullah nursery also gave some suggestion about landscaping and better cultivation practices viz. grafting, method of planting, application of chemicals and fertilizers, irrigation management etc.



Figure 1 Mango plants are ready for loading

Sad Bhavana SHG, Ranidongri has been developed by Gramin Vikas Trust, Raipur engaged in Pitcher making unit. The members got the technicalities by Trainers like the combination of Sand and cement (1:10), cementing of Pitcher, Hole size of Pitcher, percolation rate from the hole, etc. The 12 member Sad Bhavana, SHG got an option for their Livelihood, in lean season, member worked together for pitcher making and in peak season, members engaged in Agriculture activities. The Up gradation in status (Financial, Economical and Social) of SHG members reflect the potential of Tribal women and the direction, technical assistance, provided by Gramin Vikas Trust, Raipur.



Fig.1 SHG Members are engaged in cement layering of Pitcher.



Fig.2 SHG Members are engaged in material preparation for Pitcher



Fig.3 Miss Minakshi Bisen (GVT Staff) is supervising SHG Members about the technicalities.

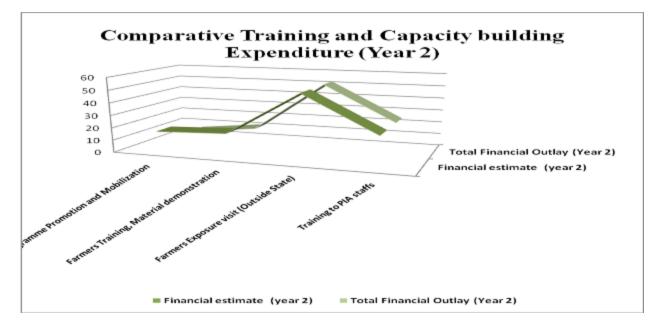
In WADI-II, Phase-I project, under Training, Capacity building Component, GVT has been covered the targeted 200 beneficiaries in 4 Different project Villages of Charama Block of Kanker District, Chhattisgarh. Under the sub-Head of Training, Capacity building Component, GVT (Raipur) disbursed the following amount accordingly as Budget sanctioned.

Training, Capacity building

(Rs. 000)

S.N.	Activities	Unit	Physical Estimate (year 2)	Financial estimate (year 2)	Total Financial Outlay (Year 2)	Percentage
1.	Programme Promotion and Mobilization	No.	8	16	6	37.50
2.	Farmers Training, Material demonstration	No.	6	18	12	66.67
3.	Farmers Exposure visit (Outside State)	No.	1	52	52	100
4.	Training to PIA staffs	No.	4	24	24	100
	Total		19	110	94	85.45

Graph showing comparative training and capacity building expenditure



Under **Training**, **Capacity building** component, GVT, Raipur had organized Video shows, Wall paintings, meetings to aware the WADI beneficiaries about the project. In these context video shows in all 4 villages of WADI has been organized to generate awareness and motivate the villagers.

In the show all technical aspects viz type of soil, planting, agricultural inputs, stacking, fencing, etc is explained in a movie "*Wadi Ho To Aisi*". Consequent to this some more movies for health awareness was shown viz safe drinking water, health awareness, etc. Also for making them aware about Income Generating Activity, some movies were shown to the villagers.

The shows were very successful and villagers have started responding positively for next phase of WADI. These video shows were helpful in clearing the mental blocks of villagers about WADI project. Our community organizers have described all the components of WADI very meticulously to the villagers. The appreciable point was that the women participation was considerably higher in comparison to the men participation.



Villagers watching video shows



Villagers watching Wadi shows

Wall Painting

Farmers were motivated along with the other activities through wall painting, pamphlet and posters. These tools are very effective and WADI beneficiates were getting inspiration with the essence of these slogans being painted on the walls.



Wall painting in WADI Village at Thanabodi



Wall painting in WADI Village at Nawdabri

Under **Training, Capacity building** component, GVT, Raipur had organized an activity, farmers training, Material Demonstration, at Krishi Vigyan Kendra (KVK), Kanker, Chhattisgarh. The KVK scientists were providing training to the farmers on new techniques of paddy cultivation, Vermi-compost Units, NADEP cow dung compost unit, new varieties of Red gram, Pigeon pea and other Oil seed crops and pulses. Along with that Farmers visited the plots of Banana, papaya, mango and learnt the methods of orchard making. Mr. Birbal sahu and their associates was demonstrated new farm Machineries like cono-weeder, seed cum ferti drill, Hand Harrow, cycle harrow etc. The new machineries can save the time and increase the productivity of land. Marginal farmers can also increase their produce by these new techniques. The subsistence WADI farmers had an exposure of best field practices.



Mr. Bali shares the technical aspects of crop management.



Farmers Training at Krishi Vigyan Kendra (KVK), Kanker, Chhattisgarh



Mr. Birbal Sahu along with KVK Staffs is dealing Technical aspects with Farmers.



Farmers are getting the technical skill to prepare NADEP compost unit



Mr. Birbal Sahu, SMS is showing a Vermi-Compost unit at KVK, kanker, Chhattisgarh



A Onion demonstration plot at KVK.



KVK staff provides training to farmers of Brinjal cultivation.



Farmers are about to know the utitlity of floriculture.



Pheromone trap to control insects and pests

Under **Training, Capacity building** component, an exposure visit outside the state in BAIF, Gujrat was organized under NABARD, WADI project.

The participants learnt about all technical and non technical aspects of WADI. After accomplishment of this exposure visit the participants are confident and well versed with the concept of the WADI and its sequential development. The participants gathered new ideas and information like maintenance and marketing of nursery, watershed structures, etc. The farmers also shared their learning and views of WADI with the other villagers of Charama Block after their visit.



A domestic Technology to drag the water from small pond to irrigate the field.



Get together of WADI beneficiaries of BAIF, Gujrat and GVT, Raipur.

Under Training, Capacity building component, 4 PIA Staff training had been conducted at Raigarh



A vermicompost unit at BAIF, Gujrat



A training on accounting practices at BAIF, Gujrat



A SHG member shares her experience about cattle management to our WADI beneficiaries



Training on Orchard amangement to our WADI beneficiaries.



SHG members share their experiences on WADI.



A training on Nursery management at BAIF, Gujrat



A women trains the farmers how to graft the mango plant.



Demonstration of Cashew Processing at BAIF, Gujrat.



Farmers are getting the idea how to Process Cashew.



SHG members are processing the cashew fruit.



A machine used for peeling off the outer layer of Cashew.



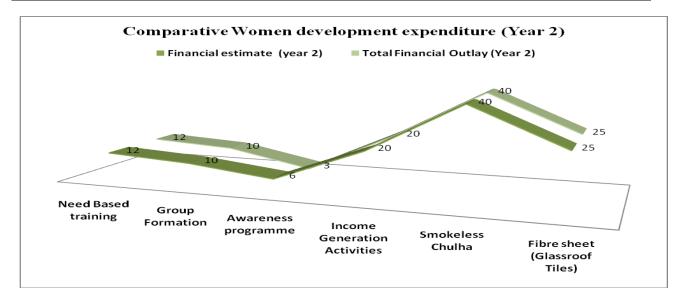
Packaging of Cashew by SHG members

Sahyog samiti (RSO), Raigarh, Chhattisgarh under NABARD, WADI project. The PIA staffs got the idea of orchard development, caring of plants, stacking, fencing, and watershed structures. The concept of intercropping in WADI was also taught to them. The benefits of deep ploughing, crop rotation, vermicompost, nursery management & drip irrigation concept were dealt by RSO officials.

Women Development

(Rs. 000)

S.N.	Activities	Unit	Physical Estimate (year 2)	Financial estimate (year 2)	Total Financial Outlay (Year 2)	Percentage
1.	Need Based training	No.	4	12	12	100
2.	Group Formation	No.	10	10	10	100
3.	Awareness programme	No.	4	6	3	50
4.	Income Generation Activities	No.	2	20	20	100
5.	Smokeless Chulha	No.	100	40	40	100
6.	Fibre sheet (Glassroof Tiles)	No.	100	25	25	100
	Total	1		113	110	97.34



Under **women development**, 4 need based training had been organized on Mushroom Cultivation, NTFP, Training on Tailoring. The objective of this training is to build the capacity of SHG through income generating activity. A training programme has been organized by GVT, Raipur on Mushroom cultivation. The Target group was very much interested in Mushroom cultivation because they have market for selling of produce and price of Mushrooms are quite high. So, it was basically, a Demend driven situation where SHG members voluntarily come forward. But due to lack of technical guidance, the spawns got spoiled and the members did not get the genuine remuneration.

Uncer **Women Development**, GVT, Raipur has to form 10 SHG Groups by the end of Financial year 2010-11 and target has been achieved.

Uncer **Women Development**, 2 SHGs from Hatkacharama and Thanabodi has been engaged in Income generating activities which were Piggery and tailoring respectively. Accordingly, we built the capacity of a SHG from thanabodi on Tailoring activity.

Under **women development**, 2 Awareness programme had been organized in 4 Villages through advertisement (Road shows), pamphlet distribution and WADI slogans. Farmers were motivated along with the other activities through Avertisement, pamphlet. These tools are very effective and WADI beneficiates were getting inspiration with the essence of these slogans being painted on the walls.

Under **women development, 125** beneficiaries got benefitted of smokeless chulha. The women of the viilages spent 70-80% of their working time in Kitchen and traditional chulhas were emitting lot of smoke and subsequently, decrease the calorific value of fuel

These villagers were given training for construction of Smokeless Chulhas. After training the beneficiaries were provided all the necessary material for the construction of smokeless Chulhas viz Pipe, Bricks, Iron Grate, Cement, Red oxide Primer & Paint, etc.

The basic aim of this activity was to contribute somewhere in the conservation of Forest. This is by reducing the consumption of fuel wood. Moreover this activity will contribute in keeping the health status of women intact. This activity will reduce the emission of smoke near the cooking place, which will help the women's to get rid of the breathing problem and lungs infection and eye infection. Furthermore, these smokeless Chulhas will help in improving the general ambience of the house. It is so because the traditional Chulhas emits lot of smoke which gets deposited on the wall everyday and turns it dark. Simultaneously the deposition of the smoke in the form of carbon is hazardous for health. It absorbs the light and leads to darkness inside the house even during the day time. Also a specific smell remains throughout with the use of traditional Chulhas, which can be rectified by the use of smokeless Chulha.

Smokeless Chulhas are also cost effective in comparison to the traditional Chulhas because complete combustion of fuel takes place in smokless Chulhas because of the increase in the calorific value of wood, cow dung cake and coal etc. This activity has also addressed the drudgery of women.



Smokeless Chullah



Smokeless Chullah under Construction

Number of Fiber Sheets installed: 125

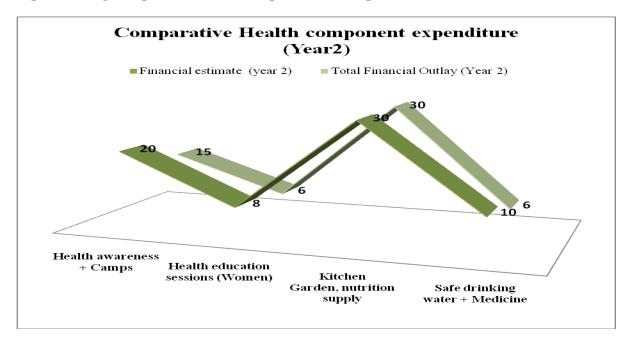
The traditional tribal house of Chhattisgarh is thoroughly deficient of sunlight inside the house. It is so because, these houses doesn't have ventilation or windows. Moreover the doors are also very small, because of which the house remains very dark even on the bright sunny day. Therefore, the villagers need to use the earthen lamp or Lantern even during the day time. The use of glass roof tiles will also be a cost effective affair as it will save the consumption of Kerosene and electricity during the day time.

After installation of glass roof tiles women can stay inside the house for longer duration which can help her to do maximum work within the house during the harsh summers, rainy season, and extreme winter time.

S.N.	Activities	Unit	Physical Estimate (year 2)	Financial estimate (year 2)	Total Financial Outlay (Year 2)	Percentage
1.	Health awareness + Camps	No.	4	20	15	75
2.	Health education sessions (Women)	No.	4	8	6	75
3.	Kitchen Garden, nutrition supply	No.	100	30	30	100
4.	Safe drinking water + Medicine	L.sum	5	10	6	60
	Total			68	57	83.82

Health Component

Graph showing comparative health empowerment expenditure



Health awareness

Under Health component of WADI project, 3 health awareness programmes has been conducted by GVT, Raipur with an ambition to creat awareness among the villagers and make them health conscious. The programmes were organized in Hatka-Charama, Thanabodi, and Nawdabri.

Kitchen Garden, Nutrition supply

Under Health component of WADI project, GVT, Raipur provided vegetable seeds to the beneficiaries to earn profit from vegetable cultivation or use vegetables in their diet for health point of view.

Safe Drinkin water

Under Health component of WADI project, 3 Safe drinking water programmes has been organized by GVT, Raipur in 3 different project villages: Thanabodi, Hatka-Charama, Sriguhan. The Objective of conducting safe drinking water programme is to aware the villagers about fatal diseases caused due to water contamination like Diarrhoea, Cholera, Jaundice, Hepatitis-B etc. The best way to cope up with these diseases is to take preventions especially in monsoon season. Use boil and filtered water for drinking purpose; avoid stagnation of water in villages causing Malaria, Dangue, etc.

Need Based Health Camp

A health Camp has been Organized by Gramin Vikas Trust, Raipur at Thanabodi Village of Narharpur block District Kanker, Chhattisgarh under health component of NABARD WADI-II. The camp was Constitute of a team of 4 Doctors and 9 Paramedical staffs. 95 villagers from villages Tikrapara, Thanabodi were benefited. There was an eye specialist in the camp; patients checked their eyes up during the camp. The Block medical Officer Narharpur supported and assisted us and made the Camp successful. GVT, Raipur Purchased the medicine under the prescription of Dr. S.K.Gupta, Block medical Officer posted over there. The Camp targeted Ladies, Children, Old men and women because these sections need more attention on Health Point of View. So, we have to organize more health camp in these tribal areas so we cannot lose lives of innocents and upgrade the ranking in HDI.

Health Camp

A Health Camp was organized under NABARD Wadi-II project at village Nawdabri, Narharpur, Kanker. The total number of beneficiaries from village Nawdabri was 140. Dr. S.K.Gupta, Block Medical Officer, Narharpur, Dr. P.K.Singh, Asst. Medical officer, Narharpur have attended and treated villagers of our project area. In this health camp participation of women was given special attention.



Pictures depicting Health Camp at village Navdabri, Charama

Chapter - III

Project – Sustainable Agri-based Livelihood Enhancement of Poor Tribal Community (CInI) Funded By – NAVAJ BAI RATAN TATA TRUST (NRTT)



INDEX

SL.NO.	PARTICULARS
1	Land and Water Resource Development
2	Promotion of Improved Agricultural Practices
3	Non Timber Forest Produce Promotion
4	Training and Technical Support
5	Community Awareness and Skill Development Trainings
6	Advocacy and Networking
	Annexure
Annex-I	Details of SHG
Annex-II	Details of Government Contribution

Sustainable Agri-based Livelihood Enhancement of Poor Tribal Community project being funded by Navajbai Ratan Tata Trust (NRTT). The project is being implemented by Gramin Vikas Trust, Raipur. The total duration of the project is two years from March 2010 to February 2013.

AGENCY	FINANCIAL (Rs)			
	TARGET	ACHIEVEMENT		
NRTT	814056	423288		
NABARD	2111340	1868642		
RiUP	0	0		
GVT	444	444		
Government	5387520	8023959		
Community	898480	232297		
TOTAL	9211840	10548630		

1. Land and Water Resource Development

For land and Water Resource Development the given target was Rs. **92,11,840** and with respect of this amount of Rs. **1,05,48,630** was achieved.

1.1 Soil and Water Conservation on Wasteland

Acreage Covered: 393 acres

Under NABARD WADI Project Cattle Protection Trench (CPT) has been done to protect the horticultural plantations as well as to conserve soil and Water on Wasteland.

1.2 Soil and Water Conservation with Agro Forestry

Activity has been planned for the financial year 2011-12.

1.3 Land Leveling

Acreage Covered: 3209 acres

With technical assistance and support from the employees of Gramin Vikas Trust, Land leveling under MGNREGA through government agency was implemented in the project villages.

1.4 Construction of Rain Water Harvesting Structures

Number of Structures: 15

Rain Water Harvesting Structures (Dabri) with dimension of 10 mX10 mX2m has been constructed.



Dabri at Geetpahar

1.5 Construction of Dug out Ponds

Number of Ponds: 2

With technical assistance and support from the employees of Gramin Vikas Trust, Dug out Pond under MGNREGA through government agency was constructed in the project villages.

1.6 Construction of Check Dams

Activity has not been planned during the financial year 2010-11

1.7 Desilting of Existing Water Harvesting Structures

Number of Desilted Ponds: 3

Desilting of Existing water Harvesting Structures has been done at village Geetpahar, Dumarpani and Badatola.



Desilting of Existing Water Harvesting Structure (Pond) at village Bhanpuri

1.8 Establishment of Small Lift Irrigation Schemes

Activity has not been planned during the financial Year 2010-11

1.9 Construction of Ring Wells

Number of Ring Wells: 10

Acreage Covered: 50 acres

Each ring well per 5 acre of WADI was planned and constructed.

In 50 acres 10 ring wells has been constructed. All wells are having dimension of 2 Meter Diameter and 35 Feet Depth. The area where NABARD Wadi Project has been implemented is facing water scarcity problem and which rose need of construction of Ring well.

AGENCY	FINANCIAL (Rs)			
	TARGET	ACHIEVEMENT		
NRTT	638000	430183		
NABARD	3176070	4789917		
RiUP	620000	130474		
GVT	0	0		
Government	36000	0		
Community	1423120	1615400		
TOTAL	5893190	6965974		

2. Promotion of Improved Agricultural Practices

For Promotion of Improved Agricultural Practices the given target was **Rs. 58,93,190** and with respect of this amount of **Rs. 69,65,974** was achieved.

2.1Promotion of Vegetable Cultivation

Seeds of Vegetable (Cabbage and Cauliflower) has been distributed among the tribal farmers of Charama, Kanker, C.G.

Number of Participants: 600



Cabbage Plot at Village Hatkacharama



Tomato Plot at Village Hatkacharama



Long gourd Plot at Village Hatkacharama

2.2 Promotion of Improved Paddy Cultivation

Best Bet Project is implemented in **Charama** and **Narharpur** block of **Kanker** district since **01-01-2010.** As per the guidelines of the project we have a provision for **4000 farmers** to whom Ashoka 200F cultivar of Upland Paddy Seed will be distributed with the amount of 2 kg per farmer free of cost during this year. But **Dr. J. P. Yadvendra** during his visit to Raipur, (CG) in May 2010 had suggested selecting **3500** farmers. Later on due to unavailability of sufficient seeds Dr. J. P. Yadvendra again suggested covering only **945** farmers in this year. Thus we have distributed **1890 kg** of **Ashoka** seed at the rate of 2 kg per farmers to **945** farmers on 26th to **27th June 2010**. The distributed seed has been sown in the beneficiaries' field by the farmers.

However from the testing point of view of this cultivar, we have done MoU with IGAU, Raipur, (CG). Testing fees of **Rs. 1,90,000** /- has been given to university. Regular field visit and monitoring of the project area where the trials are going on is done by the concerned specialist.

Ashoka 200-F (Paddy Seed)

At the time of field inspection on **22/09/10** in **Naudabri** in **Charama** block it was found that the response of farmers are worth appreciable also they are asking for more paddy seeds though there are some hindrances from which some problems have occurred like because of heavy rain fall some plants have been died, some farmers who did not take a good care of their field not eradicated the weeds which affected negatively. There s a problem of Hispa pest in the crop. The shown field is of a farmer named **Mr. Ishwar Lal Netam.**



In RiUP Best Bet project distribution of **Ashoka 200 F** cultivar i.e. Upland Paddy have been done in Charana and Narharpur block. The total number of beneficiaries were **9000** farmers of Charama and Kanker. The seed distribution of **Ashoka 200F** was done with **1000** villagers.

The performance evaluation is under process. Consequent to this in the month of December 2010 The procedure of signing the MoU under Public Private Partnership Programme with Indira Gandhi Agricultural University (IGAU), Raipur (CG) for testing trials of five cultivars i.e. **BVD 109** (Ashoka 200 F), BVD 110, BVD 111, BVD 203 and Birsa Vikas Dhan-1 were planted in different Agro-Climatic Zones of Chhattisgarh already took place.

Visit of Dr. J. P. Yadvendra

On **13 December 2010** a visit have been taken place of Dr. J. P. Yadvendra, Crop Consultant, GVT, Jaipur, (Raj.).

This visit was primarily focusing on the submission of reports of testing trials. For this Dr. J. P. Yadvendra met Vice Chancellors of IGAU, Raipur (CG) and Dr. Motiramani HOD, Plant Breeding, College of Agriculture, Raipur (CG)

2.3 Establishment of Seed bank in the Project Villages

Seed bank has not been established during the financial year 2010-11. It has been planned to establish in the financial year 2011-12.

2.4 Promotion of SRI Paddy Cultivation

Under CInI project SRI Paddy Cultivation techniques were promoted during October to December 2010.

The objective of this was to popularize SRI in tribal villages of Charama Block, Kanker, C.G. and to determine the returns to variable costs of Production

The basic purpose of the study is to assess the status of Conservation agricultural practices (mainly SRI - System of Rice Intensification) and its ground situation, analyzing the potential opportunities to popularize the same towards effective utilization of water resource, augmenting yield/income for the livelihood upliftment of farming community.

In October sowing has been done and in the month of December 2010 harvesting has been done.

Implementing Area

Sl.No.	Village	Area of Village	No of House Holds	Total Population(Perso ns)	S C Population	ST Population	Total Irrigated Area	Un irrigated Area	Area not Available for Cultivation
1	Kilepar	557	231	1078	12	678	52	309	40
2	Jepra	943	399	1783	165	841	133	281	205
3	Gitpahar	1006	445	2110	44	1136	4	618	113
4	Thanabodi	513	158	714	7	447	0	325	1

According to (Census 2001)

Methodology

Field visits were made to the paddy area, held on-site interaction with farmers along with field observations. Discussion with officials of Department of Agriculture (DoA), interaction with various officials of KVK.

Data Collection

Data was collected by two methods which are mentioning below -

- A) Primary source
- B) Secondary Sources

A) Primary Resources

Well structured questionnaire was used for the survey. Questionnaire includes quantitative question.

B) Secondary Sources

Facts and documents are collected from govt. websites and reports from Department of Agriculture, Kanker as well as from Krishi Vigyan Kendra, Kanker

Sl. No.	Village	Number of Beneficiaries
1	Kilepar	42
2	Jepra	43
3	Geetpahar	57
4	Thanabodi	4
	Total	146

Sample Size

SRI farmer practices vs. Conventional paddy cultivation - A comparison

Input	Conventional Paddy	SRI technique – recommended	SRI – Farmer practice
Seed	20-30 kg per acre	4 kg per acre	4 kg per acre
Spacing	Closer spacing	Square Plantation	Accurate spacing not
	15X10, 20X10	22.5 X 22.5 cm	maintained due to semi
	OR Direct Sowing		skilled labor
Transplanting	Seedlings about 30	8-14 days old	$15-20^{\text{th}}$ day
	days old		10 20° aug
No. of seedlings	2-3 seedlings	Only one seedling	1-2 seedlings
per hill			
Fertilizers	Application of	Preference given to	Mostly chemical fertilizers
	chemical fertilizers,	organic fertilization,	are used. One time
	insecticides and	insecticides and	application of FYM during
	herbicides	herbicides	last Ploughing
Plant protection	Application of	Bio pesticides as per	Spray of Chemical
	insecticides and	the requirement	pesticides because area is
	herbicides,		highly affected by stem
	2-3 times spray		borer and leaf folder
Weeding	Manual weeding,	Non-chemical	Manual weeding (2-3
	herbicide application	means of weed	times). Market availability
		control by cono-	of Cono weeder is limited.
		weeder (2-3 times)	



2.5 Promotion of Oilseeds and Pulses

Promotion of oilseeds and pulses has been done on pilot basis in **21** villages under WADI of Charama block, Kanker Under CInI project, funded by NRTT.

Number of Participants: 150 farmers from 21 villages

The objective was to demonstrate the improved methods of oilseeds and pulses cultivation.

Inputs Distributed under Oilseeds and Pulses promotion:

Sl. No.	Particulars	Quantity
1	Mustard Seeds	1 Kg per farmer
2	Urd seeds	3 Kg per farmer
3	Moong seeds	2 Kg per farmer





Plots of Urd & Moong at Village Ranidongri

2.6 Promotion of Summer Paddy

Promotion of summer paddy has been done on pilot basis in 13 villages of Charama block, kanker Under CInI project, funded by NRTT.

Number of Participants: 200 farmers from 13 villages Pandripani, Dumarpani, Kusumpani, Hatkacharama, Ranidongri, Tikrapara, Kurrubhat, Badatola, Kilepar, Jepra, Geetpahar, Halba, Bhanpuri

The objective was to demonstrate the improved methods of Paddy cultivation (SRI and Transplanting)

S.No.	Particulars	Quantity
1	Seeds (Variety- MTU1010)	4 Kg per acre
2	Azotobacter and PSB	5 packets per acre
3	SSP	25 kg per acre
4	МОР	25 kg per acre

Inputs Distributed under Summer Paddy promotion:



Paddy Field at Village Ranidongri

2.7 Vermi compost Promotion

Activity has been planned during the financial year 2011-12.

2.8 Horticulture Plantation and Maintenance

Horticulture Plantation under NABARD WADI Project has been successfully completed during 2010-11.

Acreage of plantation: 600 acres

Horticultural species: Mango, Cashew & Lemon

Plants per Acre: 53 (Mango-25, Cashew-21, Lemon-7)



2.9 Contingencies for Development Interventions

Need for the use of contingencies for the development interventions has not been experienced by the Organization for the financial year 2010-11.

2.10 Transportation Cost of seed from source to Farmer Location

Transportation cost of seed from the source to farmer location has been booked under RiUP project.

2.11 Promotion of Poultry

Number of Units: 2

Establishment of Poultry unit by an interested SHG has been planned. Details of SHG are furnished as below:

Name of SHG	Village	Bank	A/C Number
Hariyali Mahila SHG	Tikrapara	Chhattisgarh Gramin	77000141304
		Bank, Charama,	
		Kanker, C.G	

Poultry Shade has been constructed at Village Tikrapara, Charama, C.G Planning and Budgeting for Construction of Poultry Shade has been done, procurement of poultry feed and purchasing of Chicks is under Process.

Under CInI project promotion of poultry has been done in Village Jepra of Charama block, Kanker. Work is under process.

Details of SHG interested in establishment of Poultry unit are:

Name of SHG	Members	Village	Bank			A/C Number
Shradha Mahila	10	1	Chhattisgarh Charama, Kan	Gramin ker, C.G	Bank,	77000628863



Construction of Poultry Unit at Village Tikrapara



SHG Members engaged in construction of Poultry Shade

3. Non Timber Forest Produce Promotion

AGENCY	FI	NANCIAL (Rs)
	TARGET	ACHIEVEMENT
NRTT	50000	47990
NABARD	0	0
RiUP	0	0
GVT	0	0
Government	0	0
Community	0	0
TOTAL	50000	47990

3.1 Lac Promotion

Under CInI project Promotion of Lac has been done at 3 villages, details are as follows:

Villages	Beneficiaries
Geetpahar	5
Hatkacharama	5
Palewa	4

Inputs distributed per beneficiaries under Lac Promotion are:

Brood Lac (Kusumi)	5 Kg per beneficiary
60 mesh nylon net	50 number per beneficiary
Dawli	1 per beneficiary

3.2 Community Exposure towards Lac Cultivation

Number of Participants: 69 Farmers from the villages Kilepar, Geetpahar, Bhanpuri, Kusumpani, Badatola & Hatkacharama were taken to Lac production Center, Tirkadand, Charama for exposure and visit.

Lac Cultivation:

Mr. P. Mandavi addressed the farmers about production and processing of lac. Following are the points of training:

- Different varieties of lac (Kusum, Coloured & Pasua) and plants on which lac cultivation can be done (Semilata, Palas, Khair, Ber)
- Plantation lay out and fertilizers (3000 plants per acre at a distance of 1 X 1 m with supplement of 500g FYM and 20-25g DAP per plant)
- Time of harvest (two times a year November & May-June)
- Production per plant and per Acre (Average 8-10 Kg/plant, Maximum 15 Kg/plant, 8-10q/acre)
- Production process (30-40g lac seed per plant, Site should be dry & at interval of one year for maximum production, 8-10 years plant can be used for lac cultivation)
- Lac Processing (Scraping and Washing through machine)



Farmers at Lac Processing Center, Tirkadand, Charama



Farmers paying attention towards training on Lac Cultivation



Farmers understanding the function of lac processing machine



Farmers visit to the field area of lac on Kusum and palas plants

3.3 Community Training on NTFP

Number of Trainings: 8

Beneficiaries: 200 farmers from 8 villages

Training on Lac Cultivation given by Mr. P. Mandavi from Tirkadand

- Different varieties of lac (Kusum, Coloured & Pasua) and plants on which lac cultivation can be done (Semilata, Palas, Khair, Ber)
- Plantation lay out and fertilizers (3000 plants per acre at a distance of 1 X 1 m with supplement of 500g FYM and 20-25g DAP per plant)
- Time of harvest (two times a year November & May-June)
- Production per plant and per Acre (Average 8-10 Kg/plant, Maximum 15 Kg/plant, 8-10q/acre)
- Production process (30-40g lac seed per plant, Site should be dry & at interval of one year for maximum production, 8-10 years plant can be used for lac cultivation)
- Plant protection by use of chemicals (pesticides and fungicides) as per the requirement

AGENCY	FI	FINANCIAL (Rs)			
	TARGET	ACHIEVEMENT			
NRTT	102496	0			
NABARD					
RiUP					
GVT					
Government					
Community					
TOTAL	102496	0			

4. Training and Technical Support

4.1 Village level PRA for Micro planning

Micro planning for 20 villages has been prepared. Costs incurred in conducting PRA and reporting of Micro plan has not been booked during the financial year 2010-11.

4.2 Quarterly Staff Meetings

Regular meetings on monthly & quarterly basis have been conducted to review the work progress at Regional Office, Raipur.

4.3 Staff Exposure and Training on SHG Promotion

Activity has been planned in the financial year 2011-12.

4.4 Staff Training on NTFP Promotion

Activity has been planned in the financial year 2011-12.

4.5 Staff Training on Poultry

Activity has been planned in the financial year 2011-12.

4.6 Staff Training on Agro Forestry

Activity has been planned in the financial year 2011-12.

4.7 Staff Exposure cum Training on Soil and Water Conservation

Activity has been planned in the financial year 2011-12.

AGENCY	FINANCIAL (Rs)			
	TARGET	ACHIEVEMENT		
NRTT	122700	105115		
NABARD	974000	614767		
RiUP	18000	18000		
GVT				
Government				
Community				
TOTAL	1114700	737882		

5. Community Awareness and Skill Development Trainings

5.1 Community Mobilization meetings

Number of Meetings: 14

Awareness Program

Awareness program was conducted under training and capacity building of NABARD Wadi. In these context video shows in all 21 villages of Wadi has been organized to generate awareness and motivate the villagers.

In the show all technical aspects viz type of soil, planting, agricultural inputs, stacking, fencing, etc is explained in a movie "*Wadi Ho To Aisi*". Consequent to this some more movies for health awareness was shown viz safe drinking water, health awareness,etc. Also for making them aware about Income Generating Activity, some movies were shown to the villagers.

The shows were very successful and villagers have started responding positively for next phase of Wadi. These video shows were helpful in clearing the mental blocks of villagers about wadi project. Our community organizers have described all the components of wadi very meticulously to the villagers. The appreciable point was that the women participation was considerably higher in comparison to the men participation.



Villagers watching video shows



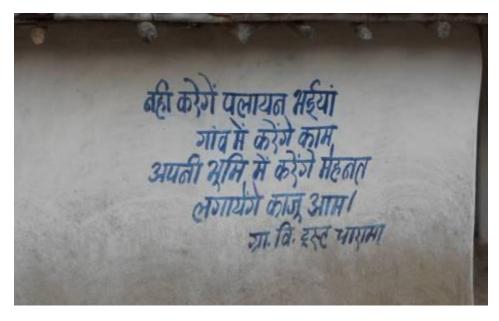
Villagers watching Wadi shows

Wall Painting

Farmers are motivated along with the other activities through wall painting, pamphlet and posters. These tools are very effective and wadi beneficiates are getting inspiration with the essence of these slogans being painted on the walls.



Wall painting in Wadi Village at Charama



Wall painting in Wadi Village at Charama

5.2 Farmers Training on WADI Cultivation

Number of Trainings: 14

Farmers training on WADI before care and after care of plantation were conducted at project villages.

- **Before Care**: Layout of land, Pit digging, Pit filling and Plantation of Mango, Cashew, Lemon
- After Care: Management practices (Irrigation, Stacking, Plant protection, Fencing, Basin preparation, weeding)

5.3 Farmers Exposure on WADI

WADI Exposure visit at Gujarat

An exposure visit outside the state to Vansada, Gujarat under NABARD Wadi project was conducted. The activity aimed to sensitize the wadi beneficiaries mainly on plantation of fruit trees (Orchard development), nursery development, women empowerment and entrepreneurship development, processing of fruits (Mango, Cashew), vermicompost, different types of watershed structures (pond, check dams, stop dams, percolation tanks, etc.)

The villagers learnt many things when they practically saw the phenomenon themselves. There were diversified farming activities at BAIF Research Foundation, Vansada, Gujarat. Farmers told that these farm and non form activities can mitigate the seasonal risks and uncertainties of the wadi farmers. Moreover allied activities also opened the new option of livelihood.

Also it was told that the idea of vermicompost unit establishment enabled the farmers to be less dependent on chemical fertilizers and also made the soil healthy and fertile (Sustainable Livelihood Management Approach). This dual motive idea makes the environment safe and clean because of their degree of degradation and non-toxic residue in the soil.

During the visit it was seen that the water harvesting structure is surfaced by polythene sheets in order to check the percolation losses of water only, not the evaporation loss. This innovative idea increases the water use efficiency and makes the water available for longer period of time.

There was a session on accounting practices for running of successful SHG and their system included record maintenance, repayment mode, charges on defaulters, weekly meeting, internal tendering, funding of processing unit (mango, cashew), nursery, etc.

The Wadi farmers also visited the processing unit at BAIF Research Foundation, Vansada, Gujarat run by SHG members where each member of SHG has specific and key role.



Visit to Processing unit of Cashew at Vansda





Women processing Cashew at Vansada,(Guj.)

Exposure Visit to Rajasthan

An exposure visit outside the state in Banswada, Rajasthan was organized under NABARD, Wadi project. Duration of exposure visit was seven days from 22-12-10 to 29-12-10.

During these seven days the participants learnt about all technical and non technical aspects of wadi. After accomplishment of this exposure visit the participants are confident and well versed with the concept of the Wadi and its sequential development.

The participants gathered new ideas and information like maintenance and marketing of nursery, watershed structures, etc. The farmers also shared their learning and views of wadi with the other villagers of Charama Block after their visit.



Farmers visit to village Kushalgadh, Banswada, Rajasthan.



Farmers Exposure Visit at PRADAN, Nagri, Dhamtari, (CG)

Five exposure visits to Nagri, Dhamtari in Pradan NGO was organized under NABARD WADI project.

The wadi beneficiaries got the idea of orchard development, caring of plants, stacking, fencing, and watershed structures. The concept of intercropping in Wadi was also taught to them. The benefits of deep ploughing, crop rotation, vermicompost, nursery management & drip irrigation concept were dealt by Pradan officials. The exposure visit of Wadi beneficiaries was very fruitful.



PRADAN officer demonstrating the technicalities of Mango Plant during exposure visit



WADI Beneficiaries during exposure and Visit to PRADAN

5.4 Farmers Exposure Visits to Other Successful Interventions

Number of Exposures: 5

Venue: Krishi Vigyan Kendra, Kanker, C.G.

The KVK scientists were providing training to the farmers on new techniques of paddy cultivation, Vermi-compost Units, NADEP cow dung compost unit, new varieties of Red gram, Pigeon pea and other Oil seed crops and pulses. Along with that Farmers visited the plots of Banana, papaya, mango and learnt the methods of orchard making. Mr. Birbal sahu and their associates was demonstrated new farm Machineries like cono-weeder, seed cum ferti drill, Hand Harrow, cycle harrow etc.



Farmers paying attention towards the trainer at KVK, Kanker



Demonstration of 4 pit Vermi compost Unit at KVK, Kanker



Demonstration of Ferti cum Seed drill at KVK, Kanker



Demonstration of Cycle Harrower at KVK, Kanker

5.5 Exposure Visit for Improved Paddy Number of Exposures and Visits: 36

An exposure visit and field day program has been done for Farmers Upland Rice School (FURS). The total number of beneficiaries covered was 8000. In which 4000 villagers have been covered under exposure and rest 4000 were covered under field day program.

The prime concern for doing all these was to target more beneficiaries and to cover maximum land of Charama and Narharpur blocks for trials. As these areas comes under Rainfed area and land of these blocks is not having fertility.

The beneficiaries were from villages where the trials of Ashoka 200 F were done. During the day Ashoka 200 F has been explained to villagers. From that the villagers have got motivated and started responding enthusiastically for the trials.

Under Field Day Program we gave presentation about Ashoka 200 F cultivar. For this we were organized the meeting in their villages and described the all features and crop cultivation practices by our technical person.

Summary of the Project details are as follows:

Farmers Upland Rice School (FURS)								
Sr. No.	Particulars	Remarks						
1.	Seed distribution of Ashoka 200 F cultivar	1000 No. of beneficiaries covered						
2.	Exposure Visit	4000 No. of farmers covered						
3.	Field Day	4000 No. of farmers covered						
4.	Seed distribution of Ashoka 200 F cultivar	In May – June and 3000 No. of farmers will be benefit						



Farmers under exposure visit



Farmers under exposure visit



Farmers visit to the field

5.6 Training on Vegetables

Number of Trainings: 20

Number of Participants: 500 farmers from 20 Villages Pandripani, Telguda, Araud, Kotela, Dumarpani, Lilwapahar, Naudabri, Thanabodi, Bhanpuri, Tikrapara have been availed benefits from the training.

The objective was to make the farmers aware farmers about improved practices involved in vegetable cultivation

Farmers were given training on vegetable Cultivation. They were also aware about the practices and procedure involved in vegetable cultivation. Training was given on cultivation of Tomato and Ladies finger.

Tomato

Nursery Development For 1 ha field 250 m^2 nursery is enough. Treatment of seeds with Thiram or Bavistin 2.5g per Kg of seeds, sowing of seeds at depth of 1 cm with distance of 10 cm, cover the seeds with manure till sprouting of seeds, irrigate as per the requirement.

Transplanting to main field After 28-30 days of sowing plants are ready for the transplantation, depth should be 4-5 cm at a distance of 60X45 cm (Vertical type) and 60X60 cm (Horizontal type).

Stacking In case of vertical type with bamboo or wooden stick

Harvest After 50-60 days of transplanting flowering comes and after 60-90 days fruit maturity, weekly harvesting of fruits or 10-12 times plucking results in 400-500 quintal of fruits per hectare

Ladies finger

Time of Sowing Kharif – June-July, Summer – January-15 March

Spacing Kharif – 45X30 cm, summer – 30X20 cm

Fertilizers NPK - 100:60:60 per hectare

Irrigation In summer 4-5 irrigation as per the field condition

Harvest 6-7 days after opening of flower (varies depending on varieties), If harvest is not done on time it has adverse effect on further development of plant and fruits

5.7 Training on Improved Paddy Cultivation Practices

Number of Trainings: 25

Number of Participants: 625 farmers from 25 Villages

The objective was to aware farmers about transplanting and line sowing methods of Paddy cultivation.

Farmers were given training on Transplanting and Line Sowing method of Paddy Cultivation. They were also aware about the practices and procedure involved in improved method of Paddy Cultivation.

- Treatment of Seeds with Fungicides (Thiram/Bavistin) 2g/Kg of Seeds & for bacterial 0.02% Streptocyclin
- Seed bed preparation: Raised bed method
- Transplant seedlings before 25 days after sowing of seeds to get improved yield
- Integrated nutrient management: Use of Bio-fertilizers (Azotobacter and PSB) to improve soil health and productivity, reduced use of Chemical fertilizers result in minimizing the cost of cultivation. As per infestation in paddy field but Stem borer and leaf folder is prominent in the area, following are the steps to reduce the infestation:
- Deep summer ploughing of field. Removal of tip of leaves before transplanting to remove eggs of the pest
- Use of Light trap, spray of Monocrotophos 750ml or Chlorpyriphos 1litre in 500-600 litres of water

• Field should be flooded with water 2-5 cm till tillering stage and thereafter 10-15 cm till grain formation

5.8 Training of SRI Paddy Promotion

Number of Trainings: 6

Number of Participants: 150 farmers from 6 Villages Dumarpani, Bhanpuri, Halba, Thanabodi, Ranidongri, Naudabri

The objective was to make the farmers aware about improved technologies used in paddy cultivation and, to minimize the inputs and costs involved as compared to traditional method of Paddy cultivation

Farmers were given training on SRI method of Paddy Cultivation. They were also aware about the Principle and procedures involved in SRI method of Paddy Cultivation.

Principles of SRI method of Paddy Cultivation -

- 1. Transplanting of Younger Seedlings at two leaf Stage
- 2. Transplanting of single seedling per hill
- 3. Square method of planting e.g. 25X25 cm
- 4. Field should be moist not flooded with water
- 5. Use of Conoweeder for weeding at interval of 15 days (minimum 2-3 times)
- 6. Maximum use of Bio fertilizers and Bio Pesticides
- Seed Treatment: Checking healthy seeds by using brine water test-

In this method Salt is mixed with water in a bucket, concentration of the water should be as much that an egg or potato can float in the water. After that mix the seeds into bucket filled with water and remove the floating seeds on the surface of water. Drain the water from bucket and spread the seeds under shade for drying. Treat the Seeds with Fungicides (Thiram/Bavistin) 2g/Kg of Seeds & for bacterial 0.02% Streptocyclin

- Seed bed preparation: Raised bed method
- Transplanting: Transplant seedlings at 2 leaf stage (12 days after sowing)
- Fertilizers: Integrated nutrient management Use of Bio-fertilizers (Azotobacter and PSB) to improve soil health and productivity, reduced use of Chemical fertilizers result in minimizing the cost of cultivation
- Plant protection: As per infestation in paddy field but Stem borer and leaf folder is prominent in the area, following are the IPM procedures to reduce the infestation:

- Deep summer ploughing of field
- Remove the tip of leaves before transplanting to remove eggs of the pest
- Use of Light trap
- Spray of Monocrotophos 750ml or Chlorpyriphos 11itre in 500-600 litres of water.
- Bio-Pesticide preparation (COW URINE CULTURE) Cow urine culture mainly contains cow urine, dung and jaggery in 3:1:2-5 ratios. Take an earthen pot and fill it with cow urine, dung and jaggery in 3:1:2-5 ratios and close the mouth of the pot and leave it for 10 days and then after it can be used as pesticide.
- Water Management: Field should not be flooded with water, field should be moist. Alternate drying and wetting (ADW) should be practiced for the growth of roots and profuse tillers

5.9 Training of Improved practices on Pulses, Maize and Oilseeds

Number of Trainings: 19

Number of Participants: 500 farmers from 19 Villages of Charama Block, Kanker.

The objective was to make farmers aware about improved techniques involved in Pulses and Oilseeds Cultivation

Farmers were given training on Improved Practices Involved in Pulses and Oilseeds Cultivation. Training was given on Gram and Sunflower Cultivation.

Gram

- Seeds: For country seeds requirement is 30-32 kg per acre and for Kabuli seeds 35-40 kg per acre
- Spacing and time of sowing: 30X10 cm & 15 Oct to 1 Nov
- Fertilizers required: 2.5 tonnes of Compost and 40Kg DAP at the time of Sowing
- Irrigation: Rainfed condition

Overall focus was on to aware farmers about the importance of Crop rotation to improve the soil health and productivity for food security

5.10 SHG Training on Accounting Practices

Under CInI project training on accounting practices was conducted for the SHG at Village Jepra, Thanabodi, Dumarpani, Telguda, Kilepar, Geetpahar, Kotela and Ranidongri, Charama, Kanker C.G

Number of Trainings - 8

The objective was to aware the SHG on Book keeping practices

Issues discussed in training

Mr. Raj Kumar Shrivastava, Asst. Manager from SBI, Charama has given training on accounting practices to SHG.

- 1. Grading of SHG after 6 months from the date of formation of SHG group
- 2. Application for loan after 2^{nd} grading of SHG
- 3. Maintenance of records (Meeting, loan & accounting)
- 4. Insurance of SHG members



SHG members getting training on Accounting Practices



SHG training on Accounting Practices at Dumarpani



SHG members paying attention towards Instructor on Accounting Practices

5.11 Exposure of SHG Members

Exposure of SHG Members was conducted Under CInI project funded by NRTT.

The objective was to aware SHG members about different enterprises to be carried out at local level

Details of exposure of SHG members:

Name of SHG	Village	Number of members	Exposure towards	Venue	Date of Exposure
Hariyali Mahila SHG	Tikrapara	10	Poultry	Sinha Poultry farm, Auri, Charama	22.10.10
Shradha SHG	Jepra	10	Poultry	Jaisakarra, Charama	7.12.10
Pragya Mahila SHG	Kusumpani	11	Incense Stick Production	Dheewar Incense Stick production unit, Kilepar, Charama	1.12.10
Chetna SHG	Telguda	11	Vermicompo st Production	Horticulture Nursery, Nathiyanawagaon, Kanker	2.12.10
Mahila Vikas SHG	Badatola	12	NTFP	NTFP Processing and Training Center,	16.1.11

				Dugli	
Pragati Mahila, Prerna Mahila, Ekta Mahila, Jai Guru Dev SHG	Halba, Bhanpuri, Thanabodi, Dumarpani	18	Vermicompo st Production	Horticulture Nursery, Nathiyanawagaon, Kanker	22.1.11
Pragati Mahila, Sarthak Mahila, SHG	Halba	10	Washing Powder Production	Laxmi SHG, Kanapod, Charama, Kanker	21.1.11
Mahila Aajivika & Ujjwal mahila	Kotela	12	Poultry	Dilip Poultry Farm, Jaisakarra, Charama	26.2.11
Mahamaya mahila	Pandripani	12	Silk/Kosa	Resham Kendra, Makri, Kanker	10.2.11
Gayatri mahila	Kilepar	11	Nursery	Nursery, Department of Forest, Charama	28.2.11



'Pragya Mahila SHG' taking training on Incense Stick production



'Pragya Mahila SHG' making Incense stick during exposure at Kilepar, Charama, Kanker



'Hariyali Mahila SHG' along with other farmers taking Training on establishment of Poultry



'Hariyali Mahila SHG' visit at Sinha Poultry Farm, Auri, Charama



'Chetna SHG' exposure visit towards Vermicompost production



Demonstration of Vermicompost production to 'Chetna SHG'



Shradha SHG, exposure towards Poultry



SHG members under training at Dugli



SHG members under training on aonla processing



SHG members under training on NTFP Processing



Exposure visit of SHG members towards Vermicompost at Nathiyanawagaon



SHG members during exposure visit on Washing Powder at Kanapod



SHG members under training on Washing powder at Kanapod

5.12 Exposure visit to Watersheds Activities

Number of Exposure: 1 Number of Participants: 25

Farmers from the project villages were taken to Government Watershed area of Raipur district.

5.13 Exposure Visit to SRI Paddy Interventions

Number of Exposure: 1

Number of Participants: 25 from 4 Villages Kilepar, Jepra, Geetpahar and Thanabodi

Date & Venue: 26.9.2010 at Chawadi Farm House, Charama

Objectives:

- To popularize SRI method of Paddy Cultivation in tribal area of Charama block
- To make the farmers technically aware of SRI practices
- To show the impact of SRI as comparative to the traditional method of Paddy Cultivation

SRI method of Paddy Cultivation:

A workshop was organized, in which SRI expert Mr. Kuntal Mukherjee from PRADAN, Mr. Basant Yadav, Director Chhattisgarh Grameen Bank and other staffs from Janpad Panchayat were present there.

Farmers were addressed by the SRI expert Mr. Kuntal Mukherjee. Farmers were aware about the principles involved in SRI method of Paddy Cultivation.

- Transplanting of Younger Seedlings at two leaf Stage, within 15 days of sowing of seeds
- Transplanting of single seedling
- Square method of planting e.g. 25X25 cm
- Field should be moist not flooded with water
- Use of Conoweeder for weeding at interval of 15 days
- Maximum use of Bio fertilizers and Bio Pesticides



Workshop at Chawadi Farm House, Charama



Farmers paying attention at Workshop



Farmers listning to the speaker



SRI Field Visit of the farmers

5.14 Exposure Visit to Agriculture Market

Number of Exposure: 2

Number of Participants: 50 from Villages Dumarpani, Kilepar, Geetpahar, Bhanpuri, Pandripani, Halba, Telguda & Tikrapara, Kurrubhat, Palewa

Under CInI project Exposure visit to Agriculture Market was conducted on 4 Oct.2010 & 21 Dec 2010. Farmers from villages were taken to Agriculture Mandi, Charama for Agriculture Market exposure.

Objectives:

- To link farmers directly with Mandi
- To aware farmers about rules, regulations & procedures of Mandi

Mr. Pradeep Shukla, Secretary, Agriculture Mandi, Charama, Kanker addressed the farmers on the following Issues:

- Operations of Mandi and expected benefits for the farmers
- Collective marketing for small and marginal farmers
- Minimum Support Price
- Mandi Taxes and Charges for obtaining License
- Storage of Food Grains
- Limits for Purchasing and Selling by the farmers
- Computerized Weighing process
- Free of cost Soil testing by Mandi



Farmers at Agriculture Mandi, Charama



Farmers paying attention towards training on Mandi Procedure



Farmer's at Ag. Mandi, Charama



Farmer's visit at Stocks maintained at Mandi



Farmers getting training on Mandi Procedure



Farmers visit at Ag. Mandi, Charama

5.15 Exposure Visit for Irrigation groups

Number of Exposure: 2

Number of Participants: 50

Farmers from Village Palewa, Kurrubhat and Badatola were taken on exposure visit at NETAFIM, Dhamtari. Farmers were given demonstration on various use of drip Irrigation in Agricultural production.

5.16 Non Farm Training Programme

Number of Trainings: 2

Number of Participants: 60

Training on NTFP with specific focus on Lac was organized at village Geetpahar and Ranidongri.

5.17 Need Based Training on SHG Strengthening

Number of Trainings: 11

Need based training for the members of the SHGs were organized on the following topics: House hold based processing unit, Washing Powder, Lac, Mandi procedure, Poultry



Sharathi Mahila SHG Members under learning process



Member of Chetna Mahila SHG is Preparing Processed food

5.18 Awareness Programme towards Women Empowerment

Number of Programmes: 11

Awareness programme on Women Empowerment was conducted on the following topics: Collective action through SHG formation, Small Entrepreneurship unit such as pitcher formation unit etc.



Women engaged in the process of learning by doing of Pitcher formation

S.No.	Village	Name of SHG	IGA
1	Badatola	Mahila Vikas SHG	Mahua Collection
2	Ranidongri	Sadbhawna Mahila SHG	Pitcher Unit
3	Kilepar	Jagriti Mahila SHG	Pitcher Unit
4	Kilepar	Gayatri Mahila SHG	Nursery
5	Halba	Sarthak Mahila SHG	Piggery
6	Kusumpani	Pragya Mahila SHG	Incense Stick Production
7	Hatka Charama	Jay Budhadev Mahila SHG	Piggery
8	Telguda	Chetna Mahila SHG	Vermi Compost Unit
9	Thanabodi	Vidya SHG	Tailoring Center

5.19 Need Based Income Generating Activities

Number of IGA Activities: 9

5.20 Promotion of Smokeless Chullah Number of Smokeless Chullah: 125

These villagers were given training for construction of Smokeless Chulhas. After training the beneficiaries were provided all the necessary material for the construction of smokeless Chulhas viz Pipe, Bricks, Iron Grate, Cement, Red oxide Primer & Paint, etc.

The basic aim of this activity was to contribute somewhere in the conservation of Forest. This is by reducing the consumption of fuel wood. Moreover this activity will contribute in keeping the health status of women intact. This activity will reduce the emission of smoke near the cooking place, which will help the women's to get rid of the breathing problem and lungs infection and eye infection. Furthermore, these smokeless Chulhas will help in improving the general ambience of the house. It is so because the traditional Chulhas emits lot of smoke which gets deposited on the wall everyday and turns it dark. Simultaneously the deposition of the smoke in the form of carbon is hazardous for health. It absorbs the light and leads to darkness inside the house even during the day time. Also a specific smell remains throughout with the use of traditional Chulhas, which can be rectified by the use of smokeless Chulha.

Smokeless Chulhas are also cost effective in comparison to the traditional Chulhas because complete combustion of fuel takes place in smokless Chulhas because of the increase in the calorific value of wood, cow dung cake and coal etc. This activity has also addressed the drudgery of women.



Smokeless Chullah



Smokeless Chullah under Construction

5.21 Promotion of Fiber Sheets for Natural Sunlight Number of Fiber Sheets installed: 125

The traditional tribal house of Chhattisgarh is thoroughly deficient of sunlight inside the house. It is so because, these houses doesn't have ventilation or windows. Moreover the doors are also very small, because of which the house remains very dark even on the bright sunny day. Therefore, the villagers need to use the earthen lamp or Lantern even during the day time. The use of glass roof tiles will also be a cost effective affair as it will save the consumption of Kerosene and electricity during the day time.

After installation of glass roof tiles women can stay inside the house for longer duration which can help her to do maximum work within the house during the harsh summers, rainy season, and extreme winter time.

5.22 Health Awareness Programme

Number of Awareness Programme: 15

Under NABARD WADI Health awareness programme was conducted among 15 villages of the project area. Awareness was created on primary and preventive health practices which includes Sanitation practices, Drug reduction, Woman and Child Health.

5.23 Kitchen Garden Kit Support

Number of Participants: 600

Under NABARD WADI Project Seeds of Tomato, Ladies finger, Long gourd, Chilli, Drumstick was distributed among tribal farmers.

5.24 Supply of Safe Drinking Water and Medicine Kit

Number of Kits distributed: 8

Under NABARD WADI Project sieves were distributed and treatment of water bodies was done through application of Potassium permagnet.

5.25 Need based Health Camps

Number of Health Camps: 3

S.NO.	VILLAGE	NUMBER OF BENEFICIARIES	DATE
1	Palewa	128	08.09.2010
2	Bhanpuri	246	10.12.2010
3	Nawdabri	94	19.02.2011

Health Camp was Organized by Gramin Vikas Trust, Raipur at Palewa Village of Charama block District Kanker, Chhattisgarh under NABARD WADI Project. Dr. O. P. Shankhwar, Block Medical Officer, Charama, Dr. Reshma Kewalramani and Dr. Nisha Kewalramani, Primary Health Center, Halba, Haradulla and an Ophthalmologist were in the team. The Camp targeted Ladies, Children, Old men and women because these sections need more attention on Health Point of View.



Doctors examining Patients at Health Camp





Distribution of Medicines at Health Camp

6. Advocacy and Networking

AGENCY	FINANCIAL (Rs)			
	TARGET	ACHIEVEMENT		
NRTT	200000	6550		

NABARD		
RiUP		
GVT		
Government		
Community		
TOTAL	200000	6550

6.1 Panchayat, District and State level Workshops

Number of Workshop: 1

Date & Venue: 22.2.11 at village Pandripani, Charama.

Number of Participants: 45

Objectives:

- To focus on importance of Crop rotation
- To focus on improve methods of Paddy Cultivation (SRI)
- To focus on various schemes of Department of Agriculture

Key Persons Invited:

Mr. K.D. Deepak (DDA, Kanker),
Dr. G.P.Pali (Project Coordinator, KVK, Kanker),
Mr. R.P. Minz (DDM, NABARD, Kanker)
Mr. Basant Yadav (Chairman, Chhattisgarh Gramin Bank, Charama)
Issues discussed:

- Incorporation of Vegetables, Pulses & Oilseeds with Paddy cultivation
- Importance of SRI method of Paddy Cultivation to minimize the input cost
- Soil Health Reduced dependency on Chemical Fertilizers and maximum use of Bio-Fertilizers
- Organic method of Crop Cultivation



Key Persons Addressing the folk



Farmers Listening to Key Persons

6.2 **Process Documentation**

Activity has been scheduled in the financial year 2011-12

6.3 Establishment of One Rural Knowledge Bank

Activity has been planned during the financial year 2011-12.

6.4 Internal Monitoring and Evaluation

On field and Off Field monitoring has been conducted for the activities implemented on regular interval throughout the financial year 2010-11 by the concerned officials.

6.5 Research on NTFP

Research has been conducted to analyze the potentiality & market of NTFP at Charama block of Kanker District by TAS manager.

ANNEXURE – I

Details of SHGs formed under NABARD WADI Project

Name of Project - NABARD WADI, Charama							Status till Date - 03-01-2010			
S.	Name	Nome of	Total No.				Sa	ving		
Ν	of Ville se	Name of SHG	of Members	Accou nt No.	Openin g Date	Ba nk	SH G	Lo an	Tot al	Activity
•	Village					шк	G	all	ai	Mahua
		Mahila Vikas		770001	04.05	25	12	35	72	Mahua Collectio
1	Badatola	SHG	12	31634	.2010	$\begin{array}{c} 23\\00\end{array}$	00	00	00	n
-	Dudutolu	Sarvoday	12	770001	28.04	36	00	00	36	
2	Tikrapara	Mahila SHG	10	24775	.2010	00	_	-	00	
	Ranidong	Sadbhawna		770001	28.04	26	22		29	
3	ri	Mahila SHG	11	24297	.2010	93	0	-	13	Pitcher
		Jagriti Mahila		770001	28.04	90	66		15	
4	Kilepar	SHG	11	20214	.2010	0	0	-	60	Pitcher
	-	Mahila		770001	04.05	68	52	17	29	
5	Kotela	Ajivika SHG	12	31612	.2010	2	0	00	00	
		Hariyali		770001	11.05	47	20	10	77	
6	Tikrapara	Mahila SHG	11	41304	.2010	00	00	00	00	Poultry
		Gayatri		770001	06.05	15	20	10	27	
7	Kilepar	Mahila SHG	11	41279	.2010	00	0	00	00	Nursery
		Ujjaval		770001	11.05	99	20	16	27	
8	Kotela	Mahila SHG	11	71826	.2010	0	0	00	90	
		Aay Srijan		770002	05.06	50			50	
9	Badatola	SHG	11	40247	.2010	0	-	-	0	
					05.06					
		Adi Sakti		770007	201	18		30	48	
10	Geetpahar	Mahila SHG	14	40269	0	00	-	00	00	
		Navyuvak		770002	03.06	13	50		18	
11	Geetpahar	SHG	10	40190	.2010	00	0	-	00	
		Pragati		770003	15.07	16	22		18	
12	Halba	Mahila SHG	11	10329	.2010	50	0	-	70	
	.	Prerna Mahila		770003	15.07	31	60		37	
13	Bhanpuri	SHG	11	10261	.2010	00	0	-	00	
		Sarthi Mahila		770003	07.07	26	50		31	
14	Telguda	SHG	11	76559	.2010	00	0	-	00	
1 ~	Pandripan	Mahamaya	10	770003	07.07	14	28	70	23	
15	i	Mahila SHG	12	76595	.2010	00	0	0	80	
10	TT-11	Sarthak	10	770003	07.07	16	24		19	Disc
16	Halba	Mahila SHG	12	76663	.2010	80	0	-	20	Piggery
17	Dumarpa	Ruchi Mahila	10	770003	24.06	30	50		35	
17	ni Kusumas	SHG	10	66203	.2010	00	0	-	00	A
10	Kusumpa	Pragya Mabila SUC	11	770003	24.06	14	44		19	Agarbatti
18	ni	Mahila SHG	11	66214	.2010	70	0	-	10	Unit

	Hatka	Jay Budhadev		770003	24.06	14	40		18	
19	Charama	Mahila SHG	10	66225	.2010	00	0	-	00	Piggery
	Dumarpa	Disha Mahila		770003	24.06	16	22		18	
20	ni	SHG	11	66236	.2010	30	0	-	50	
	Thanabod	Ekta Mahila		770003	24.06	27		50	32	
21	i	SHG	10	66269	.2010	00	-	0	00	
	Thanabod	Pratigya		770003	24.06	33	50		38	
22	i	Mahila SHG	10	66258	.2010	50	0	-	50	
		Adarsh		770004	07.07	25	80		33	
23	Tansi	Mahila SHG	10	28698	.2010	00	0	-	00	
		Janjagriti		770004	07.07	25	80		33	
24	Tansi	Mahila SHG	11	28728	.2010	00	0	-	00	
		Chetna		770004	07.07	17	33		21	Vermi
25	Telguda	Mahila SHG	11	28717	.2010	90	0	-	20	Compost
	Kohkatol	Samarthan		770005	23.07	11	24		13	
26	а	Mahila SHG	11	63982	.2010	00	0	-	40	
		Sanklap		770004	07.07	14	40		18	
27	Jepra	Mahila SHG	10	50436	.2010	00	0	-	00	
	Shreeguh	Unnati		770005	23.07	15	22		17	
28	an	Mahila SHG	11	63971	.2010	00	0	-	20	
		Sriddha		770006	03.08	90	15		10	
29	Jepra	Mahila SHG	10	28863	.2010	0	0	-	50	Poultry
	Thanabod			770007	08.08	82	20		10	Tailoring
30	i	Vidya SHG	10	31620	.2010	0	0	-	20	Centre
		Suruchi		770007	26.08	50			50	
31	Telguda	Mahila SHG	11	52200	.2010	0	-	-	0	
		Akansha		770009	13.10	70	20		90	
32	Jepra	SHG	10	44991	.2010	0	0	-	0	
	Dumarpa	Tulsi Mahila					90		90	
33	ni	SHG	10				0	-	0	
		Navin Mahila					90		90	
34	Nawdabri	SHG	11				0	-	0	
		Nirmal		770010	14.10	70	20		90	
35	Tahkapar	Mahila SHG	12	64621	.2010	0	0	-	0	
		Akash Mahila		7.7001	14.10	70	20		90	
36	Tahkapar	SHG	12	1E+11	.2010	0	0	-	0	
	Thanabod	Jyoti Mahila					70		70	
37	i	SHG	10			-	0	-	0	
		Jay Sewa				50	20		70	
38	Jepra	SHG	10			0	0	-	0	
	Ranidong	Rachna	4.5	770011	16.11	70	20		90	
39	ari	Mahila SHG	10	90667	.2010	0	0	-	0	
	Kusumpa	Gajanand					50		50	
40	ni	SHG	11				0	-	0	

De	tails of Gover	nment Contr	ibution in Pr	oject Villages u	nder NRTT	-CInI (Jan-11	to Mar-11)			
S. N									
0.	Village	Panchayat		Amount of Ac	ctivities(Rs)		TOTAL			
				Constructio		Desilting				
				n of Rain	Constru	of Existing				
			Land	Water	ction of dugout	Water Harvesting				
			Land	Harvesting Structure	Ponds	Structures				
1	Tikrapara	Ranidongri	508000				508000			
2	Ranidongri	Ranidongri	536000				536000			
3	Pandripani	Pandripani	647820				647820			
4	Kilepar	Kilepar			198000	666000	864000			
5	Jepra	Jepra	800000				800000			
6	Araud	Araud	296000			200000	496000			
7	Tahkapar	Tahkapar	1500000			400000	1900000			
8	Palewa	Palewa	527159	142528			669687			
9	Kohkatola	Bharritola	65392				65392			
10	Bhaisakatta	Badatola	260460				260460			
11	Dumarpani	Dumarpani	566100				566100			
12	Bhanpuri	Bhanpuri	710500				710500			
			6417431	142528	198000	1266000	8023959			

ANNEXURE – II

Chapter -IV Project – RiUP Best Bet Funded By – Banger University,UK



RiUP BEST BET

Best Bet Project – Research into Use Project

In RiUP Best Bet project distribution of Ashoka 200 F cultivar i.e. Upland Paddy have been done in Charana and Narharpur block. The total number of beneficiaries were 9000 farmers of Charama and Kanker. The seed distribution of Ashoka 200F was done with 1000 villagers.

The performance evaluation is under process. Consequent to this in the month of December 2010 The procedure of signing the MoU under Public Private Partnership Programme with Indira Gandhi Agricultural University (IGAU), Raipur (CG) for testing trials of five cultivars i.e. BVD 109 (Ashoka 200 F), BVD 110, BVD 111, BVD 203 and Birsa Vikas Dhan-1 were planted in different Agro-Climatic Zones of Chhattisgarh already took place.

Visit of Dr. J. P. Yadvendra

On 13 December 2010 a visit have been taken place of Dr. J. P. Yadvendra, Crop Consultant, GVT, Jaipur, (Raj.).

This visit was primarily focusing on the submission of reports of testing trials. For this Dr. J. P. Yadvendra met Vice Chancellors of IGAU, Raipur (CG) and Dr. Motiramani HOD, Plant Breeding, College of Agriculture, Raipur (CG)

Exposure Visit and Field Day Program

An exposure visit and field day program has been done for Farmers Upland Rice School (FURS). The total number of beneficiary covered were 8000. In which 4000 villagers have been covered under exposure and rest 4000 were covered under field day program.

The prime concern for doing all these was to target more beneficiaries and to cover maximum land of Charama and Narharpur blocks for trials. As these areas comes under Rainfed area and land of these blocks is not having fertility.

The beneficiaries were from villages where the trials of Ashoka 200 F was done. During the day Ashoka 200 F have been explained to villagers. From that the villagers have got motivated and started responding enthusiastically for the trails.

Under Field Day Program we gave presentation about Ashoka 200 F cultivar. For this we were organized the meeting in their villages and described the all features and crop cultivation practices by our technical person.

Summary of the Project details are as follows:

	Farmers Upland Rice School (FURS)							
Sr. No.	Particulars	Remarks						
1.	Seed distribution of Ashoka 200 F cultivar	1000 No. of beneficiaries covered						
2.	Exposure Visit	4000 No. of farmers covered						
3.	Field Day	4000 No. of farmers covered						
4. Te	Seed distribution of Ashoka 200 F cultivar esting Trials of Five Cultivars in Di	farmers will be benefit						
	Chhattisg	0						
1.	BVD 109							
2.	BVD 110							
3.	BVD 111	Results awaited						
4.	BVD 203							
5.	Birsa Vikas Dhan-1							

Glimpse of the Ongoing Project



Fig. 1 Picture shows the performance and suitability of crop in Kanker district. This is the field of Panchuram Gond of Narharpur block. He was done transplanting for its better performance.



Fig. 2 Farmers of Kochwahi and Masulpani village had came for exposure visit at Kahankatola village.



Fig. 3 Picture has been taken at the time of enters the field under exposure visit programme and display the banner by farmers.



Fig. 4 Farmers Ashoka 200 Fcultivar for counting the grains per panicle at the time of exposure visit.



Fig. 5 At the time of exposure visit we have been distributed pamphlets containing all the basic information about cultivation practices of Paddy Ashoka 200 F cultivar. In side pictures farmers read the pamphlets very carefully.

CHAPTER - V

Project - Sustainable Livelihood Enhancement of Poor Rural Community

Funded By - East Raipur Forest Division, Raipur, (CG)



Sustainable Livelihood Project (SLP)

GVT is implementing Sustainable Livelihood Rural Development Project funded by Department of Forest, East Division Raipur in four villages' viz. Karchali, Bamhani, Devsara and Dwartara of Block Chhura, in Raipur District, (CG). The Project is focused to the target group comes under below poverty line and to build capacity along with alternate livelihood options the beneficiaries.

Brief Introduction of Implementation All four villages are 15 k.m. far from Block Chhura. Tribal Community is in majority over here. Basically villagers are dependent for their livelihood on Agriculture and Labor work. The economic condition of rural people is the area to be focused because still most of the people over here all below poverty line. They are not even able to fulfill their basic need. That's why their livelihood enhancement should be taken into consideration, which is the prime motive of the project.

In village also poor transportation is a hurdle in growth. Villager are facing a lot many difficulties while going anywhere inside or out of the village. Because of poor transportation commercialization of natural resources also is getting diffident.

After knowing all above mentioned problems GVT was continuously in touch of villager and made them know about the all Govt. projects. GVT is also running awareness program for betterment of villagers.

		Unit	Unit cost		otal Cost
S. N.	Budget Heads	Unit /Period	Cost per unit	No of units	Total amount
1	PROGRAMME COSTS				
a.	SEED & FERTILIZER EXP'S	100	5000	100	5,00,000
b.	MICRO PLANNING EXP'S	8	10,000	8	80,000
с.	FARMERS TRAINING ON PADDY,	3		3	38,570
	WHEAT AND GRAM				
d.	EXPOSURE VISIT	3	4000	3	12,000
					5,80,000

The Major heads are as under through which funds were channelized.

Activities Carried Out

Training Centre for Stitching

The issue was *Stitching Centre for Girls and Women*. In village Karchali there is only one tailor who stitches only men's clothes. For women they have to go Chhura which is approximately 15 Kms far from villages. Subsequent to this in Chhura itself lady's tailor is fewer, only 2 or 3 lady's tailors are there who charges very high. That's why females are facing a big problem while there is a need of stitching their clothes.

Annual Progress Report, GVT, (CG) 2010-11

Keep this issue in mind the conclusion came out that if *GVT can train the girls and ladies for stitching in the village itself. So that the problem of going Chhura and paying too high charges should get sorted out.*

Formation of group – In meeting with villagers this decision has been taken that a group of girls should be formed who will be provided a Stitching Machine so that by training all girls and women they will get self dependent and also would earn some money out of this.

This center will also provide a certificate of the course by which trainees can practice the stitching not only their villages but also other villages. This practice will help them in earning also.

No. of Self Help Groups - For stitching center three Self Help Groups are there.

No. of Members - 37 members are associated.

<u>Needed Instruments</u> - Ten Stitching machine and three Pikoo Fal machine is needed.

Names of Self Help Groups -

1. Jagriti Self Help Group in Village - Karchali

2. Jai Maa Karma Self Help Group in Village - Bamhani

3. Jai Ghatarani Self Help Group in Village – Devsara

Training and Exposure in Dona Pattal Unit

In villages Bamhani and Karchali conducted an Exposure cum Training for Self Help group along with Ms Minakshi Bisen, CO, GVT, Raipur and Mr. Mukesh, PO, GVT, Raipur to A Government unit, Digli. There unit incharge Mr. Gangaram Mandavi gave training to all villagers.





Dona Pattal making machine in Forest Division, Dhamtari, (CG)

In training villagers came to know about technicalities of making of Dona Pattal. He told that how long one has to keep the paper and leaf together to make the perfect Dona Pattal, what should be the timings and all. How long will one has to keep the material in so that machine could not get hot and will get damaged. He told about the all precautions.

Mr. Mandawi had also told about the different type of machines and raw material to be used in machine.

Along with the training all villager along with Mr. Mukesh, PO GVT, Raipur and Ms Minakshi Bisen, CO, GVT, Raipur roam around the unit and knew all the aspects of Dona Pattal making.



Village women trying to make the Dona Pattal during Exposure and Visit to Unit



Women showing Dona Pattal



Ms Minakshi Bisen, CO, GVT showing the Dana Pattal in unit

Training and Exposure in Fishery Unit

Two groups Jai Bardev Baba Self Help Group, Bamhani and Jai Maa Kali Self Help Groups along with Mr. Mukesh, PO GVT, Raipur, Ms Minakshi Bisen, CO, GVT, Raipur and Mrs Vridavati Patel, CO, GVT, Raipur were taken to Department of Fishery, Gariyaband, Aamdi.

In The location Mr. Goswami told every technical and non technical aspects of Fishery. Also he gave description about the seeds and all fungicides and chemicals used for fishery. These all used for prevention of seeds from insects and harmful micro organisms.

Mr. Goswami also gave a description about the feed of fishes.

Some Snapes of Visit to Fishery Unit



Annual Progress Report, GVT, (CG) 2010-11





Training and Exposure in PoultryUnit

One Self Help Group Chandani village Karchali along with Mr. Mukesh, PO GVT, Raipur, Ms Minakshi Bisen, CO, GVT, Raipur and Mrs Vridavati Patel, CO, GVT, Raipur were taken to Village Dadar, Chhura for Training and Exposure of Poultry.

In Dadar owner of Poultry farm Mr K. Chandrakar gave a detail knowledge of Poultry Farm. He told about bringing the chicks and their nourishment and all preventive measurements of death.

He also gave a detailed knowledge of establishment of Poultry Unit. Feed of Chicks and Chicken, Temperature control, Hygine and various aspects of it.

He told about how the Chickens take their food n water, the instrument used for this is called Drinker and Feeder. He also told about the vaccination for their better health and prevention from various diseases.

Which chemicals and medicines should be used for chickens and all health aspects were delt was him.

Some Pictures are shown here under –



An Interaction of Beneficiaries with Poultry owner along with GVT's representative



Poultry food



A View inside Puoltry Farm

Distributio of High Milching Cow

In this context GVT team Mr. Vijay Bhushan, RPM, GVT, Raipur, (CG), Mr. Mukesh Kumar, PO, GVT, Raipur, (CG), Ms Minakshi, CO, PO, GVT, Raipur, (CG) and Ms Naushaba Khan, PO, GVT, Raipur, (CG) met Mr. R. K. Uke, Deputy DFO, Raipur, East Division, Raipur, (CG) on 27th October 2010.

Also the villagers of village Karchali wanted to make a huge group of people instead of small SHGs for Fishery and the whole village will work as one unit. This was an appreciable fact but was not allowed in project design. So this issue was also discussed and had been granted for implementation.

Incorporation of Three new villages of Fingeshwar in the project

Three new villages Nangjhar, Soridkhurd of Block Chhura and Bidora of Block Fingeshwar have been incorporated in the project.

The PRA has been done in Bidora and Soridkhurd and. In PRA need of the villages have been came out. Initially GVT team interacted with community for SHG formation. Also the women participation has taken care.

PRA have been conducted on Bidora village of Fingeshwar Block.



Initial interaction with community of Bidora, JFM members are shown in the picture

PRA resource mapping is done by the participation of community by GVT team, Raipur, (CG), Villager pointing the resources in the picture



PRA resource map of village Bidora, Block Fingeshwar

PRA in Village Nangjhar, Block Chhura

On 20th December 2010 PRA have been conducted on Nangjhar village of Fingeshwar Block.



Picture showing community along with GVT team in PRA resource mapping



Picture showing the preparation of PRA resource mapping



Community telling about their village in PRA resource mapping



PRA resource mapping in village Nangjhar, Block Chhura

PRA in Village Sorid Khurd, Block Chhura

On 20th December 2010 PRA have been conducted on Soridkhurd village of Fingeshwar Block

PRA resource mapping in village Soridkhurd, Block Chhura



An old villager telling about the resources of village Soridkhurd



Community gathered in village Soridkhud for PRA



GVT team member Mr. Prem Chand Sinha, PO, GVT, Raipur telling about the PRA to villagers



PRA resource mapping in village Soridkhurd, Block Chhura

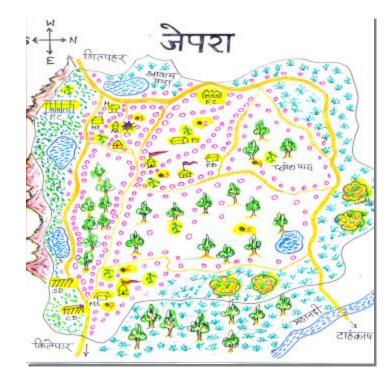


President of JFMC Mr. Chumman telling about the PRA resource map of Soridkhurd

Chapter - VI

Project – VILLAGE DEVELOPMENT PROGRAM

Funded By – NABARD, Raipur, (CG)



VILLAGE DEVELOPMENT PROGRAMME

NABARD has introduced, the Village Development Programme (VDP) for the holistic and integrated development of villages through preparation of Village development plans. The objective of Village development plan is to focus on financial inclusion and also to develop the selected villages in an integrated manner. This would include economic development, infra-structure development and other aspects of human development i.e. education, drinking water supply, Health, etc.

				Expenditure in 5 Villages of Village nent programme (VDP) during 2010- 2011(in Rs.)			
			Kilepar	Jepra	Kurrubhat	Palewa	Hatka- Charama
1	Village Level Workshop/ Meetings	Village level meetings	1500	-	-	-	-
2.	PRA	PRA exercises	2500	2000	3000	3000	3000
3.	Meetings with representative of various groups/Banks/Agencies	WS on Banking schemes/ KCC/Financial Inclusion	-	-	-	-	1000
		Awareness programme on SRI method of Paddy Cultivation	2000	3000	2500	1500	2000
		Awareness programme on PRI members	2500	2000	2000	1500	1200
4.	Exposure Visit	Exposure Visit of Farmers/Participants to KVKs/Agriculture university/Modern Farms	-	-	-	-	8000
5.	Activity specific intervention of	Information cum public notice board	2000	2000	1500	1500	1500
	Common nature benefitting the community (Based on local Requirements)	Printing Material for awareness creation	1000	1000	1000	1500	2500

Heads of Village Development Programme (VDP)

Bar graph showing the activity and village wise project expenditure (2010-2011)

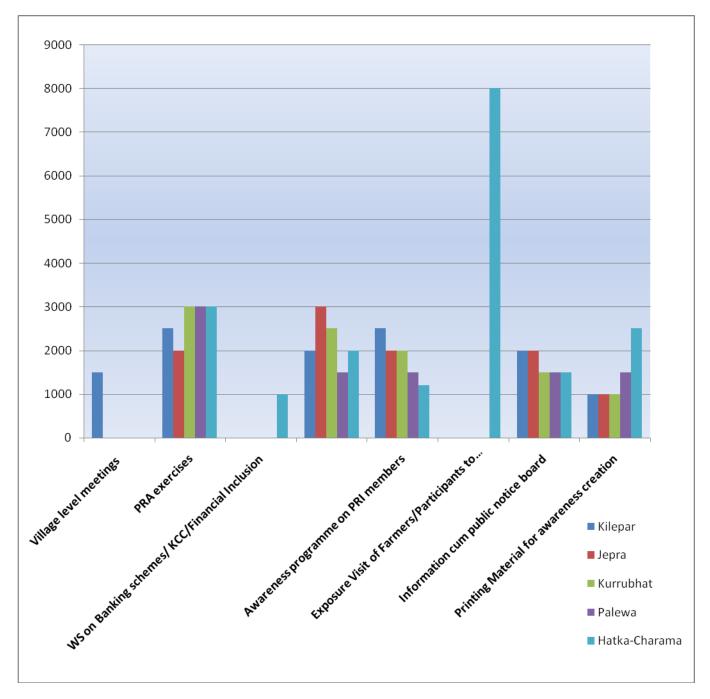


Chart1. Bar graph showing the activity and village wise project expenditure (2010-2011)

A majority of the villages in the country still face constraints such as access to education, Health, Safe drinking water, power, Roads, Credits, information and markets. Against this background, adoption of specially villages in backward regions for development through preparation of village development plans would go a long way in ensuring holistic and integrated development of the villages concerned.

The key strategies of VDP is like developmental activities will be implemented through people's participation involving Gram Panchayats (PRIs), SHGs, Farmers groups, and other people's organization. The integrated development will include creation of infra-structure by concerned state

govt. assisted by Nodal implementing agencies if required. The Nodal agency would co-ordinate, facilitate and provide financial support either directly or through networking with Banks/Govt. etc.

Brief Report

Village Level Workshop/ Meetings

Under Village Level Workshop/ Meetings head of Village Development Programme a Village level Meeting Cum Training has been organized in Kilepar with total financial implication of Rs. 1500/- on 5th June 2011. Under this meeting 30 villagers have been given training of Mushroom cultivation and Wadi after care, Vegetable cultivation, Watershed etc.



Trainer demonstrate the Villagers how to Cultivate Mushroom

PRA (Participatory Rural Appraisal)

Under PRA exercises of VDP, PRA exercise has been organized in each VDP villages i.e. **Kilepar, Kurrubhaat, Jepra, Palewa, & Hatka-Charama**. Villagers came forward and shared the experiences, micro-planning, village infra-structure, etc.

The exercise included economic development, infra-structure development and other aspects of human development i.e. education, drinking water supply, Health, etc. The success of Micro-planning lies in people's participation, their enthusiasm and keen inclination towards development which include social, financial, economical, physical as well as institutional.



PRA exercise in Village Kurrubhat



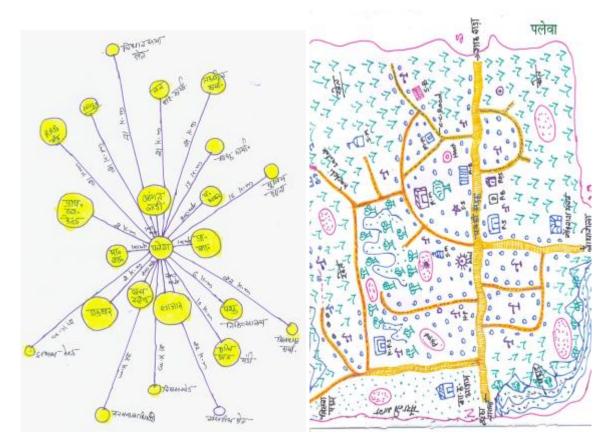
PRA exercise in Village Kilepar



PRA Exercise in Village Hatka-Charama

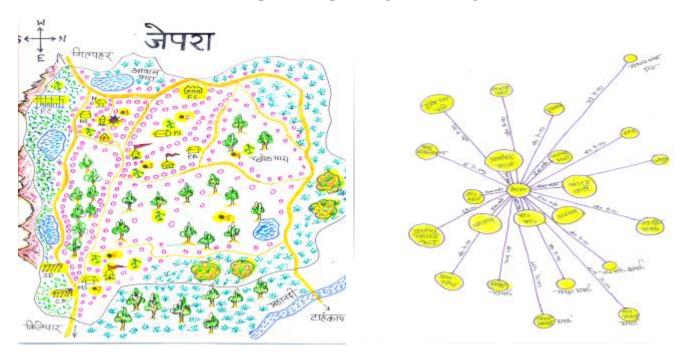


PRA exercise in Village Palewa

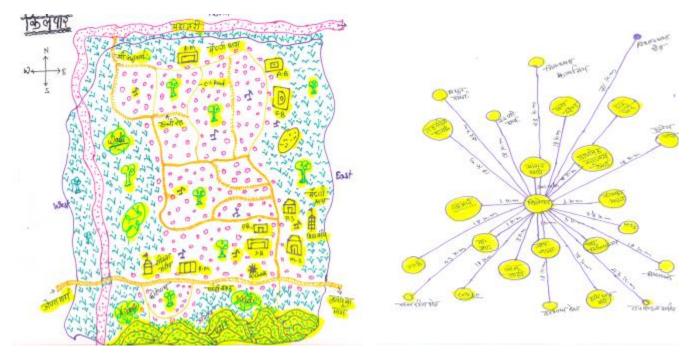


Resource Map and Chapati Diagram of the Villages

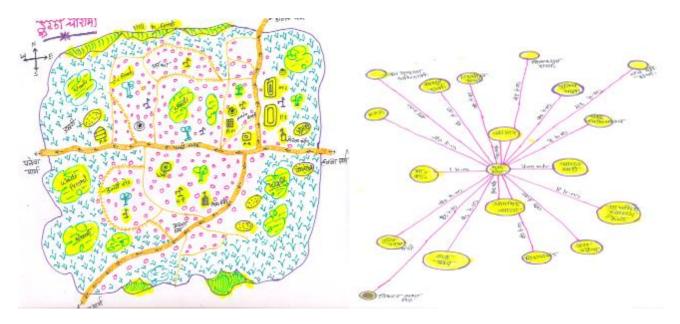
Resource Map and Chapati Diagram of village Palewa



Resource Map and Chapati Diagram of village Jepra



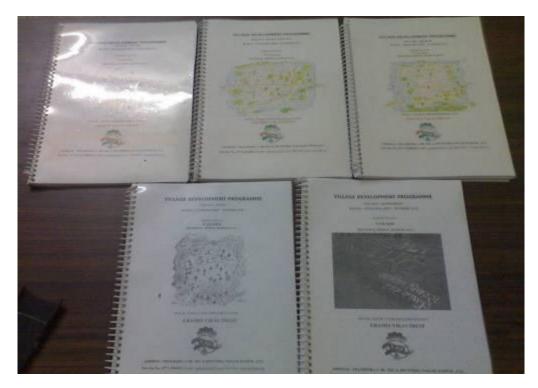
Resource Map and Chapati Diagram of village Kilepar



Resource Map of Hatkacharama and Chapati Diagram of village Kurrubhat

Submission of Microplan

After completion of PRA in all five VDP villages microplan has been submitted to NABARD, Raipur, (CG). In all microplan development aspects has been delt in details. This microplan narrated requirements of the villagers on the basis of village meetings and PRA.



Microplans of VDP villages

Community Mobilization and making foot prints in the villages

For making community aware of the project some steps had been taken.



Meetings with representative of various groups/Banks/Agencies

Workshop on Banking schemes/ KCC/Financial Inclusion

Under Meetings with representative of various groups/Banks/Agencies head of VDP, A Work Shop has been conducted on Banking schemes/ KCC/Financial Inclusion in Village Hatka-Charama in which 25 members of 3 SHGs had shown their presence and made the meeting precious and valuable. Basically, the meeting was focused on SHG record Keeping, Book maintenance, ledger making, Saving practices, Internal lending of SHG, Bank Linkages, Revolving fund and term loan, etc. Women were very enthusiastically involved during whole session.



Meeting at Hatka-Charama on Banking procedure and Women were enthusiastically participating.

Awareness programme on SRI method of Paddy Cultivation

Under Meetings with representative of various groups/Banks/Agencies head of VDP, awareness programme on SRI method of Paddy Cultivation has been conducted on all 5 Villages: Kilepar, Jepra, Palewa, Kurrubhat, Hatka-Charama. A master trainer Mr. Raj Kumar Sinha and Mr. Prakash Salam, RAEO, Charama had suggested the new technique of paddy cultivation, called System of Rice Intensification (SRI) to the Farmer and also addressed the recommended dose of Fertilizers and Water use efficiency. Under Convergence with CInI Project, The Farmers of Jepra and Kilepar were adopted SRI way of cultivation and the result were outstanding. In Year 2011-12, the target is to benefit more farmers and disseminate the technique to other nearby villages. The objective was to make the farmers aware about improved technologies used in paddy cultivation and, to minimize the inputs and costs involved as compared to traditional method of Paddy cultivation. Farmers were given training on SRI method of Paddy Cultivation. They were also aware about the Principle and procedures involved in SRI method of Paddy Cultivation.

Principles of SRI method of Paddy Cultivation -

- 1. Transplanting of Younger Seedlings at two leaf Stage
- 2. Transplanting of single seedling per hill
- 3. Square method of planting e.g. 25X25 cm
- 4. Field should be moist not flooded with water
- 5. Use of Conoweeder for weeding at interval of 15 days (minimum 2-3 times)
- 6. Maximum use of Bio fertilizers and Bio Pesticides



Awareness programme on SRI method of Paddy Cultivation

Awareness programme on PRI members

Under Awareness programme on PRI members' head of VDP, awareness programme on PRI member has been conducted on all 5 VDP Villages: Kilepar, Jepra, Palewa, Kurrubhat, Hatka-Charama with total financial implication of **Rs. 9200/-.** Under this activity, the PRI Member has been informed about the **PESA** and RTI. The PRI members were unaware about the right to information (RTI) and PESA. The PRI staffs were worried about the MGNREGA work and discussed some critical issues came under RTI. Mr. Arun Sahu, Master Trainer, focused some of the hidden facts like UA, etc.



Members were listening carefully about the PESA and PRI act at Jepra.

Exposure Visit of Farmers/Participants to KVKs/Agriculture university/Modern Farms

Under **Exposure Visit of Farmers/Participants to KVKs/Agriculture university/Modern Farms** head of VDP, Farmers were visited Bendranawagaon, where they visited new modern techniques of Agriculture, energy conservation, vegetable cultivation, vermi-composting, Food processing, Orchard caring and Maintenance.



A Farmer was looking the advanced vegetable cultivation under Shed net.



Farmers were taking the advantage of new technique of Paddy cultivation, vegetable cultivation.



Vermicompost unit was visited by Farmers

Activity specific intervention of Common nature benefitting the community (Based on local Requirements)

Under Activity specific intervention of Common nature benefitting the community (Based on local Requirements) head of VDP, GVT, Raipur provided a Information cum public notice board with total financial implication of **Rs. 8500/-** in each VDP Village: Kilepar, Palewa, Jepra, Kurrubhat, Hatka-Charama. The benefit of this Notice board is to inform the villagers about the Govt. Schemes, Information of project implementation, Action plans for development activities, Schedules of Village level meetings, etc.

Under Activity specific intervention of Common nature benefitting the community (Based on local Requirements) head of VDP, GVT, Raipur had taken an initiative to aware the villagers about the NABARD, schemes through wall Painting in all 5 VDP project Villages. Through this tool, Wall painting, Villagers can acknowledge and imbibe the Concept of the projects running in Village. The Chhattisgarhi slogans helped them to get the information more effectively than Hindi Language about the importance of the project.

CHAPTER – VII Project – ALTERNATIVE INCOME GENERATING ACTIVITY Funded By – FOREST DEPARTMENT, RAIPUR, (CG)



INDEX

Sl. No.	CHAPTER	PARTICULAR
1	Chapter I	An Introduction to the Project
2	Chapter II	Physical Work Progress
3	Chapter III	Meetings with Government Official
4	Chapter IV	Mile Stones
5	Annexure	
	Annexure – I	Action Plan for April Activity
	Annexure – II	Specimen copy of Microplan
	Annexure – III	The list of selected JFMCs
	Annexure – IV	Map of Mili Watershed Area of Dhamtari & Kanker
	Annexure – V	Financial Outlay of Five Year's Plan
	Annexure - VI	The vision plan

CHAPTER – I

AN INTRODUCTION TO THE PROJECT

Integrated Livelihood Project

Integrated Livelihood Project or Alternative Income Generating Activity is project funded by Forest Department, Raipur, (CG) the development efforts of GVT to be initiated under Alternative IGA (Income Generating Activity) Project in Kanker and Dhamtari districts. This project is funded by Forest Department. The need for community's participation in qualitative and quantitative development of the forest resource was recognized right from the outset.

Forest Department realized that Alternative IGA (Income Generating Activity) Project could be a suitable and sustainable endeavor for the difficult areas where the percentage of forest degradation is comparatively higher. Also it is envisaged that in the identified areas the forest dwellers did not meet even the basic needs of the life. Thus appropriate and long lasting options for the qualitative improvement of livelihood, reduction in the dependence of forest and overall improvement of the forest would be an important part of our implementation work.

In this report we have presented the tentative action plan for the Alternative IGA Project. This concept report produced positive outcomes that will benefit the livelihood of thousands of poor farming households in Kanker and Dhamtari districts.

PROJECT DETAIL

Alternate Income Generating Project is for the development and with respect to increase in the level of living standard of rural people by placing coherent plan and strategy by symbiosis of Government of India and Non Government Organization which will act as a connecting link between Government and people of forest vicinity.

The main focus area of the project is mentioned below –

Decrease the dependency of rural people on forest - To decrease the dependency of rural people on forest and decrease the fuel wood consumption to zero percent by providing them grazing land and other supplementary way to prevent the misuse of forest.

Aforestation of degraded forest area - Consequently while opening the new door for the development of forest inhabitant, the foremost point of consideration of this project is to do aforestation of degraded forest area.

Formation of grazing land – To protect forest from illegal grazing there should be a land allotted only for grazing.

Increase income of rural people by positively use of natural resources - Also the focussed point is to increase income of rural people by positive use of natural resources. It will be an added advantage along with their basic income.

Formulation and implementation of the new business strategies for the forest dwellers - Project is also for facilitating the formulation and implementation of the new business strategies for the forest dwellers.

In Chhattisgarh the total no. of farms are 34.61 lacs but because of limited sources of irrigation the fertility and productivity of soil is not very good. So by providing better irrigation facility these lands can also be a profit generating land for the farmers.

For this project the target group is specially those who live in the vulnerable condition and not earning sufficient money to meet out their basic expenses. Basic focus area on which the project will be implemented has been dealt below-

1. Wadi Development with Farm Forestry (1 Acre each).

2. Site Specific Micro Irrigation Development Work. (Stop dam / Drainage Channels / Turbines / Community Tube Wells etc

3. Distribution of Alternate Fuel Energy Sources. (Improved Biomass Chulha/ Cooking Stoves to all house-holds & installation of Bio-Briquette machine in the cluster / Solar Led Lighting System)

4. SMFE/any other Income Generation Activities based on Local Needs/Resources Including Private Nurseries ; Bee Keeping & Sericulture & Pisciculture.

5. High Density Pulpwood Plantation (forestry plantation)

6. Mechanized Cultivation Package, with emphasis on organic cultivation (Power Tiller/Mini Tractor)

7. Live stock Management. (Replacement of scrub Milch cattle).

For all above mentioned objectives and tasks the geographical location ie Kanker and Dhamtari district has been allotted. Each district will have two clusters- A and B. Cluster has been made and JFMCs under those clusters were taken as target segment for the project implementation. The criteria for selection of the cluster was **Miliwatershed Area** having **Degraded Forest and Availability of Amount in JFMC's Bank Account.** The Miliwatershed areas where degradation was higher in percentage was taken in first priority. Where aforestation can be done along with activities of income generation, it fell into the category of cluster A. As per the guidelines cluster B was those JFMCs which are having considerable amount in their account. Some of the JFMCs which do not have minimum required amount can be taken along with these JFMCs which has the considerable amount in their account as per their geographical location.

The proposed project will organize poor rural families of Dhamtari and Kanker of Chhatisgarh state into Self Help Groups to enhance of quality of forest and livelihood capabilities for developing secure livelihood oppurtunities.

The project will motivate and train forest dwellers in a phased manner to facilitate the development and implement plans to enhance productivity and carrying capacity of their forest land and water resources ,diversify and intensify agriculture and adopt husbandry –oriented resource management practices imperative for sustainable use of resources.

The project will build and nurture a large pool of resource persons drawn from rural people to support and sustain the resource management system. The proposed project would have an important demonstration effect on formulation of policies and creation of institutions in future.

OBJECTIVE

To develop an integrated plan of action aimed at

- Providing immediate relief in terms of decreased dependency on forest and increased availability of other developmental options for village livelihood.
- Physical improvement of the selected degraded forest areas through JFMCs.
- Converting surplus labor into economic assets.
- Generating an awareness for their duties inspite of their continuous demand for rights and usufructs from forest.
- Improving the livelihood status of the poor along with the conservation of forest and its products.
- Enhancing the effectiveness through convergence of existing streams of funds.

PROJECT LOCATION

The project locale has been chosen on the basis of certain criteria and parameters framed for this project. It has been done by focussing more on the degraded forest areas of Chhattisgarh. The main point of consideration was to reduce the villager's dependency on forest for their livelihood. Since decades and decades forest is being used by the villagers without its maintenance and its rejuvination. This project aims to generate an awareness among villagers for forest conservation. The project is not only focussing on the conservation of forest but also on the improvement of living standard of villager. Different cascading activities of income generation will be done in the selected project areas by using the stagnant money in JFMC's bank account.

The two basic criteria for selecting the project locations are as follows -

- 1. Cluster A Degraded forest in Mili watershed area.
- 2. Cluster B The fund availability in JFMC's account along with the above criteria.

In both the clusters those JFMCs have not been taken into consideration where development work has already been done or the work is in progress. GVT has been allotted two forest areas in Kanker and Dhamtari districts.

The list of selected JFMCs can be reviewed from Annexure IV.

SWOT ANALYSIS

Before planning for the strategy formulation, implementation and evaluation all pros and cons can be assessed by SWOT analysis. Through which broader view of the scenario can be visualize and then the uncertainty and chances of failure of planning in any manner can be minimized.

STRENGTH

- All are small compact districts.
- Motivated Self help groups and Van Suraksha Samities.
- Substantial forest wealth, including non-timber forest produces.
- Rich Bamboo areas in Bhanupratappur, Koilibeda & Antagarh blocks.
- Large number of Kusum, Bamboo & Palas trees both in forest & non forest areas suitable for Lac cultivation, Bamboo craft,etc.
- Large numbers of ponds and water bodies suitable for Pisciculture.
- Fair level of rainfall.
- Suitable agricultural fields capable for producing high yielding crops.
- Suitable areas for horticulture production.
- Area & human resources are suitable for animal husbandry.
- Good network of animal health care centers and artificial insemination centers.
- Impressive literacy rate.
- Active PRIs.

WEAKNESSES

- Poor connectivity, many roads get cut during the long monsoon period.
- Poverty & Unemployment.
- Ignorance of local inhabitants regarding modern agricultural & horticultural practices.
- Large agricultural areas under single cropping pattern.
- Poor irrigation facilities.
- Poor marketing facilities for agricultural produce and handicrafts.
- Large numbers of ponds are unutilized which could have been used for Pisciculture but needs development.

•

ows & buffaloes rearing for milk production but the breed is low productive.

С

- Lack of infrastructure, marketing & entrepreneurship in the field of NTFP sectors such as Lac, Bamboo handicrafts, Apiary, etc.
- Large number of unelectrified, partially electrified villages & unutilised tubewells & pumps for the want of electricity.
- Most areas are inaccessible for six months having no storage godown facilities for storing essential commodities like Foodgrains, Kerosene & NTFPs, etc
- Several Schools/ CDS centers still have no or dilapidated building.
- Most of the PHCs are in pathetic condition.
- Poor health related institutional delivery system.
- Very poor training facilities.
- Agriculture is the main occupation of most of the people in the district, which provides only seasonal employment to the population of the district. Income from agriculture does not meet their basic needs of life.
- Heavy dependence on forest for the livelihood but poor response of community towards its maintenance.
- OPPORTUNITIES
- Livelihood opportunities not yet exploited to the full.
- Availability of labour because of low employment opportunities.
- Village settlement pattern is scattered therefore rural connectivity is major area to be focused.
- District has a high potential for development of water resources.
- Government in the new, small state of Chhattisgarh holds Kanker and Dhamtari in the focus of development efforts.
- High movement of agricultural and forest produces out of the district in unprocessed form imply so much opportunities for activities relating to value addition.
- The new quest for organic food holds opportunities for Dhamtari and Kanker.
- Bamboo handicrafts, terracotta, bell metal, etc of these districts are winning market attention at the national and international levels.
- THREATS
- Naxalism especially in these districts which pose challenges to developmental activities.
- In absence of immediate welfare action- situation to worsen.
- Gap between rich and poor to widen if proper monitoring is not done.
- Issues relating to convergence of funds and efforts.
- Target oriented approach keeping in view the pressure of activities.

METHODOLOGY

Methodology adopted for the pre project assessment of present situation, formulation of project, implementation, evaluation, strategies and action plan has been dealt in this chapter. The collection of the required data for the afore mentioned was mainly done through two types-

1.

rimary Data Collection.

2.

econdary Data Collection.

Primary Data Collection – Primary data was collected from the concerned Government Organizations and the esteemed officials of the respective department. Subsequent to this the next targeted segment for gathering the information was JFMC members. Their response was collected through different tools viz PRA and direct interrogation through questionnaire. The community's response was positive for the project.

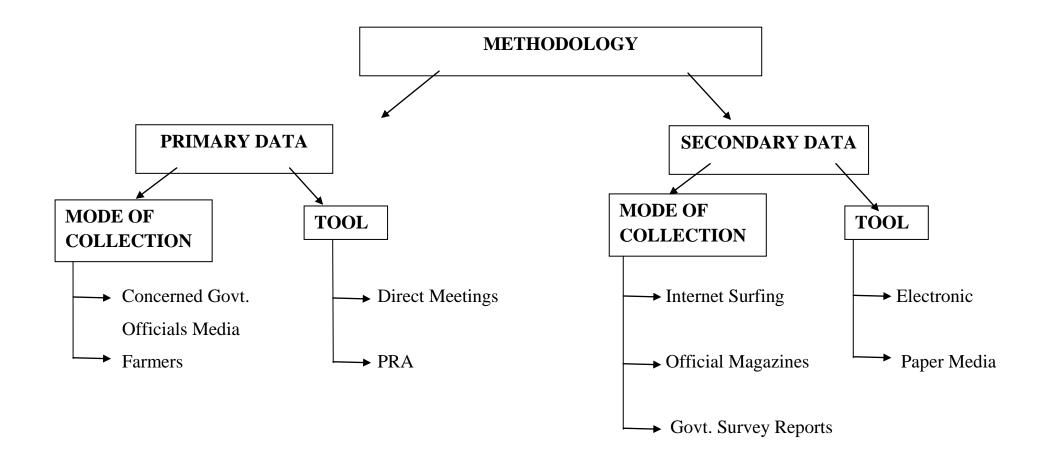
Also the data was collected through direct meetings and interaction with government officials and discussion over telephone. Internal training and brain storming session in GVT was done for imparting clear vision about the project to all the staff members related to this project.

Secondary Data Collection – Secondary data was collected through the official data published by Govt., their records and official web sites. Authentic official print media and paper media was also used for the collection of secondary data.

The main focus while collecting data was to sketch a closer diagram and have an in-depth view of the farmer for forest, its produces, incurred benefits from it, it's sustainability, maintenance and management. So that accordingly the plan can be strategized.

Р

S



Criteria for the area identification for the project

After series of meetings with the senior officials of forest department strategy for the development of plan was made. Initially the identification of project area was done. The geographical location in which the project has to be implemented was told by the department. The districts were also identified by the department. It was also decided that the proposed project will organize poor rural families of the identified districts/ Villages/JFMCs into Self Help Groups to enhance the synergy of agency and capabilities for developing secure livelihood opportunities. Cluster has to be made and JFMCs under those clusters would be taken as targeted unit for the project implementation.

The criteria for selection of the cluster was Miliwatershed Area having degraded forest and availability of fund in JFMC's Bank Account. The Miliwatershed areas where degradation was higher in percentage was taken in first priority. The areas where aforestation can be done along with activities of income generation fell into the category of cluster A. Apart from this as per the guidelines cluster B would be those JFMCs which are having considerable amount in their account. Some of the JFMCs which do not have minimum required amount can be taken along with these JFMCs, which has the considerable fund in their account as per their geographical location.

The project will motivate and train forest dwellers in a phased manner to facilitate the develop and implement plans to enhance productivity and carrying capacity of their forest, land and water resources ,diversify and intensify agriculture and adopt husbandry –oriented resource management practices imperative for sustainable use of resources.

The project will build and nurture a large pool of resource persons drawn from rural people to support and sustain the resource management system.

The proposed project would have an important demonstration effect on formulation of policies and creation of institutions in future.

Need assessment for the project

In the identified areas for the project the most important task was to draw the need of the community. Therefore RRA (Rapid Rural Appraisal was conducted) to understand the area, community and the existing scenario. Then in order to understand the specific needs of the community PRA was done. The demand derived from the community is mentioned village wise.

CHAPTER – II PHYSICAL WORK PROGRESS

Submission of Concept Note

After various communications, series of meetings on **18-11-2010** concept note of the project has been submitted to the Forest Department. This concept note dealt the preliminary aspects of the project viz, need of the project, project location, project plan, inception, financial outlay of the project and other physical & financial features.

All details of **meetings and liasoning** can be reviewed from **chapter III**.

Field Visit of Project location in Kanker and Dhamtari

After the series of meetings and discussions with **Dr. Anoop Bhalla, IFS, Ad. PCCF, Forest Department, Raipur (CG)** the project areas had been visited for the basic planning of the project inception.

On 3-12-2010 GVT, team Raipur, Er. Chinmai Panda, Mr. Prem Chand Sinha and Ms Naushaba Khan, Program Officers, GVT, Raipur visited villages Mathuradeeh and Janwargaaon, On 04-12-2010 GVT Kasawahi & Aroud, On 05-12-2010 Dangimacha, 06-12-2010 Khidkitola of Dhamtari.

On 11-12-2010 GVT, visited villages Geetpahar & Bhanpuri, On 13-12-2010 Aankhiharra & Vishrampuri Tumarkhurd On 14-12-2010 GVT Bhaisamundi and Talpi villages of Kanker.

Having done the survey and inspection the following needs has been identified -

In Kanker District –

S.No.	Activity	Unit
A.	Watershed Development	Stop dam (4)
		Bor well (1)

Village Name – Ankhi Harra Gram Panchayat – Ankhi Harra

		Plantation
		Pond Renovation
		Field Bunding (60 acres)
		New Pond construction
		Drainage Channels
		Construction of small pond
		(Dabri) (6)
В.	IGA Activity	Vermi Compost Unit
		Lac Cultivation
		Harra, Behara, Kachariya
		Processing unit
		Paira Kutti Machine
		Dona-pattal Machine
		Computer Training
		Silai Machine Training
		Pisci-culture
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	82
E .	Training and Exposure	30

Village Name – Kochwahi Gram Panchayat – Kochwahi

Sl.	Activity	Unit
No.		

A.	Watershed Development	Pond Construction
B.	IGA Activity	Vermi Compost Unit
		Murgi Palan
		Silai Machine Training
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	54
E.	Training and Exposure	30

Village Name – Karihapahar Gram Panchayat – Karihapahar

S.No.	Activity	Unit
A.	Watershed	Plantation
	Development	Drainage Channels
		Construction of small pond (Dabri)
В.	IGA Activity	Vermi Compost Unit
		Computer Training
		Silai Machine Training
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	19
Е.	Training and Exposure	30

Village Name – Bhansmudi Talpi

Sl. No.	Activity	Unit
A.	Watershed Development	Construction of small pond (Dabri)
B.	IGA Activity	Vermi Compost Unit Murgi Palan Silai Machine Training
С.	Wadi Development	10 Wadi (50,000 per Wadi)
D.	Energy Resources (Smokeless Chulha)	09
E.	Training and Exposure	20

Gram Panchayat – Bhansmudi Talpi

Village Name – Janwargaon Gram Panchayat – Janwargaon

S.No.	Activity	Unit
A.	Watershed Development	Chek Dam Renovation
	L L	Plantation
		Pond Renovation (2)
		Paddy Bunding Drainage Channels (2)
		Construction of small pond
		(Dabri)
В.	IGA Activity	Vermi Compost Unit
		Murgi Palan

		Computer Training
		Silai Machine Training
		Mobile Training
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	09
Е.	Training and Exposure	30

Village Name – Auroud (Lee) Gram Panchayat – Auroud (Lee)

S.No.	Activity	Unit
A.	Watershed	Plantation
	Development	Pond Renovation
		Pond Construction
В.	IGA Activity	Vermi Compost Unit
		Computer Training
		Silai Machine Training
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	08
Е.	Training and Exposure	30

Village Name – Mathuradih Gram Panchayat – Bhoyana

S.No.	Activity	Unit
A.	Watershed	Plantation
	Development	Pond Renovation (2)
		Drainage Channel Renovation
		LBS
В.	IGA Activity	Vermi Compost Unit
		Dona-pattal Machine
		Silai Machine Training
		Goatry
		Pisci Culture
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	04
Е.	Training and Exposure	30

In Dhamtari Village Name – Kasawahi Gram Panchayat – Tumrabahar

S.No.	Activity	Unit
A.	Watershed	Stop dam (4)
	Development	LBS
		Plantation
		Pond Renovation
		Field Bunding (60 acres)

		New Pond construction
		Drainage Channels
		Construction of small pond
		(Dabri)
В.	IGA Activity	Vermi Compost Unit
		Lac Cultivation
		Harra, Behara, Kachariya
		Processing unit
		Paira Kutti Machine
		Dona-pattal Machine
		Computer Training
		Silai Machine Training
		Pisci-culture
C.	Wadi Development	10 Wadi
D.	Energy Resources	82
	(Smokeless Chulha)	
Ε.	Training and	30
	Exposure	

Village Name – Khidkitola Gram Panchayat – Tumrabahar

S.No.	Activity	Unit
A.	Watershed Development	Pond Construction
B.	IGA Activity	Vermi Compost Unit Murgi Palan

		Silai Machine Training
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	54
Е.	Training and Exposure	30

Village Name – Vishrampur + Tumakhurda Gram Panchayat – Tumrabahar

S.No.	Activity	Unit
A.	Watershed Development	Plantation
	Development	Drainage Channels
		Construction of small pond
		(Dabri)
В.	IGA Activity	Vermi Compost Unit
		Computer Training
		Silai Machine Training
C.	Wadi Development	10 Wadi
D.	Energy Resources	19
	(Smokeless Chulha)	
Е.	Training and	30
	Exposure	

S.No.	Activity	Unit
A.	Watershed Development	Construction of small pond (Dabri)
B.	IGA Activity	Vermi Compost Unit
		Murgi Palan
		Silai Machine Training
С.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	09
Е.	Training and Exposure	20

Village Name – Dangimacha Gram Panchayat – Tumrabahar

Village Name – Janwargaon Gram Panchayat – Janwargaon

S.No.	Activity	Unit
A.	Watershed Development	Chek Dam Renovation Plantation
		Pond Renovation (2) Paddy Bunding
		Drainage Channels (2)
		Construction of small pond (Dabri)
В.	IGA Activity	Vermi Compost Unit

		Murgi Palan
		Computer Training
		Silai Machine Training
		Mobile Training
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	09
Е.	Training and Exposure	30

Village Name – Auroud (Lee) Gram Panchayat – Auroud (Lee)

S.No.	Activity	Unit
A.	Watershed Development	Plantation Pond Renovation Pond Construction
B.	IGA Activity	Vermi Compost Unit Computer Training
		Silai Machine Training
С.	Wadi Development	10
D.	Energy Resources (Smokeless Chulha)	08
Е.	Training and Exposure	30

Village Name – Mathuradih Gram Panchayat – Bhoyana

S.No.	Activity	Unit
A.	Watershed	Plantation
	Development	Pond Renovation (2)
		Drainage Channel Renovation
		LBS
В.	IGA Activity	Vermi Compost Unit
		Dona-pattal Machine
		Silai Machine Training
		Goatry
		Pisci Culture
C.	Wadi Development	10 Wadi
D.	Energy Resources (Smokeless Chulha)	04
Е.	Training and Exposure	30

Photographs taken during the Watershed area selection process



GVT team in the site of Pond renovation in village Dangimacha, Dhamtari, (CG)



GVT team taking measurement of the site Khidkitola, Dhamtari, (CG)



GVT team discussing the need of Village with community in Kaswahi, Dhamtari, (CG)

Submission of Vision Plan

After the visit to the villages for the understanding of all grass root level realities on 16-12-10 vision plan of seven villages of district Dhamtari and Kanker has been submitted to Forest Department Raipur, CG for approval. These all seven villages were supposed to be taken in the Financial Year 2011-12.

The vision plan can be reviewed from Annexure – VII.

After submission of this vision plan some amendment has been done in the financial outlay of the project. Some activities viz. Scrab Animal Management has been incorporated.

This activity is mainly focused on reducing the number of scab animal which are destructing the forest by illegal grazing. The main problem which was found was that though villagers don't use some animal neither they help them monitory or non monitory but as a social status symbol they keep them and feed them by forest. Which are ultimately leads to damage to the forest.

To prevent this the concept of **Live Stock Management** has been incorporated in the project. In this the nodal agency will follow the barter system. The villager will give their scrab animal and for which they will get a hybrid verity species in return. By this not only the number of unwanted animal will get reduced but also by hybrid verity the poor villager will get some monitory benefits. Apart from this **Rabitary unit** and **Azolla Unit** are also part of the **Live Stock Management**. By which the level of income will get increased.

On 21-01-11 Dr. Anoop Bhalla, IFS, Ad. PCCF, Forest Department, Raipur (CG) has been given a letter for releasing the first installment of Alt. IGA project.

Alt. IGA project of Dhamtari and Kanker district has been approved by Forest Department, Raipur, (CG). On **21-01-11** the sanction letter had given to GVT, Raipur in which details of project cost which would be used in the next financial year was asked to be submitted.

Consequent to this on the same day the afore mentioned letter had been submitted to Forest department for further proceedings.

Interview Conducted for Horticulture Specialist for Wadi Project on 24-12-10 in Indira Gandhi Krishi Vishwavidyalaya, Raipur,(CG)

On 24-12-10 interview was conducted for Horticulture Specialist for Wadi project of Charama. The recruitment procedure held in Indira Gandhi Krishi Vishwavidyalya, Raipur, (CG).



Mr. G S Tomar, Associate Professor & Coordinator Training and Placement Office, Collage of Agriculture (IGKV) Raipur, (CG), and Mr. G V Prasad, Coordinator Training and Placement Office, Collage of Agriculture (IGKV), Raipur, (CG)going through the recruitment process of GVT with Mr. Vijay Bhushan, RPM, GVT, Raipur (CG).



Candidates giving interview in Indira Gandhi Krishi Vishwavidyalya, Raipur, (CG)

SWC/WRD Work

Forest Department emphasizing for showing the results of the watershed in the 2011 Rainy season. For which along with the Income Generating Activities, Watershed is in the top priority. For this watershed work field visit in the Dhamtari and Kanker Districts of the Chhattisgarh State has been taken place. The villages visited were Jawargaon, Mathuradiha, Araudha, Khidkitola, Dangimacha, Kasawahi, Tumarkhurd in Dhamatri District and in Kanker Geetpahar, Jepra, Bhanpuri, Ankhiharra, Kochwahi, Mudhhowa, Kishanpuri, Jhariyamri and Kilepar.

In these villages the forest land and the revenue lands were visited. In which the work from the ridge to the valley portion has been adopted. Treating each possible areas, by loose boulders, gabion structures, percolation tank, check dams, stop dams, anicuts, ponds, earthen dam, tube wells, wells, plantation of the forest plants in the barren lands, field bunding.

Beside this meeting in the villages has been taken for those farmers are interested in doing the activities like nursery, Wadis ,Lac. During this work Mr Santosh, Sr. Program Manager, GVT, Ratlam, (M.P.) was also being with us for the guidance in the proper selection of the work, and there a meeting was held in Forest on 9th December 2010. In which all technical aspects has been delt specially for Watershed activities.

CHAPTER – III MEETINGS WITH GOVERNMENT OFFICIAL

Meetings for the Formulation and Implementation of the Project

Meeting held with Dr. Anoop Bhalla, IFS, Add. PCCF, Raipur, (CG)

In the month of October a meeting was held with Dr. Anoop Bhalla, IFS, Add. PCCF and Mr Vijay Bhushan, RPM, GVT along with the team members.

The project was discussed within the frame of following points -

- Watershed Development
- Wadi
- Distribution of Energy Resources
- Income Generating Activities/ Micro Enterprises
- Mechanized Cultivation/ Power Tiller

Watershed Development

The basic motive for the implementation of watershed development is water recharge, water harvesting and irrigation. The prime concern is to increase in ground water recharge by making structures of watershed.

Wadi

In every JFMC there should be 10 wadis. The JFMCs allotted to us is 17 so we have to cover 170 wadis within 5 years.iber Sheet and some solar apratus are planned to be given to the villagers.

Income Generating Activities

Need based and resource based income generating activities like in Dhamtari area Fishery and in Charama, Bamboo articles has came into the picture after interaction with villagers.

Meeting held with Dr. Anoop Bhalla, IFS, Add. PCCF, Raipur, (CG)

To have an interaction with our new CEO sir, Mr. Sunil Chander Shrama, IRS, CEO, GVT, Noida, (UP) a meeting was held on 9-11-2010 in Forest Department Raipur, Aranya Bhawan, Raipur, (CG).

In the meeting Mr. Sunil Chander Sharma met Dr. Anoop Bhalla, Ad. PCCF, Raipur, (CG).

In the meeting Watershed areas of Chhattisgarh was discussed with the point of view of Alt. IGA project.

Meeting held with Dr. Anoop Bhalla, IFS, Add. PCCF, Raipur, (CG)

On 29-12-10 meeting held with Dr. Anoop Bhalla, IFS, Add. PCCF, Raipur, (CG) and Mr. Vijay Bhushan, RPM, GVT, Raipur (CG) along with team members Ms Chinmai Panda and Ms. Naushaba Khan PO, GVT, Raipur (CG).

At the time of meeting the sanctioned budget was **Rs. 90,00,000** for first year but later on the amount was changed. In meeting Mr. Bhalla asked us to break the total number of families into clusters. Which will be targeted in the consecutive financial years.

On 08-02-2011 a meeting was held in Forest Department, Raipur with Dr. Anoop Bhalla, IFS, Ad. PCCF and Mr Vijay Bhushan, RPM, GVT, Raipur. In the meeting various issues related to the project has been discussed.

Meeting held with Mr. Narendra Pandey, IFS, DFO, Dhamtari, (CG)

On 17-02-2010 a meeting was held in Forest Department, Dhamtari with Mr. Narendra Pandey, IFS, DFO, Dhamtari and Ms Naushaba Khan, PO, GVT and team for the ToR of MoU of the project. There also we have got an interaction with Mr. A. K. Sharma, SDO, Dhamtari.

Presentation in Forest Department, Kanker, (CG)

On 22-02-2010 the presentation was held in front of Mr. V. Rama Rao, CF, Kanker, Mr. J. R. Nayak, IFS, DFO, Kanker along with the other nodal agencies. The presentation was about the action plan of the implementation of the project. Ms. Naushaba Khan, Er. Chinmai Panda & Mr Mukesh Kumar were the representative of GVT.

Meeting held with Mr. Manoj Kashyap, Tech. Asst., Forest Dept., Raipur, (CG)

On 26-02-2010 a meeting was held in Forest Department, Raipur with Mr Manoj Kumar Kashyap, Technical Assit., Forest Department Raipur and Ms Naushaba Khan, PO, GVT, Raipur for MoU of the project.

Meeting held with Mr. Sunil Mishra, CF, Raipur, (CG)

On **01-03-2011** a meeting was held in Forest Department, Raipur with **Mr Sunil Mishra, IFS, CF, Raipur, (CG)** and **Ms Naushaba Khan, PO, GVT, Raipur**. In the meeting some issues regarding the utilization of allotted budget judicially within the timeline was discussed. **Mr. Sunil Mishra** has been given his valuable suggestion related to the implementation for the betterment of the project.

Meeting held with Mr Narendra Pandey, IFS, DFO, Dhamtari and Mr J. R. Nayak, IFS, DFO, Kanker for signing the MoU

On **25-03-2011** MoU for both the districts has been signed by the nodal agency and the concerned DFOs. Then the cheque of the first installment has been released to the nodal agency.

Meeting held with Mr. Manoj Kashyap, Tech. Asst., Forest Department, Raipur

On 21-04-2010 meeting was held with Mr. Manoj Kashyap, Tech. Asst., Forest Department, Raipur, Ms Naushaba Khan and Er. Chinamai Panda for quoting the amount for SWC/WRD work as per Schedule of Rate. He said that this issue should first get discussed with the concerned DFOs and then to him. All communications should come via DFOs.

CHAPTER – IV MILE STONES

- Submission of Concept Note on 18-11-2011 at Forest Department, Raipur, (CG).
- Submission of Vision Plan on 16-12-2011 at Forest Department, Raipur, (CG).
- Presentation on 22-02-11 at Forest Office, Kanker, (CG).
- Signing of MoU on 25-03-11.

Annexure – I

Action Plan for April Activity for Dhamtari District

	Alt IGA - Time Line for April & May - 2011, Dist Dhamtari				
Date	Day	Activity	Name of the Villages to be Covered	Place of visit	
27.4.1 2	Wednesd ay	PRA	Janwargaon & Aroud	Janwarga on & Aroud	
27.4.1 1	Wednesd ay	Exposure of Bio Briquette Machine	Jawargaon, Aroud, Mathuradih, Kasawahi, Vishrampur, Khidkitola & Dangimacha	Forest Departme nt, Bendra Navagaon , DMT	
28.4.1 2	Thursday	PRA	Kasawahi & Vishrampur	Kasawahi & Vishramp ur	
28.4.1 1	Thursday	Wadi Exposure	Jawargaon, Aroud, Mathuradih, Kasawahi, Vishrampur, Khidkitola & Dangimacha	Kilepar, Gitpahar & Pandripan i	
28.4.1 1	Thursday	Layout in Wadi	Aroud		
29.4.1 2	Friday	PRA	Khidkitola & Dangimacha	Khidkitol a & Dangimac ha	
28.4.1 1	Thursday	Pit digging in Wadis along with Distributi on of high Milching Cow			
29.4.1	Friday	Layout in	Kasawahi		

1		Wadi			
30.4.1 1	Saturday	PRA	Mathuradih	Mathuradi h	Ms Nausha ba Khan
01- 05.11	Monday	Layout in Wadi	Janwargaon		
02- 05.11	Tuesday	Agricultu re Practices Exposure	KVK, Dhamtari	KVK, Dhamtari	
2nd & 3rd Week of May		Pit digging along with CPT	Janwargao ,Aroud & Kasawahi		
3rd Week of May		Distributi on of High Milching Cow	Janwargao & Aroud		

Action Plan for April Activity for Dhamtari District

	Alt IGA - Time Line for April - 2011, Dist Kanker				
Date	Day	Activity	Name of the Villages to be Covered	Place of visit	
27.4.11	Wednesday	Exposure of Bio Briquette Machine	Jepra, Geetpahar, Bhanpuri, Kishanpuri, Ankhiharra, Kochwahi, Kariyapahar & Muddhowa	Forest Department, Bendra Navagaon, DMT	
28.4.11	Thursday	Wadi Exposure	Geetpahar, Jepra Bhanpuri, Jhariyamari, Bhainsmundi, Kariyapahar , Muddhowa, Kishanpuri, Ankhiharra and Kochwahi	Kilepar, Gitpahar & Pandripani	
29.4.11	Friday				
30.4.11	Saturday	Layout	Kishanpuri		
1.5.11	Monday				

2.5.11	Tuesday	PRA	Geetpahar & Jepra	
3.5.11	Friday	PRA	Bhainsmundi & Jhariyamari	
3.5.11	Wednesday	Agriculture Practices Exposure	Geetpahar, Jepra Bhanpuri, Jhariyamari, Bhainsmundi, Kariyapahar , Muddhowa, Kishanpuri, Ankhiharra and Kochwahi	KVK, Kanker
4.5.10	Saturday	PRA	Kariyapahar & Muddhowa	
6.5.10	Monday	PRA	Bhanpuri & Kochwahi	
7.5.10	Monday	PRA	Ankhiharra & Karihapahar	
1st Week of May		Layout	Ankhiharra	
2nd & 3rd Week of May		Pit digging along with CPT	Khidkitola & Dangimacha	
3rd Week of May		Distribution of High Milching Cow	Khidkitola & Dangimacha	

Annexure – II

Specimen copy of Microplan

¥ŠØæØv

ÂýSÌæßÙæ

(Ⱦjß·¤æ §çÌãUæâ, â¢SÍæØð' °ß¢ Üô»ô' ·ð¤ çß¿æÚU, àææâ·¤èØ ØôÁÙæØð', ¥æç¼)

v.v Ⱦjß •¤æ §çlãUæâ

Øã »ýæx ------ ŽÜæð·¤ ------- âð ------ ç·¤.xè. ·¤è ¼êÚUè ÂÚU çSÎÎ ãñUĐ ------ ŽÜæð·¤ ×ð' -------- ¢¿æØÌð ãñ'U, çÁâ×ð' âð °·¤ »ýæx ------ ãñUĐ §â·¤æ â¢â¼èØ ÿæð æ -----, ç·¤.xè. Ìĺæ çßïæÙ
âÖæ ÿæð æ ------ U, ------ ç·¤.xè. ãñUĐ »ýæx ------ 𤠩U¹ÌÚU ×ð' ------, ¼çÿæ‡æ ×ð' ------, Âêßü
×ð' ------, Âçà¿× ×ð' ------, çSÎÌ ãñUĐ

ŽÜæò·¤ ×ð' »ýæ× ----- ·¤æØü ØôÁÙæ ÕÙæÙð ãðUÌć ¿ØçÙÌ ãňUĐ ØãUæ;
¥æ¢»ÙŐæÇ,Uè Ĭĺæ Áýæĺç×·¤ àææÜæ ãñU, ©U"æÌÚU ׿ŠØç×·¤ çàæÿææ ãðUÌć ----- ÁæÌð ãñ'U °ß¢
©U"æ çàæÿææ ·ð¤ çܰ ÀUæ æ-ÀUæ ææ¥ô¢ ·¤ô------ ÁæÙæ ÂÇ,UÌæ ãñUĐ ¼êâÚUè ÁL¤ÚUè â¢SĺæØð'
Áñâð- ·ë¤çá ©UÂÁ ×¢ÇUè ------ ×ð' çSÎÌ ãñU, âãU·¤æÚUè Õñ'·¤ ------ ßÙ ÂçÚUÿæð æ ·¤æØæüÜØ ----- ç·¤.xè. ÂÚU ãñU Ĭĺæ ¼ñçÙ·¤ ÁèßÙ ×ð' ©UÂØô» ×ð' ¥æÙð ßæÜð âÚU·¤æÚUè çßÖæ» ·ð¤
·¤æØæüÜØ »æçß âð ----- ç·¤.xè. ¼êÚU ----- ×ð' çSÎÌ ãñUĐ »ýæ× ----- âð ŽÜæò·¤ -----, ---ç·¤.xè. ·¤è ¼êÚUè ÂÚU çSÎÌ ãñU Ĭĺæ -----, ---- ç·¤.xè. ·¤"æð °ß¢ €·ð¤ ׿»ôZ âð ÁéÇ,Uæ ãéU¥æ
ãñUĐ

»ýæ×ßæçâØô′ Ùð Âýæ·ë¤çÌ·¤ ╼æ ·¤æ âãUè ÌõÚU âð ©UÂØô» ·¤ÚUÙð ×ð′ ¥â×ÍüÌæ ÁÌæ§ü ãñU €Øô′ç·¤ ©U‹ãð′U ©Uâ·¤è Âê‡æü ÁæÙ·¤æÚUè ÙãUè′ ãñUĐ àææâÙ ·¤è ÁÙ ·¤ËØæ‡æ·¤æÚUè ØôÁÙæ¥ô¢ ·¤è ÁæÙ·¤æÚUè ¥æ× ÁÙÌæ Ì·¤ ÙãUè Âãé¡U¿ ÂæÌè ãñU, âæÍ ãUè ©Uâ·¤æ ÜæÖ ÜðÙð ·ð¤ çÜØð Ü•Õè àææâ·¤èØ Âýç·ý¤Øæ¥ô¢ âð ãUô·¤ÚU »éÁÚUÙæ ÂÇ,UÌæ ãñUĐ àææâ·¤èØ ØôÁÙæ¥ô¢ ×ð′ Şç<¼ÚUæ ¥æßæâ ØôÁÙæ, S߇æü ÁØ¢Ìè »ýæ× SßÚUôÁ»æÚU ØôÁÙæ, ßë¼÷ÏæßSÍæ Âð‹àæÙ ØôÁÙæ, ÂýâêÌè ·¤ËØæ‡æ·¤æÚUè ØôÁÙæ, çßïßæ Âð‹àæÙ ØôÁÙæ, ç·¤âæÙ ·ýð¤çÇUÅU ·¤æÇUü, ¥æç¼ ØôÁÙæ°¡ ãñUĐ

v.w. â¢SĺæØð´ °ß¢ Üô»ô´ ·ð¤ çß¿æÚU

jÂælè ç¿æ‡æ ¼+βæÚUæ çβçÖıÙ â¢Sĺæ¥ô¢ âð »æjß ßæÜô' ·ð¤ â¢Ö¢lô' °ß¢ ©UÙ ð¤ ÁýÖæß ·ð¤ ÖæÚÔU ×ð' ÁæÙ·¤ÚUè ÁýæŒl ·¤è »§ü çÁâ·¤æ ØãUæ; çßßÚU‡æ ç¼Øæ »Øæ ãñUĐ §â ¿Âælè ç¿ æ‡æ ×ð' ßë'lô' ·¤æ ¥æ·¤æÚU ×ãU'ß ·ð¤ ¥ælæÚU ÂÚU ÕÙæØæ »Øæ ãñUĐ çÁÙ â¢Sĺæ¥ô¢ ·¤ô ¥çl·¤ ×ãU'ß ç¼Øæ Áælæ ãñU ©Uâð ØãUæ; ÁÚU ÕÇ,ðU ¥æ·¤æÚU ·ð¤ ßë'l ¼+ßæÚUæ ¼àææüØæ »Øæ ãñUĐ »ýæ×è‡æô' Ùð âÔâð ¥çl·¤ ×ãU'ß ç¼Øæ ãñU ×ãUæçß¼+ØæÜØ, Áýælç×·¤ SßS‰Ø ·ð¤·lý, ßÙ çßÖæ», ·ë¤çá ©UÂÁ ×¢ÇUè, Áýælç×·¤ çß¼+ØæÜØ, ãUæØÚU âð·ÇUÚUè S·ê¤Ü °ß¢ ÕÁæÚU ·¤ôĐ §â·ð¤ Ōæ¼ ÂÁUßæÚUè ×¢ÇUÜ, Á¢¿æØl ×é**a** ØæÜØ, ç×çÇUÜ S·ê¤Ü, çß¼+Øêl ×¢ÇUÜ, Âàæé ç¿ç·¤ʿâæÜØ, ÅðUÜèȤôÙ âéçßlæ, çßlæù âÖæ ÿæð æ ·¤ô ×ãU'ß ç¼Øæ »Øæ ãñUĐ ¥Ø â¢Slæ¥ô¢ ·¤ô §Ù·ð¤ ×ãU'ß ·ð¤ ¥æïæÚU ÁÚU Ÿæð‡æèë¤l ç·¤Øæ ãñU Áñáð- Öâ SÅðU‡ÇU, ÚÔUËßð SÅðUàæù, Áéçüâ ſæùæ, ßù ׇÇUÜæçl·¤æÚUe, ÇUæ·¤fæÚU, ßÙ ÂçÚUÿæð æ, lãUâèÜ ·¤æØæüÜØ, â¢â¼èØ ÿæð æ, ¥æç¼ ·¤ô ¥Ø â¢Sſæ¥ô¢ ·¤è ¥Âðÿææ ·¤× ×ãU'ß ç¼Øæ »Øæ ãñUĐ

 $;\hat{A}$ ælè ç; \tilde{a} \hat{A} ëcÆU $\cdot \dot{y}$ ¤. x × $\tilde{\partial}$ \hat{a} ¢ \ddot{U} XÙ \tilde{a} ñUĐ

ÌæçÜ•¤æ	·ý¢¤.v	- â¢Sĺæ°;
100000	J	40100

·ý¤×梕¤	â¢SÍæ	â¢•Øæ	SĺæÙ	1⁄4êÚUè (畤.×è. ×ð′)
1	çÁܿШÿæ ·¤æØæüÜØ			
2	ßÙ ×¢ÇUÜ ¥çæÚUè			
3	ÌãUâèÜ ·¤æØæüÜØ			
4	â¢â¼èØÿæð~æ			
5	çßÏæÙ âÖæ ÿæð~æ			
6	ßÙ ÂçÚUÿæð~æ			

	·¤æØæüÜØ	
7	çß¼÷ØéÌ•¤æØæüÜØ	
8	ÂéçÜâ ĺæÙæ	
10	Õâ SÅñU‡ÇU	
11	ÇUæ·¤fæÚU	
12	Âýæĺç×·¤ SßæS‱Ø ·ð¤‹Îý	
13	Âàæé ç¿ç·¤^âæÜØ	
14	·ë¤çá ©UÂÁ ×¢ÇUè	
15	çß·¤æâ ¹‡ÇU	
16	ÕÁæÚU ·¤æ SÍæÙ °ß¢ ç¼Ù	
17	»ýæ× ¢¿æØÌ ×镨æÜØ	
18	ÕæÜßæÇ,Uè	
19	¥æ¢»ÙßæÇ,Uè	
20	Âýæĺç×·¤ çß¼÷ØæÜØ	
21	׿Шç×·¤ çß¼÷ØæÜØ	
22	©"æÌÚU ׿Шç×·¤	
	çß¼÷ØæÜØ	
23	×ãUæçß¼÷ØæÜØ	
24	¼êÚUÖæá ∙ð¤‹Îý	
25	Õñ′∙¤	

Ⱦjß ∙¤æ ÙÁÚUè Ù€àææ

$$\label{eq:constraint} \begin{split} & \hat{f}_{x}(\hat{U}) = \hat{f}_{x}(\hat{U}) + \hat{f}_{x}(\hat{U$$

.ý¤xæ¢.¤	¼	Ùæ×
1.	âæ¢â¼	
2.	çßÏæØ·¤	
3.	çÁÜæ ¢;æØÌ ¥ŠØÿæ	
4.	çÁÜæ∙¤Üð€ÅUÚU	
5.	×镨 ·¤æØüÂæÜÙ ¥çÏ·¤æÚUè, ÁÙ¼	
	¢¿æØÌ	
6.	ÌãUâèÜ ·¤æØæüÜØ / ÌãUâèܼæÚU	
7.	Âàæé ç¿ç·¤^âæ ¥çÏ·¤æÚUè	
8.	DFO	
9.	ÚÔ′UÁÚU	
10.	çÇUŒÅUè ÚÔ′UÁÚU	
11.	ÕèÅU »æÇüU	
12.	SDO	

v.x ¥æßæ»×Ù

»ýæ× ·¤è âÇ,U·ð¤ ×é**1** ØÌÑ ·¤"æè ãñ′UĐ ÇUæ×ÚUU °ß¢ ·¤æ¢·ý¤èÅU âÇ,U·ð¤ ÙãUè′ ãñUĐ ȍÜØô′ ·ð¤ ·¤æ¢·ý¤èÅUè·¤ÚU‡æ ·¤è ¥æßàØ·¤Ìæ ãñUĐ ×镨 â×SØæ ÂæÆUàææÜæ ÁæÙð ßæÜè âÇ,U·¤ ×ð′ ¥æßæ»×Ù ·¤è ãñU, âÇ,U·ð′¤ ·¤"æè ãñ′UU çÁââð ÀUæ~æ-ÀUæ~ææ¥ô¢ ·ð¤ ¼éfæüÅUÙæ»ýSÌ ãUôÙð ·¤è â¢ÖæßÙæ ÕÙè ÚUãUÌè ãñUĐ

ÌæçÜ·¤æ ·ý¢¤. x - âÇ,U·¤ ×a	eȟ
-----------------------------	----

âÇ,U·¤ ·ð¤ Âý·¤æÚU	âÇ,U∙¤ ∙¤è ∙é¤Ü Ü●Õæ§ü (畤×è.)
ÇUæ×ÚU âÇ,U·¤	
·¤æ¢·ý¤èÅU âÇ,U·¤	
xéL¤x âÇ,U·¤	

·¤"æè âÇ U·¤

v.y. àzzaî. Ed ØôÁÙzz¥ô¢ . Ed Áz Ú. Ez ÚUd °S¢ ©UÙâð ÜzÖ

v.y.v. àxxa·xed ØôÁÙ x° ; çÙ•Ù Âý·xaUU ãñU

v. §¢ç¼ÚUæ ¥æßæâ ØôÁÙæ, w. S߇æü ÁØ¢Ìè »ýæ× SßÚUôÁ»æÚU, x. ßë¼÷ÏæßSÍæ Âð′àæÙ
ØôÁÙæ, y, çßïßæ Âð′àæÙ ØôÁÙæ,
z. ÂýâêÌè ·¤ËØæ‡æ·¤æÚUè ØôÁÙæ, {. ç·¤âæÙ ·ýð¤çÇUÅU ·¤æÇüU ØôÁÙæ §^Øæç¼Ð (Áô ØôÁÙæØð′
¿Ü ÚUãUè ãñU ©UÙ ÂÚU âãUè ·¤æ ç¿ ‹ãU Ü»æ ¼ð′ Ĭíæ ¥‹Ø ØôÁÙæ¥ô¢ ·¤ô Ùè¿ð çܹð′Đ)

ç·¤ÌÙð ÂýçÌàæÌ ÂçÚUßæÚU ØôÁÙæ¥ô¢ âð ÜæÖæçsSÌ ãñ´U-

àææâù ·¤è Áù ·¤ËØæ‡æ·¤æÚUè ØôÁùæ¥ô¢ ·¤è Áæù·¤æÚUè ¥æ× ÁùÌæ Ì·¤ ùãUè Âãé¡U; ÂæÌè ãñU, âæÍ ãUè ©Uâ·¤æ ÜæÖ ÜðÙð ·ð¤ çÜØð Ü•Õè àææâ·¤èØ Âýç·ý¤Øæ¥ô¢ âð ãUô·¤ÚU »éÁÚUùæ ÂÇ,UÌæ ãñUĐ àææâ·¤èØ ØôÁùæ¥ô¢ °S¢ Âýç·ý¤Øæ ·¤è Áæù·¤æÚUè Âý¼æù ·¤ÚUùð ·ð¤ çÜØð »ýæ× ¢¿æØÌ ·ð¤ °·¤ âç·ý¤Ø çàæçÿæÌ â¼SØ ·¤ô ·¤æØüàææÜæ ·ð¤ ׿ŠØ× âð ÂýçàæçÿæÌ ç·¤Øð ÁæÙð ·¤è ¥æßàØ·¤Ìæ ãñUĐ

v.z. çß¼+ØéÌ ·¤Ùð€àæÙ ·¤è ÁæÙ·¤æÚUè

·é¤ÜfæÚUô′ ×ð′ çß¼÷ØéÌ ·¤Ùð€àæÙ ãñU, çÁâ×ð′ ·¤èfæÚUô′ ×ð′ °·¤Õ^Ìè ·¤Ùð€àæÙ ãñU ľĺæ fæÚUô′ ×ð′ ÜæÜÅðUÙ ÁÜæÌð ãñUÐ »ýæ× ×ð′ ©UÙ fæÚUô′ ×ð′ ÁãUæ; çß¼÷ØéÌ ·¤è âéçßÏæ ÙãUè ãñU ·¤æ çß¼÷ØéÌè·¤ÚU‡æ ç·¤Øæ ÁæÙæ ¿æçãU°Đ

·é¤ÜƒæÚUô′ ·¤è â¢●Øæ çÁâ×ð′	·é¤ÜƒæÚUô′ ·¤è â¢●Øæ çÁâ×ð′	·é¤ÜƒæÚUô′ ∙¤è â¢●Øæ çÁâ×ð′
çß¼÷ØéÌ ∙¤Ùð€àæÙ	°∙¤Õ'Ìè∙¤Ùð€àæÙ	ÜæÜÅðUÙ ÁÜæÌð ãñ U

¥ŠØæØw

»ý $x \times \hat{A}_{\xi} = \hat{x} \otimes \hat{A}_{\xi} = \hat{x} \otimes \hat{A}_{\xi} \otimes$

Şâ ßù ÂçÚUÿæðæ xð' ¿Øçùì »ýæx ------ çÁâxð' ------ ÂçÚUßæÚU çùßæâ ·¤ÚUÌð ãñ'UÐ SÙxð' ------ ÂçÚUßæÚU Õè.Âè.°Ü. Ÿæð‡æè xð' ¥æÌð ãñ'UÐ SÙ ÂçÚUßæÚUô' ·¤è ·é¤Ü Á¢Ù⢕Øæ ------ ãñUÐ Sâ »ýæx xð' ÂéL¤áô' ·¤è ⢕Øæ ------ ãñU çÁùxð' ------ ÂéL¤á çàæçÿæÌ ãñU °ß¢ çÁâ·¤æ ÂýçÌàæÌ ·é¤Ü ÁÙ⢕Øæ ·¤æ ------ ÂýçÌàæÌ ãñU ÌÍæ xçãUÜæ¥ô¢ ·¤è ⢕Øæ ------ ãñU çÁÙxð' ------ xçãUÜæØð' çàæçÿæÌ ãñU¢ °ß¢ çÁâ·¤æ ÂýçÌàæÌ ·é¤Ü ÁÙ⢕Øæ ·¤æ ------ ÂýçÌàæÌ ãñUĐ Şâ »ýæx xð' ¥Ùéâêç¿Ì ÁÙÁæçÌ ᯁ ·¤è ·é¤Ü ÁÙ⢕Øæ ------ ãñU, ¥Ùéâêç¿Ì ÁæçÌ ·¤è ÁÙ⢕Øæ ------ ãñU, âæ×æ<Ø ß»ü ÁÙ⢕Øæ ------ °ß¢ çÂÀUÇ,Uæ ß»ü ·¤è ÁÙ⢕Øæ ------ ãñUĐ

çß.¤æâ¹‡ÇU Ñ

çÁÜæ Ñ

```
»ýæ× ¢;æØÌ â¼SØô′ ∙¤è â¢●Øæ -
```

»ýæ× ¢;æØÌ ·¤æ ·¤æØü·¤æÜÑ

»ýæ× ¢;æØÌ â¼SØô′ ·ð¤ Ùæ× -

v. âÚU¢¿ Ñ

w. ©U âÚU¢¿ Ñ

x. âç;ß Ñ

- y. ¢; Ñ
- z. ¢; Ñ
- {. ¢ż Ñ

|. ¢; Ñ

§â »ýæ× ¢¿æØÌ ·¤æ SWOT çßàÜðá‡æ §â Âý·¤æÚU ãñUĐ

($e^{iz}A \partial x = OU_{c_1}A x^{i_1} = x^{i_1} + i^{i_2} x^{i_1} + i^{i_2} x^{i_1} = x^{i_1} + i^{i_2} x^{i_1} + i^{i_1} x^{i_1} + i^{i_2} x^{i_1} + i^{i_1} x^{i_1} + i^{i_2} x$

âÕÜ Âÿæ Ñ

- â×èÿææ ·ð¤ ¥¢Ì»üÌ ØãU çßç¼Ì ãéU¥æ ç·¤ ØãUæ¡ ·¤æ â×鼿Ø ·¤ÌüÃØçÙcÆU ãñU Ìĺæ ×æÙßèØ
 â¢âæÏÙ ¥'ÀðU ãñU¢Đ
- ØãU ÿæð æ Âýæ e¤çl·¤ â¢Â¼æ âð ÖÚUÂêÚU ãñU S¢ ©UÂÁ檤 ç×Å÷UÅUè ·¤è ©UÂÜŽÏlæ ãñUĐ
- »ýæ×è‡æ Áæ»M¤·¤ ãñU Ìĺæ »ýæ×ô'ĺæÙ ×ð' âç·ý¤Ø ãñUĐ
- ·é¤Ü ÁÙ⢕Øæ ·¤æ -----% çàæçÿæÌ ãñUĐ
- »ýæ× ¢¿æØÌ ×ð′ ×çãUÜæ¥ô¢ ·¤è Öæ»è¼æÚUè ÕÚUæÕÚUè âð ãñUĐ
- •
- •

¥ßâÚU Ñ

- çß·¤æâ ·¤æØôZ ·ð¤ ¥'ÀðU ¥ßâÚU ãñ'U Áñâð ßëÿææÚUô‡æ, ÙØð ÌæÜæÕ ·¤æ çÙ׿ü‡æ °ß¢
 ȋUÚUè·¤ÚU‡æ, ¥æç¼Đ
- ¥æØ ¥ÁüÙ »çlçßçlØô′ ·¤æ â¢;æÜÙ ãUôÙð ÂÚU ¼ôãUÚUè ȤâÜ ·¤æ ÜæÖ çÜØæ Áæ â·¤læ ãñUĐ
- Õñ'·¤ô' âð ÁéÇ, Uæß ·¤ÚU çß·¤æâ ·ð¤ ÙØð ׿»ü ¹ôÜð Áæ â·¤Ìð ãñ'UĐ
- Âàæé ÂæÜÙ °ß¢ ×ÀUÜè ÂæÜÙ ·ð¤ ¥'ÀðU ¥ßâÚU ãñUĐ
- çßçÖ<Ù Âýçàæÿæ‡æô' ¼÷ßæÚUæ Üô»ô' ·¤ô ¥çÌçÚU€Ì ¥æØ ç¼Üßæ§ü Áæ â·¤Ìè ãñUĐ
- Üô» çàæçÿæÌ ãñ'U çÁâ·ð¤ ·¤æÚU‡æ ©U<ãð'U ÂýðçÚUÌ ·¤ÚUÙæ ¥æâæÙ ãñUĐ

- Áð.°È¤.°×.âè. ·¤æ ÂýÕ¢ÏÙ âé;æL¤Ìæ ×ð′ âéÏæÚU ·¤è ¥æßàØ·¤Ìæ ãñUĐ
- ¥æÙð ßæÜð âר ×ð' ãUôÙð ßæÜð çß·¤æâ ãðUÌé ÁÙÖæ»è¼æÚUè °ß¢ »ýæ×è‡æô' ·¤æ ©U^âæãU

âÚUæãUÙèØ ãñUĐ

•	
•	
•	
•	

çÙÕüÜ ÂÿæÑ

- ØôÁÙæ ·¤æ ç·ý¤ØæßØÙ ÆUè·¤ É¢U» âð ÙãUè' ãéU¥æĐ
- ç¿ç·¤^âæ ·¤è â×éç¿Ì ÃØßSÍæ ÙãUè ãñUĐ
- ãUæØÚU â𷤇ÇUÚUè S·ê¤Ü ÙãUè ãUôÙð âð տܷ¤-ÕæçÜ·¤æ ©U"æ çàæÿææ âð ߢç¿Ì ãUô ÁæÌð ãñUĐ
- •
- •

Áôç¹× Ñ

•

ÕÁæÚU ÃØßSÍæ ·¤×ÁôÚU, â×鼿Ø ×ð′ °·¤ÁéÅUÌæ ·¤æ ¥Öæß °ß¢ â×êãUô′ ×ð′ ÂæÚU¼çàæüÌæ
 ·¤æ ¥Öæß ãñUĐ

•	
•	
•	

¥ŠØæØ - x

Şâ ßù ÂçúUÿæð æ ×ð' ¿Øçùì »ýæx ----- çÁâ×ð' ----- ÂçúUßæÚU çùßæâ ·¤ÚUÌð ãñ'UĐ
Sù×ð' ----- ÂçúUßæÚU Õè.Âè.°Ü. Ÿæð‡æè ×ð' ¥æÌð ãñ'UÐ Sù ÂçÚUßæÚUô' ·¤è ·é¤Ü Á¢Ù⢕Øæ ------- ãñUÐ Sâ »ýæx ×ð' ÂéL¤áô' ·¤è ⢕Øæ ------ ãñU çÁù×ð' ------ ÂéL¤á çàæçÿæÌ ãñU °ß¢ çÁâ·¤æ
ÂýçÌàæÌ ·é¤Ü ÁÙ⢕Øæ ·¤æ ------ ÂýçÌàæÌ ãñU ÌÍæ ×çãUÜæ¥ô¢ ·¤è ⢕Øæ ------ ãñU çÁù×ð' -----×çãUÜæØð' çàæçÿæÌ ãñU¢ °ß¢ çÁâ·¤æ ÂýçÌàæÌ ·é¤Ü ÁÙ⢕Øæ ·¤æ ------ ÂýçÌàæÌ ãñUÐ Sâ »ýæx ×ð'
¥Ùéâêç¿Ì ÁÙÁæçÌ ß»ü ·¤è ·é¤Ü ÁÙ⢕Øæ ------- ãñU, ¥Ùéâêç¿Ì ÁæçÌ ·¤è ÁÙ⢕Øæ ------- ãñU, âæ×æ<Ø</p>
ᯁ ÁÙ⢕Øæ ------ °ß¢ çÂÀUÇ,Uæ ß»ü ·¤è ÁÙ⢕Øæ ------- ãñUÐ

x.v. »ýæ× ·¤è ÁÙ⢠Øæ ·¤æ çßßÚU \pm æ

 $\partial x_{c} \dot{U} \cdot x_{c} \cdot \dot{y} \cdot x_{c} \cdot z \dot{A} \dot{U} \hat{a} \cdot x_{c} \partial x_{c} \cdot x_{c} \dot{x}_{c} \dot{x}_{c} \dot{y} \cdot \dot{y} \cdot x_{c} \dot{x}_{c} \dot{y} \cdot \dot{y} \cdot$

¥.Áæ.	¥. Á. Áæ.	çÂÀUÇU,æß»ü	âæ×æ<Ø	۰é¤Ü

ÌæçÜ·¤æ ·ý¢¤. { çàæçÿæÌ ÁÙ⢠Øæ çßßÚU‡æ

çÜ¢»	ÁÙâ¢●Øæ	ÂýçÌàæÌ	çàæçÿæÌ	ÂýçÌàæÌ
Sĩæè				
ÂéL¤á				
∙é¤Ü				

·é¤Ü ÁÙ⢕Øæ ×ð′ ------ ÂýçÌàæÌ ãUè çàæçÿæÌ ãñU ¥ÌÑ çàæÿææ ÂÚU çßàæðá ŠØæÙ ¼ðÙæ ¿æçãU°Đ

ÌæçÜ·¤æ ·ý¢¤.	∣-»æjß ð¤ é¤Ü ÂçÚUßæÚU	lô' ∙¤è â¢•Øæ

ÁæçÌ	·é¤Ü ÂçÚUßæÚUô′ ·¤è â¢●Øæ
¥. Áæ.	
¥Á. Áæ.	
çÂÀUÇ,Uæß»ü	
âæ×æ<Ø	
۰é¤Ü	

ÌæçÜ·¤æ ·ý¢¤. } - »æßô′ ×ð′ çß·¤Ü梻ô′ ·¤è ÁæÙ·¤æÚUè

çß·¤Ü梻ô′	çß·¤Ü梻ô′	çàæçÿæÌ	¥çàæçÿæÌ	çß·¤Ü梻ô′	çß·¤Ü梻ô′ ãðUÌé »æßô′ ×ð′
·ð¤ Âý·¤æÚU	∙¤è â¢®Øæ	çß·¤Ü梻	çß·¤Ü梻	·ð¤ Ùæ×	¿ÜÙð ßæÜè ØôÁÙæØð′
xê·¤					
ÕçÏÚU					
ÂôçÜØô »ýSÌ					
¥¢Ïĵß					
¥ôÆUô′•¤è					
çß·ë¤çÌ					
(€Üð•Å					
UçÜŒâ)					
ÂñÚUô' âð					
çß·¤Ü梻					
׿Ùçâ∙¤					
çß·¤Ü梻					
¥‹Ø					

»ýæ× ×ð′ ·é¤Ü ------ çß·¤Ü梻 ãñ′U çÁÙ×ð′ ------ çàæçÿæÌ Ìĺæ ------ ¥çàæçÿæÌ ãñ′UĐ »ýæ× ×ð′ ·ð¤ßÜ ÂôçÜØô »ýSÌ Ìĺæ ÂñÚUô′ âð çß·¤Ü梻 ãðUÌé Âð′àæÙ âéçßÏæ ©UÂÜŽÏ ãñ′UĐ ¥‹Ø çß·¤Ü梻ô′ ·¤ô àææâ·¤èØ âéçßÏæ°¡ ç×ÜÙð ãðUÌé ÂýØæâ ç·¤Øæ ÁæÙæ ¿æçãU°Đ

¥ŠØæØ-y

SßæS‰Ø, çàæÿææ ·¤è ©UÂÜŽĪÌæ °S¢ ©UÂØô»,

y.v SßæS‰Ø âéçßÏæØð'

»ýæ× ×ð' SßæS‰oØ ·ð¤·lý Ù ãUôÙð âð »ýæ×ßæçâØô' ·¤ô ·¤æÈ¤è ·¤çÆUÙæ§üØô' ·¤æ âæ×Ùæ ·¤ÚUÙæ ÂÇ,UÌæ ãñUĐ §ÜæÁ ·¤ÚUæÙð ãðUÌé ----- 畤.×è. ¼êÚU Âýæĺç×·¤ SßæS‰oØ ·ð¤·lý------ ÁæÌð ãñ'UĐ »ýæ× ×ð' ç;ç·¤^âæ ·¤è ·¤ô§ü ÆUôâ ÃØßSÍæ ÙãUè' ãñUĐ Õè׿ÚU ãUôÙð ÂÚU »ýæ×è‡æ ÛææÇ,U-Èê;¤·¤ ß fæÚÔUÜê ©UÂ;æÚU ·¤ô ãUè ×ãU'ß ¼ðÌð ãñ'U ;ê;ç·¤ ¥SÂÌæÜ ·¤è ¼êÚUè ÕãéUÌ ¥çi·¤ ãñUĐ ©UÙ·¤ô ©UÂØé€Ì §ÜæÁ ·¤è âéçßïæ Ù ç×ÜÙð âð ÁæÙ ·¤æ ¹ÌÚUæ Öè ÚUãUÌæ ãñUĐ ØãU »ýæ× SßæS‰oØ âéçßïæ¥ô¢ ×ð' ÕãéUÌ çÂÀUÇ,Uæ ãéU¥æ ãñUĐ ØãUæ; Âàæéç;ç·¤^âæÜØ Öè ÙãUè' ãñU »ýæ×è‡æô' ·¤ô ÁæÙßÚUô' ·ð¤ §ÜæÁ ·ð¤ çü° ------ 畤×è. ¼êÚU ------ ÁæÙæ ÂÇ,UÌæ ãñUĐ

y.v.v »ýæ× ÿæð æ ×ð ÁýçàæçÿæÌ °.°Ù.°×. •¤è ©UÂçSÍçÌ - ----- ãñUĐ

y.v.w »ýæ× ×ð' Âý×é¹ °S¢ ×õâ×è Õè׿çÚUØæj

»ýæ× ×ð′ ×镨 L¤Â âð ×õâ×è ß ¥‹Ø Õè׿çÚUØæ¢ çÙ•Ù Âý·¤æÚU ãñU- â¼èü, ¹æjâè, Õ鹿ÚU, ×ÜðçÚUØæ, ÇUæØçÚUØæ, ¹éÁÜè, ©UËÅUè-¼SÌ,¥æj¹ ¥æÙæ, ׿Ìæ §^Øæç¼Đ

©UÂÜŽÎÎæ	SĺæÙ	14êÚUè
v. ¥SÂÌæÜ		
w. Âàæé ç¿ç·¤^âæÜØ		
x. ¼ßæ ¼é•¤æÙ		
y. ¼ßæ¹æÙæ		
z. ç×ÌæÙèÙ		

$lac U = \frac{1}{2} \frac{1}$

{. ¥‹Ø (çÇUÂô	
ãUôËÇUÚU)	

y.w çàæÿææ ·¤è ©UÂÜŽÏÎæ °ß¢ ©UÂØô»

»ýæ×è‡æ âãUÖæ»ė â×èÿææ ∂ ¤ ¼õÚUæÙ ØãU çßç¼Ì ãéU¥æ ç·¤ »æ¢ß ×ð′ ∂ ¤ßÜ Âýæĺç×·¤ cß¼+ØæÜØ °ß¢ ׿ŠØç×·¤ çß¼+ØæÜØ ãñ′UĐ ©U"æÌÚU ׿ŠØç×·¤ àææÜæ — 畤.xè. ¼êÚU — U ×ð′ ãñUĐ ×ãUæçß¼+ØæÜØ — ç·¤xè. ¼êÚU — ×ð′ ãñUĐ §ââð ¥çi·¤ÌÚU »ýæ×è‡æ ¥ÂÙð Õ"æô′ ·¤ô ÂÉ,UæÙð ãðUÌé SÌÙð ¼êÚU ÖðÁÙæ Â⢼ ÙãUè′ ·¤ÚUÌð ãñ′UĐ »æ¢ß ×ð′ ·¤‹Øæ àææÜæ Ù ãUôÙð ∂ ¤ ·¤æÚU‡æ ÕæçÜ·¤æ¥ô¢ ×ð′ ©U"æ çàæÿææ ·¤æ ¥Öæß ãñUĐ »ýæ×è‡æ ¥ÂÙð Õ"æô′ ¹æâ·¤ÚU ŐæçÜ·¤æ¥ô¢ ·¤ô ŞÌÙð ¼êÚU ÂÉ,UæÙð ãðUÌé ÖðÁÙð ·ð¤ Âÿæ ×ð′ ÙãUè′ ÚUãUÌð ãñ′U, ŞâçÜØð ©U"æ çàæÿææ ×ð′ ÕæçÜ·¤æ¥ô¢ ·¤ô ŞÌÙð ½êÚU ÂÉ,UæÙð ãðUÌé ÖðÁÙð ·ð¤ Âÿæ ×ð′ ÙãUè′ ÚUãUÌð ãñ′U, ŞâçÜØð ©U"æ çàæÿææ ×ð′ ÕæçÜ·¤æ¥ô¢ ·¤ô SÌÙð ½êÚU ÂÉ,UæÙð ãðUÌé ÖðÁÙð ·ð¤ Âÿæ ×ð′ ÙãUè′ ÚUãUÌð ãñ′U, SâçÜØð ©U"æ çàæÿææ ×ð′ ÕæçÜ·¤æ¥ô¢ ·¤ê ©UÂçSíçÌ ÕãéUÌ ·¤× ãñUĐ ÃØßâæçØ·¤ çàæÿææ ·ð¤ ÂýçÌ Öè Üô»ô′ ·¤æ ¥æ·¤áü‡æ ÕãéUÌ ·¤× ãñUĐ ÃØßâæçØ·¤ çàæÿææ ·ð¤ ÂýcÌ Öè Üô»ô′ ·¤æ

\hat{I} æçÜ·¤æ·ý¢¤. v[®] - ÂæÆUàææÜæ·¤æ çßßÚU‡æ

€Øæ »æ;ß ×ð′ ÂæÆUàææÜæ ãñU ?	
ÂæÆUàææÜæ ·¤ãUæ¡ çSÎÌ ãñU °ß¢ ç·¤ÌÙð Õ"æð ãñU	
ÂæÆUàææÜæ ·¤è ¼êÚUè ç·¤ÌÙè ãñU ?	
ÂæÆUàææÜæ Ì·¤ Âãé¡U¿Ùð ßæÜè âÇ,U·¤ ·¤è çSÍçÌ ·ñ¤âè ãñU?	
ÕÚUâæÌ ×ð′ ©UÙ âÇ,U·¤ô′ ·¤è çSíçÌ ·ñ¤âè ãUôÌè ãñU ?	

Ìæç \ddot{U} ·¤æ ·ý¢¤. vv çàæÿææ â¢SÍæ \dot{U} ·¤æ çß \dot{U} U‡æ

ÂæÆUàææÜæ	àææâ·¤èØ	¥Ïüàææâ•¤èØ	1⁄4Áü	ÂýÕ¢ÏÙ			
∙¤æ Âý∙¤æÚU			â¢●Øæ	ÖßÙ	ÂèÙð	¹ðܷꤼ	×ŠØæ±Ù
				.¤"ææ/€.¤æ	.¤æ	âæ×»ýè	ÖôÁÙ
					ÂæÙè		
¥æ¢»ÙÕæÇ,Uè							
Âýæĺçו¤							
àææÜæ							
׿Шç×·¤							

àææÜæ				
©U"æ				
׿Шç×·¤				
©U"æÌÚU				
׿Шç×·¤				

y.w.v »ýæx $\times \tilde{\partial}'$ àææâ·¤èØ Âýæĺç×·¤ çß $\frac{1}{4}$ +ØæÜØ

y.w.w àææâ·¤èØ ×æŠØç×·¤ çß¼÷ØæÜØ

y.w.x àææâ·¤èØ ©U"æÌÚU ׿ŠØç×·¤ çß¼÷ØæÜØ

y.w.y àææâ·¤èØ ×ãUæçß¼÷ØæÜØ

y.w.z. çÙÁè ç β'_4+0 æÜØ °S¢ ×ãUæç β'_4+0 æÜØ ·¤è çSíçì -

y.x àzezâ·mèØ çß¼÷ØzeÜØô′ ×ð′ ׊Øz<ãU ÖôÁÙ ·mè çSĺ
çľ -

»ýæ× ·ð¤ Âýæĺç×·¤ çß¼÷ØæÜØ ×ð′ ׊Øæ‹ãU ÖôÁÙ ·¤è ©UÂÜŽÌÌæ ãñUĐ çß¼÷ØæÜØ ×ð′ ׊Øæ‹ãU ÖôÁÙ ·¤è ÃØßSĺæ âé;æL¤ L¤Â âð â¢;æçÜÌ ·¤è Áæ ÚUãUè ãñUĐ

y.y âãU·¤æÚUè ç \hat{M} ÚU‡æ Âý‡ææÜè

»ýæ× ×ð′ ÚUæàæÙ âæ×»ýè ãðUÌé ©Uç¿Ì ×êËØ ·¤è ¼é·¤æÙ - ãñU Øæ ÙãUè′ ãñUĐ

y.z »ýæ× ×ð' Âôá‡æ ·¤è çSĺçľ

»ýæ×è‡æ ×镨ÌÑ Âôá‡æ ·ð¤ çÜØð ------ ¥æç¼ ÂÚU çÙÖüÚU ÚUãUÌð ãñ'UU, ÖôÁÙ ×ð' ×镨ÌÑ ------ ·¤æ ©UÂØô» ãUôÌæ ãñUĐ âæ»-âçŽÁØô' ×ð' ------ ·¤æ ÂýØô» ãUôÌæ ãñUĐ Ø¼÷ØçÂ »ýæ× ×ð' ·¤ô§ü ·é¤ÂôçáÌ ÕæÜ·¤ Øæ ÕæçÜ·¤æ ÙãUè' ç×Üð ãñ'U ç·¤‹Ìé »ýæ× ×ð' »ýæ×è‡æô' ·ð¤ â×éç;Ì Âôá‡æ ×ð' âéÏæÚU ·¤è ¥æßàØ·¤Ìæ ãñUUĐ

¥ŠØæØ z

Âýæ· \ddot{e} ¤cl·¤ â¢âæÏÙ - (Öêç×, ÁÜ, ßÙ, ¹cÙÁ ╼æ)

»ýæ× ·ð¤ çß·¤æâ ·ð¤ çÜØð ØãU ¥'Ø‹Ì ×ãU'ßÂê‡æü ãñU ç·¤ ©UÂÜŽÏ â×éç¿Ì â¢âæÏÙô′ ·¤æ çÙÚ¢UÌÚUÌæ ÕÙæØð ÚU'Ìð ãéUØð, ¼ôãUÙ ç·¤Øæ Áæßð, âæÍ ãUè ÂØæüßÚU‡æèØ Âýæ·ë¤çÌ·¤ â¢ÌéÜÙ ÕÙæ ÚUãðUĐ ×é**a** Ø â×SØæ ãñU ç·¤ »ýæ×è‡æ ·ð¤ßÜ â¢âæÏÙô′ ·¤æ ¼ôãUÙ ·¤ÚU ÚUãðU ãñ′U ©UÙ·¤æ ÂýÕ¢ÏÙ ÙãUè'Đ

ÌæçÜ·¤æ ·ý¢¤. vw - Âýæ·ë¤çÌ·¤ â¢âæÏÙ

»ýæx •¤æ	ŀé¤ÜßÙ	∙ë¤çá	çâ¢ç¿Ì Öêç×	¥çâ¢ç¿Ì	çÙÁè	àææâ·¤èØ	àææâ·¤èØ
∙é¤Ü	ÿæð~æÈ¤Ü	Øô X Ø	ãðU€ÅðU	Öêç×	ÂÇ,UÌ Öêç×	fææâÖêç×	âæ×é¼æçØ•
ÿæð~æÈ¤Ü	ãðU€ÅðU	Öêç×	ØÚU	ãðU€ÅðU	ãðU€ÅðU	ãðU€ÅðU	¤ Öêç×
ãðU€ÅðU	ØÚU	ãðU€ÅðU		ØÚU	ØÚU	ØÚU	ãðU€ÅðU
ØÚU		ØÚU					øúu

$\ddot{O}\hat{e}-\hat{a}\epsilon\hat{a}\tilde{x}\ddot{l}\dot{U}\cdot\tilde{\partial}^{\underline{n}}\,\bar{Y}\epsilon\tilde{l}\tilde{s}\tilde{x}\ddot{U}\dot{e}\,\ddot{O}\hat{e}\varsigma \times\varsigma \dot{U}\bullet\dot{U}\,\hat{A}\dot{y}\cdot\underline{x}\tilde{x}\acute{U}U\cdot\underline{x}\dot{e}\,\tilde{a}\tilde{n}U-$

z.v ç×Å÷UÅUè ·ð¤ Âý·¤æÚU

ØãUæj ÂÚU ----- Âý·¤æÚU ·¤è ç×Å÷UÅUè ãñU -

ÌæçÜ·¤æ ·ý¢¤. vx - çxÅ÷UÅUè ·ð¤ Âý·¤æÚU

Öêç× ∙¤æ Âý•¤æÚU	çxÅ÷UÅUè ·ð¤ Âý·¤æÚU	ßÌü×æÙ ÃØßãUæÚU

$\label{eq:product} \begin{split} & \frac{1}{2} \mathbb{E} \left[\frac{1}{$	
ç.¤° »Øð ·¤æØü	

·ý¤×梷	.¤æØ	ßá	â¢●Ø	SÍÜ∙¤è	¥Ùé׿çÙ Ì Üæ»Ì
¤	ü	ü	æ	ÁæÙ·¤æÚU	ÌÜæ»Ì
				è	
ν					
w					
x					
у					
z					

z.w ÁÜ â¢âæÏÙ

-ë¤çá ×éũ Ø ÃØßâæØ ãUôÙð ·ð¤ ÕæßÁê¼ Öè ßáæü ¥æïæçÚUÌ ãUè ãñUĐ ×éũ Ø ÁÜ SæôÌ âæ×鼿çØ·¤ ·éj¤¥æ ÙãUè′ ãñU, »ýæ×ßæâè âæ×æ‹ØÌÑ ßáæü ·ð¤ ÁÜ ÂÚU ãUè çÙÖüÚU ãñ'UĐ ßð ¥ÂÙð çÙSÌæÚU ·ð¤ çܰ ãñU‡ÇU• °ß¢ ìæÜæÕ ·ð¤ ÂæÙè ·¤æ ©UÂØô» ·¤ÚUÌð ãñ'UĐ ßáæü ÂÚU çÙÖüÚUÌæ ãUôÙð ·ð¤ ·¤æÚU‡æ ßáæü Ù ãUôÙð ÂÚU âê¹ð ·¤è çSíçÌ ©U'‹Ù ãUô Áæìè ãñUĐ ÁÜ ÂýŌ¢ïÙ Ù ãUôÙð âð ·ë¤çá Âê‡æüÌØæ ßáæü ÂÚU çÙÖüÚU ãñUĐ »ýæ× ×ð′ ------ ìæÜæÕ, -----ãñ'UÇU ¢ÂU, ------ Å÷UØêÕßðÜ, ------ ÇUÕÚUè, ------ SÅUæÂ ÇñU× °ß¢ ÙæÜæ ãñUĐ ŞÙ·ð¤ ¥Üæßæ ÙãUÚ °ß¢ âæ×鼿çØ·¤ ·éj¤¥æ ÙãUè′ ãñUĐ ÁÜ ÂýÕ¢ïÙ ·¤æ çßàæðá M¤Â âð çý¤ØæßØÙ ãUôÙæ ¿æçãU°Đ

ÌæçÜ·¤æ ·ý¢¤. vz - ÁÜ â¢âæÏÙ - ©UÂÜŽÏ ÁÜ â¢âæÏÙ

dôÌ	âæ×é¼æçØ•	ãñU‡ÇUÂ●	Å÷UØêÕßð	ÌæÜæ	ÇUÕÚU	ÙãUÚ	SÅUæ	ÙæÜ	ù!⁄4
	¤ ·éj¤¥æ	Â	ü	Õ	è	u	Â	æ	è

				ÇñU×	
â¢•Øæ					
ÂæÙè •¤è ©UÂÜŽÎÎ					
æ					
©UÂØô»					

ÁÜ SÌÚU ÕãéUÌ ãUè Ùè¿ð ãñU °ß¢ ç×Å÷UÅUè ·¤è ÁÜ ïæÚU‡æ ÿæ×Ìæ ·¤× ãUôÙð ·ð¤ ·¤æÚU‡æ ¥çÏ·¤ÌÚU ÌæÜæÕ ×æ¿ü âð âê¹Ùð Ü»Ìð ãñ′UĐ

z.x ßÙ â¢âæÏÙ

»ýæ×è‡æ âãUÖæ»è â×èÿææ ·ð¤ ¼õÚUæÙ ØãU çßç¼Ì ãéU¥æ ç·¤ ------ »ýæ× ×ð′ Âý¿éÚU ׿ ææ ×ð′ ßÙ ãUôÙð âð Øð §Ù·¤æ ÜæÖ Üð Âæ ÚUãðU ãñUĐ ÂÚUÌé ßÙ âç×çÌ ×ð′ âé¿æM¤ ÂýÕ¢ÏÙ Ù ãUôÙð ·ð¤ ·¤æÚU‡æ §‹ãð′U ßÙ âð âèïæ ÜæÖ ÙãUè′ ç×Ü Âæ ÚUãUæ ãñUĐ ÁÜæª¤ 'ߢ §×æÚUÌè Ü·¤çÇ,UØô′ ·¤è ¥æÂêçÌü ÙãUè′ ãUô Âæ ÚUãUè ãñUĐ çÁââð »ýæ×è‡æ çÙÁè Öêç× ß ßëÿææÚUô‡æ Ĭĺæ Á¢»Ü çÇUÂô âð ÁÜæª¤ 'ߢ §×æÚUÌè Ü·¤çÇ,UØô′ ·¤è ¥æÂêçÌü ·¤ÚU ÂæÌð ãñ′UĐ ßÙô′ ÂÚU ¥æçŸæÌ ÁÙ ⢕Øæ - ----- ÂýçÌàæÌ ÂçÚUßæÚU, §×æÚUÌè Ü·¤Ç,Uè ----- ÂýçÌàæÌ ÂçÚUßæÚU 'ߢ ÁÜæª¤ Ü·¤Ç,Uè - ----- ÂýçÌàæÌ ÂçÚUßæÚU ßÙô′ ÂÚU çÙÖüÚU ÚUãUÌð ãñ′UĐ

$$\label{eq:product} \begin{split} & \frac{1}{2} e^{i \omega_{\rm c} \omega_{\rm c}} \cdot \sqrt{1 + (1 + i \omega_{\rm c})^2 + (1$$

ßÙôÂÁ	∙é¤Ü ⢻ýãU	×êËØ	Õð¿Ù𠕤æ SĺæÙ
ÁÜæª¤ Ü·¤Ç,Uè			
fææâ			
×·¤æÙ ãðUÌé Ü·¤Ç,Uè			
Őæ¢â			
¥‹Ø ¿æÚUæ			

ßÙõáçÏØæj		
Ìð<¼ê Â^Ìæ		
Üæ ¹		
ãUÚUæü		
·é¤âé× ÕèÁ		
»ô′¼ / Üæâæ		
¿æÚU / ç¿ÚUõ′Áè		
×ãéU¥æ		
ÕãUðÇ,Uæ		
¥æ¢ßÜæ		
âæÜ ÕèÁ (ÕôÇ,Uæ)		
§×Üè		
âÚUŞü		
¥₄Ø		
¥‹Ø		
¥‹Ø		

»ýæ×è‡æ ÂýçÌ ×æãU ç€ß¢ÅUÜ ÁÜæª¤ Ü·¤Ç,Uè......ç€ß¢ÅUÜ »ôÕÚU ·ð¤ ·¢¤ÇðU ÌÍæ çÜÅUÚU ç×Å÷UÅUè ·¤æ ÌðÜ ƒæÚÔUÜê §ü¢ÏÙ ·ð¤ M¤Â ×ð′ ÃØØ ·¤ÚUÌð ãñ′U z.y â¢Øé€Ì ßÙ ÂýÕ¢ÏÙ âç×çÌ - Áð.°È¤.°×.âè. ¼÷ßæÚUæ ØãU ™ææÌ ãéU¥æ ç·¤ ßÙô′ ·¤ô ¥Õ Ì·¤ ¥æ», ¥ßñÏ ¿ÚUæ§ü °ß¢ »ýæçׇæô′ ¼÷ßæÚUæ ¼ôãUÙ âð ·¤ô§ü âð ãUæçÙ ÙãUè ãéU§ü ãñUĐ ¥Õ Ì·¤ ßÙ çßÖæ» Øæ Áð.°È¤.°×.âè. ¼÷ßæÚUæ ç·¤âè ·¤ô ¼¢çÇUÌ ÙãUè ç·¤Øæ »Øæ ãñUĐ ç·¤·Ìé àæô;ÙèØ ÕæÌ ØãU ãñU ç·¤ ¥æÂæÌ·¤æÜèÙ çSíçÌ âð çÙÂÅUÙð ãðUÌé Áð.°È¤.°×.âè. ·ð¤ Âæâ ·¤ô§ü ÌñØæÚUè ÙãUè ãñUĐ ÌæçÜ·¤æ ·ý¢¤. v – Áð.°È¤.°×.âè. ·ð¤ ¹æÌð ×ð′ Á׿ ·¤è »§ü ÚUæçàæ

∙¤æØü	ßáü	ßáü	ßáü	ßáü	ßáü	Ø
	W®®	W®®	W ^{®®}	W ^{®®}	W®®	ô»
	Z-	{-	-	}-	~-	
	w ^{®®}	w ^{®®}	W ^{®®}	W ^{®®}	w [®] v	
	{	I	}	~	®	
∙¤æcÆUèØ						
(Timber)						
¥·¤æcÆUèØ						
(NTFP)						
ÚUæcÅUþè·ë						
¤Ì ßÙôÂÁ						
(ÙðàæÙÜæ§'						
ÇU BÙôÂÁ)						
Őæ¢â						
fææâ						
¥‹Ø						
∙é¤ÜØô»						

 $] \& \varsigma \ddot{U} \cdot u \& \cdot \dot{\gamma} \varepsilon u . v \} - \acute{A} \ddot{\partial} \cdot \overset{\circ}{E} u . ^{\circ} \times . \hat{a} \dot{e} . \, ^{1} \&] \ddot{\partial} \hat{a} \dot{\partial} \varsigma \dot{U} \cdot u \& \ddot{U} \dot{U} \& S \ddot{u} \dot{U} U \& c \dot{a} \& \cdot u \& c \dot{S} \dot{S} \dot{U} \dot{U} + \& c \dot{S} \dot{U} \dot{U} & c \dot{u} & c \dot{S} \dot{S} \dot{U} \dot{U} + \& c \dot{S} \dot{U} \dot{U} & c \dot{U} &$

ßáü	çÙ·¤æÜè »§ü ÚUæçàæ	ç∙¤Øð «Øð ∙¤æØü	ßĨü×æÙ çSĺçĨ
w ^{®®} z-			

w ^{®®} {		
w ^{®®} {-		
$w^{^{\otimes \otimes}} $		
$w^{\otimes \otimes} $ -		
$w^{\otimes \otimes}$		
$w^{\otimes \otimes}$ -		
w ^{®®} ~		
w ^{®®} ~-		
w [®] v [®]		

¥. Üf æ
é ß ÙôÂÁ $\cdot \partial^{\underline{n}}$ ¼+ßæ ÚUæ ¥æØß ï
ü·¤ »ç Ìç
ßç ïØæ

»ýæ× ×ð′ ÁÙ âãUÖæ»è â×èÿææ âð ØãU ™ææÌ ãéU¥æ ç.¤ »ýæ×è‡æ ¥æ¢ßÜæ, ×ãéU¥æ, »ô′⁄4, ¿æÚU-ç¿ÚUō′Áè ·ð¤ ßëÿæô′ ·¤æ ©UÂØô» ¥çÏ·¤ÌúU ·¤ÚUÌð ãñ′UĐ §Ù ßëÿæô′ ·¤æ ©UÂØô» »ýæ×è‡æ ×ć¶ ØÌŇ È¤Ü ·ð¤ çÜØð ·¤ÚUÌð ãñUĐ €Øô′ç.¤ »ýæ× ×ð′ ßëÿææÚUô‡æ ·¤æØü ·ð¤ çܰ »ýæ×è‡æ ©U°âé·¤ ãñUUĐ ¥ÌŇ Øð ·¤ãUæ Áæ â·¤Ìæ ãñU ç.¤ Øç′4 ©UÙ·¤è Sßð'ÀUæ ¥ÙéâæÚU ¿ØçÙÌ ÂýÁæçÌ ·ð¤ ßëÿæ, ßëÿææÚUô‡æ ·ð¤ ¼õÚUæÙ Ü»æØð ÁæØð Ìô »ýæ×ßæçâØô′ ·¤ô ÖçßcØ ×ð′ §Ù·¤æ ÜæÖ ç×Ü â·ð¤»æĐ â×èÿææ âð ØãU ŌæÌ SÂcÅU ãéU§ü ç.¤ »ýæ×è‡æô′ Ùð âÚU§ü, âæÜ, Üæ¹, Ōæcâ ·ð¤ ßëÿæ ·¤ô ¥çÏ·¤ ×ãU'ß ÙãUè′ ç¼Øæ ãñU, ÁŌç:¤ ©Uâ·¤æ ©UÂØô» çßçÖ·Ù ·¤æØôZ ·ð¤ çÜØð ç.¤Øæ Áæ â·¤Ìæ ãñUĐ ¥ÌŇ ©U¼+Øæçù·¤è, ¥õálèØ, ȤܼæÚ, ßæçÙ·¤è Âõïð Ĭíæ ¥«Ø ßëÿæ °ß¢ ©UÙâð ãUôÙð ßæÜð ÜæÖ çÁâ·¤è ÁæÙ·¤æÚUè »ýæ×ßæçâØô′ ·¤ô ÙãUè′ ãñU ©Uâ·ð¤ çßáØ ×ð′ »ýæ×è‡æô′ ·¤ô ÁæÙ·¤æÚUè

SÙ ßëÿæô' âð ÂýæŒÌ Üfæé ßÙôUÂÁ °ß¢ ¥‹Ø ©UÂÁô' ·¤æ ÜæÖ ©UÆUæ·¤ÚU »ýæ×ßæâè ¥ÂÙè ¥æØ ×ð' ßëç¼÷Ï ·¤ÚU â·¤Ìð ãñUĐ

¥æØßÏü∙¤ »çÌçßçÏØæ¡ Ñ »ýæ×è‡æô′ ∙¤ô ¥çÌçÚU€Ì ¥æØ ãðUÌé Âýçàæÿæ‡æ ç¼ÜßæØæ Áæ â∙¤Ìæ ãñUĐ

ßëÿæô' ·¤æ Ÿæð‡æè·¤ÚU‡æ Ñ »ýæ×è‡æô' Ùð ¥ÂÙè Âýæĺç×·¤Ìæ ·ð¤ ¥æïæÚU ÂÚU ßëÿæô' ·¤ô àæê‹Ø âð ¼â Ì·¤ ·ð¤ ׿Ù·¤ ¥ÙéâæÚU Ÿæð‡æè·ë¤Ì ç·¤Øæ ãñU, çÁâ×ð' àæê‹Ø âÔâð ·¤× Ìĺæ ¼â âÔâð ¥çï·¤ ©UÂØô»è ׿Ùæ »Øæ ãñUĐ

, daræt	∫રેણુંજ્ર .¤& પ્રેજ્ઞ	ŐÁæÚU×ð	x.¤æÙ ða .¤æx	¤&.IJ	ÁÜæª¤ ×ð′	14æ× ð¤ L¤ ×ð'	¥õáĨè હેં¤ çÜØð	ʤÜ	¢Q	Ÿæð‡æè ×ð′ SÍæÙ
ν										Âýæĺç×·¤Ìæ
w										.ð¤
x										¥ÙéâÚU‡æ
у										ĝ¤
z										ßëÿæ •¤ô
{										Ÿæð‡æè ×ð′
										âßüÂýĺ×
}										ÚU¹æ »Øæ
~										ãñUĐ

ÌæçÜ·¤æ ·ý¢¤. v~ - »ýæxßæçâØô' ·¤è Âýæĺçx·¤Ìæ ¥ÙéâæÚU ßëÿæô' ·¤æ Ÿæð‡æè·¤ÚU‡æ

Ìæç \ddot{U} ·¤æ ·ý¢¤. w[®] - ×õâ× Âý \ddot{O} æßè âæ $\acute{U}U$ ྏ

·¤æØü	ÁÙßÚ	ȤÚUß	׿	¥Âý	×§	Áê	ÁéÜæ	¥»	çâÌ●Õ	¥€ÅêU	Ùß●Õ	ç¼â●Õ
	Uè	ÚUè	żü	ñÜ	ü	ù	Şü	SÌ	úu	ÕÚU	úu	úu
ßù												
çßÖæ»												
.J¤												
.¤æØü												
¥.¤æÜ												
ÚUæãU												

Ì∙¤æØü					
ç⢿æ§					
ü ãðUÌé					
ÂæÙè					
.¤è					
©UÂÜ					
ŽÏÌæ					
ÖôÁÙ					
.¤è					
©UÂÜ					
ŽÏÌæ					
·ë¤çá					
∙¤æØü					
ÂÜæØ					
ù					
«¤‡æ					
¥çÌçÚU					
€Ì¹¿æü					

- ßÙ çßÖæ» ¼÷ßæÚUæ ßáü ×ð′ ------ ׿ãU ·¤æØü ç·¤Øæ »Øæ ãñUĐ çÁÙ×ð′ ------ Ìĺæ ----- ׿ãU ×ð′ ¥·¤æÜ ÚUæãUÌ ·¤æØü Öè ·¤ÚUßæØæ »Øæ ãñUĐ
- ×镨ÌÑ ÁêÙ âð Ùß•ÕÚU ׿ãU ×ð′ ·ë¤çá ·¤æØü ç·¤Øæ ÁæÌæ ãñUĐ
- ÁêÙ âð çâÌ ÕÚU ׿ãU ·ð¤ ׊Ø âßæüçï·¤ ·¤Áü çÜØæ ÁæÌæ ãñUĐ

z.z §ü¢ÏÙ ÃØØ

»ýæ× ------ ×ð′ §ü¢ÏÙ ÃØØ ------ âð ------ ÕôÛææ Øæ ------ ç·¤Üô»ýæ× Ü·¤Ç,Uè, -----ç€ß¢ÅUÜ »ôÕÚU ·ð¤ ·¢¤ÇðU Ìĺæ ------ ÜèÅUÚU ç×Å÷UÅUè ÌðÜ ·¤æ ÂýçÌ׿ãU ©UÂØô» ·¤ÚUÌð ãñUĐ »ýæ× ×ð′ »ýæ×è‡æ ŞüçÏÙ ·ð¤ L¤Â ×ð′ Ü·¤Ç,Uè, 'ðlô′ âð çù·¤ÜÙð ߿ܿ Öêâæ (ÂñÚUæ) ß ¥‹Ø ȤâÜô′ ·ð¤ ÂñÚUæ-Ç¢UÆUÜ (ÌÙô′) ·¤ô ŞüçÏÙ ·ð¤ L¤Â ×ð′ ©UÂØô» ·¤ÚUlð ãñ′U, çÁââð ŞüçÏÙ ·¤è Õ;Ì ãUôlè ãñUĐ SÅUôß ß ÚUâôŞü »ñâ ·¤æ ÂýØô» ·é¤ÀU ãUè fæÚUô′ ×ð′ ãñ′UĐ âôÜÚU ·é¤·¤ÚU ¥æç!⁄4 ¥æléçù·¤ ŞüÏÙô′ ·¤æ ÂýØô» ÙãUè ãñUĐ »ýæ× ×ð′ »ôÕÚU »ñâ ¥æç!⁄4 ·¤æ ÂýØô» Öè ¥çli¤ ÙãUè′ ãUôlæ ãñUĐ ¥ÌÑ »ýæ× ×ð′ ŞÙ ¥æléçù·¤ âælù Áñâð-©U‹ùl ;êËãUæ, ç·¤âæù çâ»Ç,Uè, âôÜÚU ·é¤·¤ÚU, »ôÕÚU Ȗâ ·ð¤ ÂýØô» ·¤ô ÕÉ,Uæßæ ¼ðÙæ ;æçãUØð Ìæç·¤ ßÙô′ ·¤è ·¤ÅUæŞü ·¤ô ÚUô·¤æ Áæ â·ð¤ ß »ýæ× ×ð′ ŞüçlÜ ·¤è ·¤×è ·¤ô ¼êÚU ç·¤Øæ Áæ â·ð¤UĐ

âæÏÙ	ÃØØ
ÁÜæª¤ Ü·¤Ç,Uè	
»ôÕÚU ·ð¤ ·¢¤ÇðU	
»ôÕÚU »ñâ	
fæÚÔUÜê »ñâ (°Ü.Âè.Áè.)	
ÂýçÌç¼Ù Üæ§ü ÁæÙð ßæÜè ÁÜæª¤	
Ü·¤Ç,Uè	
ç×Å÷UÅUè ·¤æÌðÜ	
Ϊê×ý ÚUçãUÌ ¿êËãUæ	
âôÜÚU ·é¤·¤ÚU	

$] & \& \dot{v} \in \mathcal{V} = \mathcal$

ÌæçÜ·¤æ ·ý¢¤. ww - ª¤Áæü ·ð¤ dôÌ

âæÏÙ ¿êËãUæ Ï饿j ÚUçá	lÌ ¿êËãUæ »ôÕÚU »ñâ	$f atule \hat{U} \hat{U} \hat{U} \hat{U} \hat{v}$ »ñâ	SÅUôß
----------------------	---------------------	---	-------

		(°Ü.Âè.Áè.)	
∙é¤Ü			
ÂçÚUßæÚU			

 $z.\{ fsu chi generation for the two sets for two$

»ýæ×è‡æ âãUÖæ»è â×èÿææ ¼÷ßæÚUæ ØãU ÕæÌ âæ×Ùð ¥æ§ü ç·¤ çß»Ì ßáôZ ×ð′ ßÙ çßÖæ» ¼÷ßæÚUæ ßÙ çß·¤æâ, ¥õ¼÷Øôç»·¤ §·¤æ§üØæj, ª¤Áæü ·ð¤ ¥ÂæÚ¢UÂçÚU·¤ dôÌ ãðUÌé ·¤ô§ü ·¤æØü ÙãUè ç·¤Øæ »Øæ ãñUĐ

$$\label{eq:product} \begin{split} & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}} \circ \mathcal{V} \diamond \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}(\tilde{U} \cdot \mathbb{I}_{\mathcal{R}}) \\ & \tilde{I}_{\mathcal{R}}$$

ßÙ çßÖæ» ¼÷ßæÚUæ 畤Øð »Øð •¤æØü	ßáü	ſSÌü×æÙ çSÍçÌ
ßæçÙ·¤è ÂõÏô′ ·¤æ ßëÿææÚUô‡æ		
ÚUôçÂÌ ÂõÏô′ ·ð¤ çß·¤æâ ·¤æ ç·ý¤ØæßÙ ·ñ¤âð ç·¤Øæ »Øæ		
©U!¼÷ØæçÙ·¤è ÂõÏô′ ·¤æ ßëÿææÚUô‡æ		
ÚUôçÂÌ ÂõÏô′ ·ð¤ çß·¤æâ ·¤æ ç·ý¤ØæßÙ ·ñ¤âð ç·¤Øæ »Øæ		
¥õáÏèØ ÂõÏô′ •¤æ ßëÿææÚUô‡æ		
ÚUôçÂÌ ÂõÏô′ ·ð¤ çß·¤æâ ·¤æ ç·ý¤ØæßÙ ·ñ¤âð		

ç.¤Øæ »Øæ	
¥·¤æcÆUèØ ÂõÏô' ·¤æ ßëÿææÚUô‡æ	
ÚUôçÂÌ ÂõÏô′ ·ð¤ çß·¤æâ ·¤æ ç·ý¤ØæßÙ ·ñ¤âð ç·¤Øæ »Øæ	
¥‹Ø ÂõÏô´ ·¤æ ßëÿææÚUô‡æ	
ÚUôçÂÌ ÂõÏô′ ·ð¤ çß·¤æâ ·¤æ ç·ý¤ØæßÙ ·ñ¤âð ç·¤Øæ »Øæ	

$] \& c \ddot{U} \cdot u & \cdot y \in \mathbb{R} \\ (f \dot{U} - f \dot{U} - f \dot{U} - f \dot{U} - f \dot{U} + f \dot{U} & \dot{U} + f \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} - f \dot{U} + f \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} + f \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U} & \dot{U} \\ (f \dot{U} - u & \dot{U} \\ (f \dot{U} - u & \dot{U} & \dot{U$

.ý¤	ç.¤â.¤è Ş.¤æ§	ȮU Ùßáü	ßÌü׿ ÙçSlçÌ	.é¤Ü §∙¤æ§üØæ	∙é¤Ü Üô» çÁÙ∙¤ô
•		Ujsau	u çoiçi	3.7783UDA	ç∧u⊶o ÚUôÁ»æÚ
	ü ãñU			i	
					U ç×Üæ
					ãñU
ν					
w					
x					
у					
z					
{					

ßÙ çßÖæ» Ùð »Ì ßáôZ ×ð′ »ýæ× ------ ×ð′ ·¤ô§ü ¥õ¼÷Øôç»·¤ §·¤æ§ü ÙãUè′ SĺæçÂÌ ·¤è ãñUĐ ÁÕç·¤ Üf æé ßÙôÂÁô′ °S¢ ßÙôÂÁ ·¤è ·é¤ÀU ¥õ¼÷Øôç»·¤ §·¤æ§Øæ¡ ܻ߿§ü Áæ â·¤Ìè ãñUĐ

≞¤Áæü dôÌ	ßáü	©UÂÜŽÏ •¤ÚUæ§ü ÁæÙð ßæÜè â¢®Øæ	çãUÌ»ýæãUè ∙¤æ Ùæ×	ßÌü׿Ù çSÍçÌ
çß¼÷ØéÌ ª¤Áæü				
âôÜÚU ª¤Áæü				
»ôÕÚU »ñâ				
·ñ¤ÚUôâèÙ				
°Ü.Âè.Áè.				
ÁÜæª¤ Ü∙¤Ç,Uè				

ÌæçÜ·¤æ ·ý¢¤. wz - ßÙ çßÖæ» ¼+ßæÚUæ ç¼Øð »Øð ª¤Áæü ·ð¤ ¥ÂæÚ¢UÂçÚU·¤ dôÌ °ß¢ çß·¤æâ

»ýæx âãUÖæ»è âxèÿææ ¼÷ßæÚUæ Øð ÕæÌ Öè âæxÙð ¥æ§ü ãñU ç·¤ ßÙ çßÖæ» ¼÷ßæÚUæ ¥Õ Ì·¤ ª¤Áæü ç·¤ ¥ÂæÚ¢UÂçÚU·¤ S~æôÌ ·¤è SÍæÂÙæ ÌÍæ §Ù·ð¤ çß·¤æâ (Áñâð-âôÜÚU ª¤Áæü, »ôÕÚU »ñâ, ÏêxýÚUçãUÌ ¿êËãUæ ¥æç¼) ãðUÌé ·¤ô§ü ·¤æØü ÙãUè′ ç·¤Øæ »Øæ ãñU ¥ÌÑ §â ⢼Öü xð′ ÆUôâ ·¤¼x ©UÆUæÙæ ¿æçãU°Đ

¥ŠØæØ - {

$\cdot \ddot{e}^{a}_{c}\dot{a} \hat{A}_{4}^{\prime} \dot{+} \ddot{i}_{c}\dot{i}, \ddot{O}\hat{e}_{c}_{x} \cdot \mathbf{z}_{x} \otimes \mathbb{O}U\hat{A}\hat{a}_{x} \cdot \mathbf{z}_{x} \hat{a}_{x} \cdot \mathbf{z}_{x} \hat{A}_{x} \hat{A}_{x} \dot{a}_{x} \hat{A}_{x} \hat{A}_{$

ç.¤âè Öè »ýæx ·ð¤ ©UʻſæÙ ×ð′ âÕâð ¥ãU× Öêç×·¤æ çÙÖæÙð ×ð′ ©Uâ·¤è ·ë¤çá ·¤æ °·¤ ¥×êËØ Øô»¼æÙ ÚUāUÌæ ãñUĐ »ýæx ------- ×ð′ Üô» ÂæÚU•ÂçÚU·¤ ¼+ÏçÌ âð ¹ðlè ·¤ÚUÌð ãñ′UĐ çÁââð ©Uٷ𤠩UʿÂæ¼Ù ×ð′ ßëç¼+Ï ÙãUè′ ãUô ÚUãUè ãñUĐ »ýæ×ßæçâØô′ ·¤ô ·ë¤çá ·ð¤ ÙØð ÌÚUè·ð¤, ©U·¤ÚU‡æ ¥ōÚU Áñçß·¤ ¹æ¼, »ôÕÚU ¹æ¼ °ß¢ ß×èü ·¤•ÂôSÅU ·ð¤ ÕæÚÔU ×ð′ ÂØæüŒÌ ÁæÙ·¤æÚUè Ù ãUôÙð ·ð¤ ·¤æÚU‡æ ©Uٷ𤠷ë¤çá ©UʿÂæ¼Ù ×ð′ ßëç¼+Ï ÙãUè′ ãUô ÚUãUè ãñUĐ Şâ·ð¤ ·¤æÚU‡æ ©U‹āð'U ©Uٷ𤠟æ× °ß¢ Üæ»Ì ·¤è ©Uç¿Ì ÜæÖ ÙãUè′ ç×Ü ÂæÌæ ãñUĐ Şââð ©UÙ·ð¤ ÁèßÙ SÌÚU ×ð′ âæ×æ‹Ø âéľæÚU Öè ÙãUè ¥æ ÚUãUæ ãñUĐ »ýæ× ×ð′ ÂýæØÑ »ôÕÚU ¹æ¼ ·¤æ ©UÂØô» ¥´Ø‹Ì ·¤× ׿˜ææ ×ð′ ç·¤Øæ ÁæÌæ ãñU, ŞâçÜØð »ýæ×è‡æô′ ·¤ô Ì·¤Ùè·¤è [™]ææÙ ¼ðÙæ ¥æßàØ·¤ ãñU ÌÖè »ýæ×è‡æ ·ë¤çá ·ð¤ ÿæð æ ×ð′ çß·¤æâ ·¤ÚU â·¤Ìð ãñ′UĐ

{.v ·ë¤çá Öêç× ·ð¤ Âý·¤æÚU

- ¹ÚUèȤ ----- ãðU€ÅðUØÚU
- ÚUÕè (¼ô ȤâÜè) ------ ãðU€ÅðUØÚU
- 羯¼ (»×èü ·ð¤ âר ãUôÙð ßæÜè ȤâÜð′) -

ÌæçÜ·¤æ ·ý¢¤. w{ - ·ë¤çá Öêç× ·ð¤ Âý·¤æÚU

¹ÚUèȤ (⁰·¤Ç,U)	ÚUÕè (¼ô ȤâÜè) (°·¤Ç,U)	ÁæØ¼ (»×èü ð¤ âר ãUôÙð ßæÜè ȤâÜð′)	ȤâÜ ¿·ý¤
		(ลีฮัน€ÅฮันØน์น)	

{.w ȤâÜ ¿∙ý¤

»ýæ×è‡æ âãUÖæ»è â×èÿææ ·ð¤ ¼õÚUæÙ ØãU ÁæÙ·¤æÚUè ç×Üè ç·¤ »ýæ×ßæâè ïæÙ ·¤è Õ饿§ü ·¤ÚUÌð ãñU çÁÙ×ð′ Õ饿§ü ×é**2** ØÌÑ ÁêÙ, ÁéÜæ§ü ×ð′ ãUôÌè ãñU ÌÍæ ·¤ÅUæ§ü ¥€ÅêUÕÚU ÌÍæ Ùß•ÕÚU ·ð¤ ׿ãU ×ð′ ·¤è ÁæÌè ãñUĐ §â·ð¤ ¥Üæßæ »ýæ×ßæâè ©UÇ,U¼, ×ꢻ ·¤è Öè Õ饿§ü ·¤ÚUÌð ãñUĐ

{.x çâ¢;æ§ü

·ë¤çá ÂýÏæÙ ÃØßâæØ ãUôÙð ·ð¤ ÕæßÁê¼ ØãUæ¡ ÂÚU ç⢿æ§ü ·ð¤ âèç×Ì âæÏÙ ãñUĐ ØãUæ¡
·¤è ·ë¤çá ×镨ÌÑ ßáæü ÂÚU ãUè çÙÖüÚU ãUôÌè ãñUĐ ØãUæ¢ ·¤æ ·é¤Ü Á×èÙ ——— ÂýçÌàæÌ Á×èÙ
çâ¢ç¿Ì ãñUĐ ç⢿æ§ü ·ð¤ ×镨 âæÏÙ ÌæÜæÕ ·é¤¥æ; °ß¢ ÙæÜæ ãñ′UĐ çÁâ×ð′ âð ¥çÏ·¤ÌÚU ÌæÜæÕ ß
·é¤°¡ »×èü ×ð′ âê¹ ÁæÌð ãñ′UĐ ÁÜ â¢ÚUÿæ‡æ ·ð¤ ·é¤ÀU ©U徯 ç·¤Øð »Øð ãñU¢Đ

{.y ȤâÜ ¿·ý¤ ×ð′ ÂçÚUßÌüÙ

»ýæ×è‡æ â×èÿææ ·ð¤ âר »ýæ×è‡æô′ âð ȤâÜ ¿·ý¤ ·ð¤ ÂçÚUſSÌüÙ ·ð¤ â¢Õ¢Ï ×ð′ ÂêÀðU ÁæÙð ÂÚU ÁæÙ ·¤æÚUè ç×Üè ç·¤ ·é¤Ü — âð — ÂýçÌàæÌ »ýæ×è‡æô′ ¼÷ßæÚUæ ſsÌü׿٠ȤâÜ ¿·ý¤ ×ð′ ·¤ô§ü ÂçÚUſSÌüÙ ÙãUè′ ·¤ÚUÌð ãñ′UĐ ×æ~æ — âð — ÂýçÌàæÌ Üô» ȤâÜ ¿·ý¤ ×ð′ ÂçÚUſSÌüÙ ·¤ÚUÌð ãñ′UĐ §â â×èÿææ ·ð¤ âר ØãU çßç¼Ì ãéU¥æ ç·¤ ȤâÜ â¢Õ¢Ïè çßàæðá Âý·¤æÚU ·¤è ÁæÙ ·¤æÚUè ¼ðÙæ ¥æßàØ·¤ ãñU °£¢ çßçÖ‹Ù Âý·¤æÚU ·ð¤ Âýçàæÿæ‡æô′ ·¤è ¥æßàØ·¤Ìæ ãñUĐ âæÍ äUè çßçÖ‹Ù â¢SÍæ¥ô¢ ·ð¤ °€âÂôÁÚU çßçÁÅU ·¤ÚUæØæ Áæ° Ìæç·¤ ¥æÏéçÙ ·¤ Ì·¤Ùè·¤è ·¤è ÁæÙ ·¤æúUè Üð·¤ÚU ¥ÂÙæ ¥æçſü·¤ Âÿæ ×ÁÕêÌ ·¤ÚÔ′UĐ Üô»ô′ ×ð′ Ù§ü ç·¤S× Ìĺæ Ù§ü Ì·¤Ùè·¤ ·ð¤ ÂýçÌ Áæ»M¤·¤Ìæ ÜæÙð ·¤è ¥æßàØ·¤Ìæ ãñUĐ

.ý¤xæ¢. ¤	.¤æØ ü	ßá ü	â¢●Ø æ	SÍÜ •¤è ÁæÙ•¤æÚU è	¥Ùé׿çÙ Ì Üæ»Ì
ν					
w					
x					
у					
Z					

 $\left| \underbrace{\mathbb{E}}_{\mathbf{x}} \left[\widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{y}}_{\mathbf{x}} \cdot \mathbf{w} \right] - \cdot \underbrace{\mathbb{E}}_{\mathbf{x}} \left[\widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{x}}_{\mathbf{x}} \cdot \mathbf{w} \right] \right] \\ = \cdot \underbrace{\mathbb{E}}_{\mathbf{x}} \left[\widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{x}}_{\mathbf{x}} \right] \\ = \cdot \underbrace{\mathbb{E}}_{\mathbf{x}} \left[\widehat{\mathbf{x}}_{\mathbf{x}} \cdot \widehat{\mathbf{x}}_{\mathbf{x$

ÁÜ â¢ÚUÚUÿæ‡æ ãðUÌé Üfæé Õæ¢Ï, ¿ð·¤ ÇðU×, SÅUæò ÇñU× ¥æç¼ ·¤æ çÙ׿ü‡æ ç·¤Øæ ÁæÙæ ¿æçãU°Đ

¥ŠØæØ - |

Âà
æéÂæÜÙ (©UÂÜŽĨÌæ °ß¢ ÏæÚU‡æ ÿæ×Ìæ)

»ýæ× ------- ×ð′ ÂØæüŒÌ ÂàæéÏÙ ãñU ç·¤‹Ìé ÂàæéÏÙ ·¤æ ¥æÁèçß·¤æ ×ð′ ·¤ô§ü Øô»¼æÙ ÙãUè′ ãñUĐ ¥çÂÌé ÂàæéÏÙ ¼÷ßæÚUæ ¥ßñÏ ¿ÚUæ§ü âð ßÙô′ ·¤ô ãUæçÙ Âãé¡U¿ ÚUãUè ãñUĐ »ýæ× -------×ð′ ©U‹ÙÌ ç·¤S× ·ð¤ Âàæé¥ô¢ ·¤æ ¥Öæß ãñUĐ

»ýæx .ð¤ .é¤Ü Âàæé¥ô¢ .¤è ⢕Øæ ------- §.¤æ§ü ãñU ÁÕç.¤ »æjß ×ð′ »æØ .¤è ⢕Øæ -------

ãñUĐ »æØ ·ð¤ ÕÀUÇ,ðU ·¤è â¢●Øæ ------, ÕñÜ ------, Õ·¤ÚUè -----, Öñ'â ------ Ĭĺæ Öñ¢âæ -----

---- ãñUÐ »ýæ× ×ð′ ©UÂÜŽÏ Âàæé¥ô¢ ·¤æ çßàÜðá‡æ ·¤ÚU ÂýçÌàæÌßæÚU ÁæÙ·¤æÚUè Ùè¿ð ÌæçÜ·¤æ

·ð¤ ¼÷ßæÚUæ çßàÜðçáÌ ãñUĐ

•¤æØü

læçü·¤æ ·ý¢¤. w} - Âàæé ¥æÕæ¼è âð â¢Õ¢çil Áæù·¤æúUè

Âàæé	âæ¢ÇU	Öñ'â	Öñ′âæ	ÕñÜ	»æØ ∙§¤	»æØ	Õ.¤ÚUè	¥∢Ø	∙é¤Ü
					ÕÀUÇ,ðU				Âàæé
©UÂØô»è Âàæé¥ô¢									
.¤è â¢●Øæ									
¥ÙéÂØô»è Âàæé¥ô¢									
.¤è â¢●Øæ									

»ýæ× ×ð′ ------ »æØß ------ Öñ′â ãUôÙð ·ð¤ ÕæßÁê¼ Öè °·¤ Öè ÇðUØÚUè ÙãUè ãñUĐ ÇðUØÚUè ÃØßâæØ ãðUÌé »ýæ×è‡æô′ ·¤ô ÂýðçÚUÌ ç·¤Øæ Áæ â·¤Ìæ ãñUĐ

»ýæ× ·¤è ·é¤Ü Âàæé ⢕Øæ ------ ãñU, §â·ð¤ âæÍ ãUè Âàæé¥ô¢ ·¤è ¼éÏæL¤ ÿæ×Ìæ Ù ãUôÙð âð ©U‹ÙÌ ç·¤S× ·ð¤ Âàæé¥ô¢ ·¤ô ÂæÜÙð ·ð¤ çÜØð »ýæ×è‡æô′ ·¤ô Âýô^âæçãUÌ ç·¤Øð ÁæÙð ·¤è ¥æßàØ·¤Ìæ ãñUĐ

âæl ãUè â×èÿææ d¤ ¼õÚUæÙ ØãU Öè ÁæÙÙð ×ð′ ¥æØæ ãñU ç.¤ Âàæé¥ô¢ ·¤ô ¥çÏ·¤ ⢕Øæ ×ð′ ÚU'Ùð âð ¥æçlü.¤ çSlçl ÂÚU ÂýÖæß ÂÇ,U ÚUãUæ ãñU, €Øô′ç.¤ ØãUæ; Üô» ¥ÙæßàØ·¤ Âàæé¥ô¢ ·¤æ 徆Ù ·¤ÚUÌð ãñ′U °S¢ ©UÙ·¤ô ç'ÜæÙð d¤ çÜØð líæ ;úUæÙð ãðUÌé âר °S¢ ïÙ ¹;ü ·¤ÚUÌð ãñ′UĐ °ðâð Âàæé¥ô¢ âð ·¤ô§ü ÜæÖ ÙãUè′ ç×Ü ÚUãUæ ãñU °S¢ ·¤Áü ÕÉ,UÌæ ÁæÌæ ãñUĐ §â ·¤æÚU‡æ ©U‹ãð′U ØãU Öè ׿»ü¼àæüÙ ç¼Øæ ÁæØð ·¤è ©UÂØô»è Âàæé¥ô¢ ·¤ô ãUè ÂæÜæ ÁæØðĐ ¥çï·¤ ÁæÙßÚU ãUôÙð âð ¥ßñï ;úUæ§ü líæßÙ ·¤æ ¼ôãUÙ Öè ¥çï·¤ ãUô úUãUæ ãñUĐ

¥ŠØæØ - }

ÃØßâæØ ¿·ý¤

»ýæ× ×ð′ ×镨 ÃØßâæØ ·ë¤çá ãñUĐ »ýæ×è‡æÁÙ ×镨ÌÑ ------ ׿ãU ·ë¤çá ·¤ÚUÌð ãñU ¥õÚU Õæ·¤è âר ÚUôÁ»æÚU ©UÂÜŽÏ Ù ãUôÙð ÂÚU ×Á¼êÚUè ß ¥‹Ø ·¤æØü ·¤ÚUÌð ãñUĐ ØãUæ¢ ·é¤ÀU ãUè ÂçÚUßæÚU SßÚUôÁæÚU ·ð¤ ÿæð æ ·¤ô ¥ÂÙæ°¢ ãéUØð ãñU çÁÙ·¤è ÁæÙ·¤æÚUè ¥æ»ð Ìæçü·¤æ ·ý¢¤ ------ ×ð′ ¼è »§ü ãñUĐ »ýæ× ×ð′ ÁÙâãUÖæ»è â×èÿææ ·ð¤ ¥¢Ì»üÌ ØãU çßç¼Ì ãéU¥æ ç·¤ ¥»SÌ âð çâÌ•ÕÚU Ì·¤ ¥çÏ·¤ÌÚU »ýæ×è‡æ ·ë¤çá ·¤æØü ãðUÌé ÕèÁ, ¹æ¼ ¥æç¼ ·¤æ ·¤æØü ¿ÚU× âè׿ ÂÚU ãUôÌæ ãñUĐ

»ýæ× ×ð′ âãUÖæ»è â×èÿææ ·ð¤ ¼õÚUæÙ ØãU ÕæÌ çßç¼Ì ãéU§ü ç·¤ »ýæ× ·ð¤ Üô» ¥»SÌ âð ¥€ÅêUÕÚU Ì·¤ ·ë¤çá ·¤æØü ß ·ë¤çá ×Á¼êÚUè â¢Õ¢çÏÌ ·¤æØü ·¤ÚUÌð ãñUĐ

.¤æØ	ÁÙßÚ	ȤÚUß	׿	¥Âý	×§	Áê	ÁéÜæ	¥»	çâÌ•Õ	¥€ÅêUÕ	Ùß●Õ	ç¼â●Õ
ü	Uè	ÚUè	żü	ñÜ	ü	ù	§ü	SÌ	úu	úu	úu	úu
ßù												
çßÖæ												
» .ð¤												
.¤æØ												
ü												
¥.¤æ												
ü												
ÚUæã												
uì												
.¤æØ												
ü												
∙ë¤çá												
.¤æØ												
ü												
ÂÜæ												
ØÙ												
«¤‡æ												

ÌæçÜ·¤æ ·ý¢¤. w~ - ×õâ× ÂýÖæßè âæÚU‡æè

»ýæ
× $\times \eth'$ ÖôÁÙ ·¤è ©UÂÜŽĪÌæ ÂêÚÔU ßáü ÚUãUÌ
è ãñUĐ

Ⱦ¡ß ×ð′ ------ ç·¤ÚUæÙæ ·¤è ¼é·¤æÙ ãñUĐ ·é¤ÀU ÂçÚUßæÚUô′ ·ð¤ Âæâ ·ë¤çá Öêç× Ù ãUôÙð âð ßð ·ð¤ßÜ ×Á¼êÚUè ÂÚU çÙÖüÚU ÚUãUÌð ãñU¢Đ »ýæ× ×ð′ ·é¤ÀU ÂéàÌñÙè ÃØßâæØ âð 玂,ðU ãéUØð ãñU Áñâð Ùæ§ü, ÏôÕè, ¼Áèü ß ¥‹Ø çÁÙ·¤è ⢕Øæ ÕãéUÌ ·¤× ãñUĐ ×çãUÜæ¥ô¢ ·¤ô çâÜæ§ü Âýçàæÿæ‡æ ç¼Üßæ·¤ÚU ¥çÌçÚU€Ì ¥æØ ç¼Üßæ§ü Áæ â·¤Ìè ãñUĐ

·ý¤×梕¤	۰¤õàæÜ	â¢ ● Øæ	·¤×æ§ü ·¤æ çßßÚU‡æ
1			
2			
3			
4			
5			
6			
7			
8			
9			

ÌæçÜ·¤æ ·ý¢¤. x® - ÃØç€Ì»Ì ·¤õàæÜ (ãéUÙÚU ·ð¤ ¥æÏæÚU ÂÚU) ©UÂÜŽÏÌæ â¢●Øæ

}.v «¤‡æ

»ýæ× ·ð¤ ·é¤ÀU ÂçÚUßæÚUô′ ·ð¤ Âæâ ·ë¤çá Öêç× Ù ãUôÙð âð ß ·ë¤çá ©UÂÁ âèç×Ì ãUôÙð âð ¥ÂÙð ÁèßÙØæÂÙ ãðUÌé ¥ÙæÁ ß ¥‹Ø âæ×ç»ýØô′ ·¤ô ·ý¤Ø ·¤ÚUÙæ ÂÇ,UÌæ ãñUĐ çÁâ ãðUÌé ¥çÏ·¤ÌÚU ÂçÚUßæÚUô′ ·¤ô «¤‡æ ÜðÙæ ÂÇ,UÌæ ãñUĐ

»ýæ×è \pm æ ÁÙ çÙ**n** Ù \cdot ¤æØôZ ãðUÌé «¤ \pm æ ÜðÌð ãñ'U

·ë¤çá â¢Ô¢çÏÌ ·¤æØôZ ãðUÌé - »ýæ×è‡æô′ ·¤ô ÁêÙ âð çâÌ•ÕÚU Ì·¤ ·ë¤çá ·¤æØü ãðUÌé «¤‡æ ÜðÙæ ÂÇ,UÌæ ãñU Áñâð - ÕèÁ, ¹æ¼ ¥æç¼ ãðUÌéĐ »ýæ×è‡æ âãU·¤æÚUè ·ð¤‹ÎýèØ Õñ′·¤, ÖæÚUÌèØ SÅðUÅU Õñ′·¤, ˡÌèâ»É,U »ýæ×è‡æ Õñ′·¤ ¼÷ßæÚUæ «¤‡æ ÜðÌð ãñU, çÁÙ·¤æ ©UÂØô» ×镨ÌÑ ·ë¤çá ·ð¤ ·¤æØü ×ð′ ç·¤Øæ ÁæÌæ ãñUĐ **¥‹Ø -** »ýæ× ·ð¤ ¥çï·¤ÌÚU ÂçÚUßæÚU »ÚUèÕ ß»ü ·ð¤ ãUôÙð ·ð¤ ·¤æÚU‡æ ¥ÂÙð ÁèßÙØæÂÙ ãðUÌé ©UÂØôç»Ìæ â¢Õ¢Ïè âæ×ç»ýØô′ ·¤ô ·ý¤Ø ·¤ÚUÙð ß ¥‹Ø ·¤æÚU‡æô′ â𠫤‡æ ÜðÙð ·¤è ¥æßàØ·¤Ìæ ÂÇ,UÌè ãñUĐ

ÌæçÜ·¤æ ·ý¢¤. xv - Õñ´·¤	
--------------------------	--

Õñ'.¤ô' .ð¤ Ùæ×	»æ¢ß âð Õñ′∙¤ ∙¤è ¼êÚUè	Õñ´·¤ ·¤è âéçßÏæØð´
çÁÜæ âãU·¤æÚUè ·ð¤‹ÎýèØ		
Õñ′.¤		
ÖæÚUÌèØ SÅðUÅU Õñ′∙¤		
À'Ìèâ»É,U »ýæ×è‡æ Õñ'.·¤		

¥ŠØæØ - ~

ÚUôÁ»æÚU °S¢ ÂÜæØÙ

~.v ÚUôÁ»æÚU

------ »ýæ× ¥Ùéâêç¿Ì ÁÙÁæçÌ ÕæãéUËØ ÿæð æ ãñUÐ ØãUæ¡ ÁèßÙ ØæÂÙ ·¤æ ×镨 âæÏÙ ¹ðìè ç·¤âæÙè °S¢ ßÙ ª¤ÂÁ ãñUÐ ØãU »æ¢ß ÌãUâèÜ ------ âð ------ 畤.xè. ¼êÚU ãñUĐ âÚU·¤æÚU ¼÷ßæÚUæ ⢿æçÜÌ ØôÁÙæ¥ô¢ Ì·¤ §Ù·¤è Âãé¡U¿ ÙãUè ãñUĐ ØãUæ; ·¤è ÚUôÁ»æÚU çSíçÌ â¢ÌôáÂý¼ ÙãUè′ ãñUÐ Üfæé °S¢ ·é¤ÅUèÚU ©U¼÷Øô» §â »ýæ× ×ð′ Ù»‡Ø ãñUĐ ·é¤Ü ÁÙâ¢î Øæ ×ð′ àæê‹Ø ÂýçÌàæÌ ×ð′ ÃØç€Ì SßÚUôÁ»æÚU ×ð′ â¢ÜXÙ ãñUĐ »ýæ×ßæçâØô′ ×ð′ ÃØßâæçØ·¤ ·¤õàæÜ çß·¤çâÌ ç·¤Øð ÁæÙð ·ð¤ âæí ãUè »ýæ× ×ð′ ãUè ÚUôÁ»æÚU ·ð¤ ¥ßâÚU ©UÂÜŽÏ ·¤ÚUæØð ÁæÙð ·¤è ¥æßàØ·¤Ìæ ãñUĐ

(\cdot ë¤ÂØæ çÙ•ÙçÜç¹Ì ©Uç \cdot Ì ÁæÙ·¤æçÚUØô′ \cdot ð¤ âæ×Ùð âãUè \checkmark ·¤æ ç \cdot ‹ãU Ü»æØð′ Ìĺæ Øç¼ ¥‹Ø ÁæÙ·¤æÚUè ©UÂÜŽÏ ãñ′U Ìô ©Uâð Öè çÜ'ð′)

ÚÔUçÇUØô âél̈æÚU·¤, âæØ·¤Ü ¼é·¤æÙ, ¿Ùæ-×éÚUæü ©U¼÷Øô», ·ð́′¤¿éßæ ¹æ¼ (ß×èü ·¤•ÂôSÅU) ·ð¤ çÙ׿ü‡æ ·¤æ Âýçàæÿæ‡æ, ¥æØ ßëç¼÷Ï ·¤æØü·ý¤×, ×é»èü ÂæÜÙ, ×ÀUÜè ÂæÜÙ, »õ ÂæÜÙ, Õ·¤ÚUè 徆Ù, ×Ïé ×€¹è ÂæÜÙ, ÚÔUàæ× ·¤èÇ,Uæ ÂæÜÙ, âé¥ÚU ÂæÜÙ, ¥‹Ø Âàæé ÂæÜÙ, ¼ôÙæ ¹ÌÜ ÕÙæÙæ, ׿ç¿â ÕÙæÙæ, ÕèÇ,Uè ÕÙæÙæ, Õæ¢â ·¤æ ¥‹Ø âæ×æÙ ÕÙæÙæ, Õæ¢â ·¤è ÅUô·¤ÚUè, ãUÜßæ§ü, ÖðÇ,U-Õ·¤ÚUè ÂæÜÙ, ç·¤ÚUæÙæ ¼é·¤æÙ, ÚUæÁç×Sĩæè, ÜôãUæÚU ·¤æ ¥‹Ø âæ×æÙ ÕÙæÙæ ß ¥‹Ø ·¤æ Âýçàæÿæ‡æ ç¼Øæ Áæ â·¤Ìæ ãñUĐ

~.w ÂÜæØÙ

ؼ÷Øç »ýæ× ×ð′ ÚUôÁ»æÚU ·¤è ©UÂÜŽİÌæ ÕãéUÌ ¥çÏ·¤ ÙãUè ãñU ç·¤‹Ìé »ýæ×ßæçâØô′ ·¤ô ÂÜæØÙ ·¤ÚUÙð ·¤è ¥æßàØ·¤Ìæ ÙãUè ãUôÌè ãñUĐ

\hat{Y}

»ýæ×è‡æ âãUÖæ»è â×èÿææ

ç¼Ù梷¤ ------ ·¤ô »ýæ× ------ ×ð′ »ýæ×è‡æ âãUÖæ»è â×èÿææ (Âè.¥æÚU.°.) ¥æØôçÁÌ ·¤è »§ü çÁââð

»ýæ×è‡æô′ ·¤è ¥æßàØ·¤ÌæØð′ ™ææÌ ãéU§üĐ

$(\hat{A} \not\land \emptyset \partial \cdot \mathbf{x} \notin U \hat{A} \hat{a} \hat{A} \hat{u} U \cdot \partial \mathbf{x} \hat{a} \hat{x} \hat{I} \hat{A} \hat{e} \cdot \mathbf{x} \hat{x} \hat{U} U \cdot \hat{\mathbf{v}} \cdot \mathbf{x} \hat{\mathbf{z}} \hat{\mathbf{z}} \hat{a} \hat{A} \hat{U} \hat{a} \hat{\mathbf{x}} \hat{\mathbf{z}} \hat{\mathbf{$

¥ŠØæØ - vv

$\dot{A}M$ µÚUÌð âæ×鼿çØ·¤ SÌÚU ÂÚU

âêÿ× ·¤æØü ØôÁÙæ ·ð¤ ¥¢Ì»üÌ »ýæ× ------ ×ð′ »ýæ×è‡æ âãUÖæ»è â×èÿææ ·ð¤ ¼õÚUæÙ çÙ•Ù ÁM¤ÚUÌð »ýæ×è‡æ SÌÚU ÂÚU ©UÖÚU ·¤ÚU âæ×Ùð ¥æ§ü Áô §â Âý·¤æÚU ãñU -

(·ë¤ÂØæ çÙ•ÙçÜç¹Ì ©Uçi ÁæÙ·¤æçÚUØô′ ·ð¤ âæ×Ùð âãUè ✔ ·¤æ ç; ‹ãU Ü»æØð′ Ìĺæ Øç¼ ¥‹Ø ÁæÙ·¤æÚUè ©UÂÜŽÏ ãñ′U Ìô ©Uâð Öè çܹð′)

vv.v ÕðÚUôÁ»æÚUè ·¤è â×SØæ

»ýæx xð' ÚUôÁ»æÚU vð¤ âæÏÙ ©UÂÜŽÏ ÙãUè' ãUôÙð âð »ýæx v𤠥çiv¤ÌÚU Ùߨéßv¤-ØéßçÌØæ; ÕðÚUôÁ»æÚUè v¤è xæÚU ÛæðÜ ÚUãðu ãñ'U ©UÙv¤ô' ¥ÂÙè ¥æÁèçßv¤æ ¿ÜæÙð xð' v¤æÈ¤è âxSØæ¥ô¢ v¤æ âæxÙæ v¤ÚUÙæ ÂÇ,U ÚUãUæ ãñ'UĐ ØãUæ; lðlè x镨 ÃØßâæØ ãñU ¥õÚU ¥çÏÌÚU »ýæxè‡æô' vð¤ Âæâ lðlè ãðUlé Öêçx ÙãUè' ãUôÙð âð ©UÙv¤ô ¥ÂÙè ¥æÁèçßv¤æ ¿ÜæÙð xð' v¤æÈ¤è âxSØæ ãñUĐ »ýæx xð' lv¤çÙv¤è ÃØßâæØ âð ÁéÇ,ðU Üô» Öè ÕãéUl ãUè v¤x ãñUĐ §vãð'U lv¤Ùèv¤è Âýçàæÿæ‡æ ¼ðv¤ÚU ÚUôÁ»æÚUxé'è ÃØßâæØ ©UÂÜŽï v¤ÚUßæØæ ÁæÙæ ¿æçãUØðĐ

vv.w ç⢿æ§ü •¤è â×SØæ

»ýæx ------ xð' çâ¢;æ§ü ·¤è ©Uç;Ì âéçßïæ Ù ãUôÙð ·ð¤ ·¤æÚU‡æ »ýæxßæâè ßáü xð' ·ð¤ßÜ °·¤ ãUè ȤâÜ ÜðÌð ãñU ¥‹Ø ȤâÜ ÙãUè' Üð ÂæÌð ãñ'UĐ çÁâ·ð¤ ·¤æÚU‡æ ÚUÕè ·¤è ȤâÜ ÂýÖæçßÌ ãUôÌè ãñUĐ çâ¢;æ§ü ·¤è âéçßïæ Ù ãUôÙð ·ð¤ ·¤æÚU‡æ »ýæx ------ xð' ֻܻ âÖè ÂçÚUßæÚU ÂýÖæçßÌ ãUô ÚUãðU ãñ'UĐ §â·ð¤ çܰ »ýæx xð' ------ Å÷UØêÕßðÜ ·¤æ çÙ׿ü‡æ ç·¤Øæ Áæ â·¤Ìæ ãñUĐ çÁââð ·¤è »ýæxè‡æô' ·ð¤ ·ë¤çá xð' çâ¢;æ§ü ©UÂÜŽï ãUô â·ð¤Đ

vv.x ÂðØ ÁÜ •¤è â×SØæ

»ýæx ------ xð' âãUÖæ»è âxèÿææ ·ð¤ ¥¢Ì»üÌ ØãU çßç¼Ì ãéU¥æ ç·¤ »ýæxè‡æô' ·¤ô »xèü ·ð¤ ç¼Ùô' xð' àæé¼÷Ï ÂðØ ÁÜ ·¤è ¥âéçßïæ ãUôÌè ãñUĐ çÁâ·¤æ Âýxé¹ ·¤æÚU‡æ »ýæx xð' ©UÂçSIÌ Å÷UØêÕßðÜ, ãñU‡ÇU• ·¤æ ¹ÚUæÕ ãUôÙæ ÌÍæ ŞÙ·¤è ⢕Øæ xð' ·¤xè ãUôÙæ ÂæØæ »ØæĐ

vv.y çß¼÷ØéÌ •¤è â×SØæ

»ýæ× ×ð′ çÕÁÜè ·¤è ¥æÂêçÌü ÙãUè′ ãUô Âæ ÚUãUè ãñU °ß¢ »Üè ×ð′ Üæ§üÅU Öè ÙãUè ãñU çÁâ·ð¤ ·¤æÚU‡æ ßð ¥¢ÏðÚÔU ×ð′ ÚUãUÙð ·¤ô ×ÁÕêÚU ãñU ß ç⢿æ§ü ¥æç¼ ·¤æØü ãðUÌé çÕÁÜè ·¤è â×SØæ ãñUĐ »ýæ× ×ð′ ©Uç¿Ì SÍæÙô′ ÂÚU ÙØð ÅþUæ¢âȤæ×üÚU ܻ߿Øð ÁæØð Ìæç·¤ çÕÁÜè ·¤è ¥æÂêçÌü âãUè ÌÚUè·ð¤ âð ãUô ¥õÚU ¹¢Öð ÂÚU SÅþUèÅU Üæ§üÅUU Ü»æØð ÁæØð çÁââð »æ¢ß ×ð′ ¥ÏðÚUæ Ù ãUôĐ

vv.z Ȇè ·¤è¿Ç,U ·¤è â×SØæ

»ýæ× ·ð¤ ¥¢¼ÚU €·¤è âÇ,U·ð¤ ß ÂæÙè ·ð¤ çÙ·¤æâè ·¤è ©Uç;Ì ÃØßSÍæ Ù ãUôÙð ·¤è ßÁãU âð ÕæçÚUàæ ·ð¤ âר ÚUæSÌô′ ×ð′ ·¤è;Ç,U ãUô ÁæÌæ ãñU ¥õÚU ;ÜÙð çȤÚUÙð ×ð′ ·¤æÈ¤è ·¤çÆUÙæ§ü ãUôÌè ãñUĐ »ýæ× ·¤è âÇ,U·ð¤ ·¤"æè ãñU °ß¢ ©UÕÇ,U-¹æÕÇ,U ãñU, »Ç÷UÉUô′ ×ð′ ÂæÙè ÖÚUæ ÚUãUÌæ ãñUĐ

$vv.{A \ddot{U} S \tilde{z} \delta \tilde{b} \sim \tilde{A} \tilde{z} \delta \tilde{z$

»ýæx ×ð' ------ læüæÕ añu, çÁâ×ð' ßáü ÖÚU Âæùè ·¤è ©UÂÜŽÏlæ ùãUè' ÚUãUlè añUĐ »×èü ×ð' ¥çi·¤ÌÚU læüæÕô' ·¤æ ÁÜSÌÚU ·¤æÈ¤è ·¤× ãUô Áælæ ãñU °ß¢ âê' Áælð ãñU çÁâ·ð¤ ·¤æÚU‡æ »ýæ×ßæçâØô' ·¤ô Âæùè ·¤è â×SØæ ãUô Áælè ãñU ¥õÚU »ýæ×è‡æô' ·¤ô ç⢿æ§ü, çùSlæÚUè ·¤æØü ãðulé Âæùè ·¤è ·¤×è ·¤æ âæ×ùæ ·¤ÚUùæ ÂÇ,Ulæ ãñUĐ ¥çi·¤ÌÚU læüæÕô' ×ð' ·ð¤ßÜ ÕæçúUàæ ·ð¤ âר ãUè Âæùè ÚUãUlæ ãñU ß ©Uù·¤è »ãUÚUæ§ü ¥çi·¤ ù ãUôùð âð ©Uù×ð' Âæùè ·¤è ©UÂÜŽÏlæ ßáü ÖÚU ùãUè' ÚUãUlè ãñU ¥õÚU ------ ×ãUèùð' ×ð' ãUè âê' Áælð ãñUĐ §â·ð¤ çü° »ýæ× ·ð¤ læüæÕô´ ·¤æ »ãUÚUè·¤ÚU‡æ °ß¢ læüæÕ çù׿ü‡æ ç·¤Øæ Áæùæ ¥æßàØ·¤ ãñUĐ

vv. aæx鼿çØ•¤ÖßÙ

»ýæx xð' âßðü vð¤ âxØ SÂcÅU ãéU¥æ çv¤ »ýæx xð' âæx鼿çØv¤ ÖßÙ ÙãUè ãñU çÁâvð¤ v¤æÚU‡æ âxSÌ »ýæxßæçâØô′ v¤ô ÕñÆUv¤, âæxæçÁv¤ âxæÚUôãU °ß¢ âæxæçÁv¤ ©U^âßô′ ¥æç¼ vð¤ ¥æØôÁÙ xð′ ÂÚÔUàææÙè ãUôÌè ãñU ¥ÌÑ »ýæx xð′ ------ âæx鼿çØv¤ ÖßÙ çÙxæü‡æ v¤è ¥'ØvÌ ¥æßàØv¤Ìæ ãñUĐ

vv.} ÂæÙè Å¢U.¤è .¤è â×SØæ

»ýæ× ×ð′ ©UÂÜŽÏ ÂðØÁÜ S`æôÌô′ ·¤è ⢕Øæ ·¤× ãñU ¥õÚU Áô ©UÂÜŽÏ ãñU, ßð ·¤æÈ¤è ÂéÚUæÙð ãñU çÁ‹ãð′U ×ÚU•×Ì ·¤è ¥æßàØ·¤Ìæ ãñUĐ §â·ð¤ ¥çÌçÚU€Ì »×èü ·ð¤ ç¼Ùô′ ×ð′ §Ù ·é¤¥ô¢ ß Å÷UØêÕßðÜô′ ·¤æ ÁÜ SÌÚU ·¤æÈ¤è Ùè¿ð ¿Üæ ÁæÌæ ãñU, çÁââð ÂèÙð ·ð¤ ÂæÙè ·¤è â×SØæ ãUô ÁæÌè ãñUĐ ¥ÌÑ »ýæ× ×ð′ ÙÜ-ÁÜ ØôÁÙæ ·ð¤ ÌãUÌ »ýæ× ×ð′ ÂæÙè Å¢U·¤è ·¤æ çÙ׿ü‡æ ç·¤Øð ÁæÙð ·¤è ¥æßàØ·¤Ìæ ãñUĐ

vv.~ Å÷UØêÕßðÜ ·¤è â×SØæ

»ýæ× ×ð′ Å÷UØĉÕßðÜ ·¤è â×SØæ ãñU çÁâ·ð¤ ·¤æÚU‡æ »ýæ×è‡æô′ ·¤ô ÂæÙè ·¤è â×SØæ ·¤æ âæ×Ùæ ·¤ÚUÙæ ÂÇ,UÌæ ãñUĐ §â·ð¤ çܰ »ýæ× ×ð′ Å÷UØĉÕßðÜ ·¤æ çÙ׿ü‡æ ç·¤Øæ Áæ° çÁââð »ýæ×ßæçâØô′ ·ð¤ ÂèÙð ·ð¤ ÂæÙè ·¤è â×SØæ ·¤æ â׿ÏæÙ ãUôĐ

vv.v[®] Âàæé SßæS‰Ø ·ð¤<ĥý

»ýæ× ×ð′ Âàæé SßæS‰Ø ·ð¤‹ĺý ÙãUè′ ãUôÙð ·ð¤ ·¤æÚU‡æ »ýæ×è‡æô′ ·¤ô ¥ÂÙð ×ßðàæèØô′ ·ð¤ ŞÜæÁ ·¤ÚUæÙð ×ð′ â×SØæ¥ô¢ ·¤æ âæ×Ùæ ·¤ÚUÙæ ÂÇ,UÌæ ãñU, çÁââð âר ×ð′ ŞÜæÁ ÙãUè′ ãUôÙð ·ð¤ ·¤æÚU‡æ ×ßðàæèØô′ ·¤è ×ë′Øé Öè ãUô ÁæÌè ãñUĐ Şâ·ð¤ çü° »ýæ× ×ð′ Âàæé SßæS‰Ø ·ð¤‹Ĵý ¹ôÜÙð ·¤è ¥çÌ ¥æßàØ·¤Ìæ ãñUĐ çÁââð ×ßðàæèØô′ ·¤ô ©Uç¿Ì ŞÜæÁ ãUô â·ð¤Đ

vv.vv SßæS‱Ø ·ð¤<Ìý

»ýæ× ×ð′ SßæS‱Ø ·ð¤‹ĺý Ù ãUôÙð âð »ýæ×ßæçâØô′ ·¤ô ·¤æÈ¤è ·¤çÆUÙæ§ü ·¤æ âæ×Ùæ ·¤ÚUÙæ ÂÇ,UÌæ ãñUÐ »ýæ× ×ð′ ç¿ç·¤^âæ ·¤è ·¤ô§ü ÃØßSÍæ ÙãUè′ ãñUĐ Õè׿ÚU ãUôÙð ÂÚU »ýæ×è‡æ ÛææÇU-Èꢤ·¤ ß fæÚÔUÜê §ÜæÁ ·¤ÚUÌð ãñU ¥õÚU ©UÙ·¤ô ©UÂØé€Ì §ÜæÁ ·¤è âéçßïæ Ù ç×ÜÙð âð ÁæÙ ·¤æ ÌIúUæ ÚUãUÌæ ãñUĐ

vv.vw çàæÿææ â¢Õ¢Ïè â×SØæ

Ⱦ¢ß ×ð′ ©U"æÌÚU ׿ŠØç×·¤ àææÜæ ÙãUè′ ãUôÙð ·¤æÚU‡æ ÂæÜ·¤ Õ"æô′ ·¤ô ¥æ»ð ÂÉ,UæÙð ×ð′ ⢷¤ô¿ ·¤ÚUÌð ãñ′U çßàæðá M¤Â âð §â·¤æ ÂýÖæß ÕæçÜ·¤æ¥ô¢ ·¤è ÂÉ,Uæ§ü ÂÚU ÂÇ,U ÚUãUæ ãñU ¿ê¡ç·¤ ÂæÜ·¤ ©U‹ãð′U ¼êâÚÔU »æ¢ß ×ð′ Áæ·¤ÚU ÂÉ,UÙð ÙãUè′ ¼ðÙæ ¿æãUÌðĐ w.vx. Áæ»M¤·¤Ìæ ·¤æ ¥Öæß çàæçÿæÌ Üô»ô′ ·¤æ ÂýçÌàæÌ ------% ãUôÙð ·ð¤ ÕæßÁê¼ ØãUæ_i Üô» Ù ·ð¤ßÜ àææâ·¤èØ ØôÁÙæ¥ô¢ ÕçË·¤ Ù§ü Ì·¤Ùè·¤ âð Öè ¥ÙçÖ™æ ãñ′UĐ Üô»ô′ ·¤ô ãUÚU ÿæð æ ·ð¤ ÂýçÌ Áæ»M¤·¤ ·¤ÚUÙð ·¤è ¥æßàØ·¤Ìæ ãñUĐ

¥ŠØæØ - vw

ÃØç€Ì»Ì ·¤õàæÜ (ãéUÙÚU ·ð¤ ¥æÏæÚU ÂÚU) ¥æßàØ·¤Ìæ °ß¢ ¥æ¢·¤ÜÙ

»ýæ×è‡æ âãUÖæ»è â×èÿææ ·ð¤ ¼õÚUæÙ »ýæ× ------ ×ð′ (ÃØç€Ì»Ì SÌÚU ÂÚU) âßðü ·ð¤ ¥æÏæÚU ÂÚU çÙ•Ù ·¤æØôZ ÂÚU ¥ÂÙè ·¤æØü·é¤àæÜÌæ ¼Áü ·¤ÚUæØè ãñUĐ (**·ë¤ÂØæ çÙ•Ùçüç¹Ì ©Uç¿Ì ÁæÙ·¤æçÚUØô′ ·ð¤ âæ×Ùð âãUè ∨ ·¤æ ç¿‹ãU Ü»æØð′ ÌÍæ Øç¼ ¥«Ø**

vw.v ÚUæÁç×S~æè

»ýæ×è‡æ âãUÖæ»è â×èÿææ ·ð¤ ¥¢Ì»üÌ ØãU çßç¼Ì ãéU¥æ ç·¤ »ýæ× ×ð′ Áô ¥ÙéÂÁ檤 Á×èÙ ãñU, ©Uâ·¤è ç×Å÷UÅUè âð §üÅU ÕÙæØæ Áæ â·¤Ìæ ãñUĐ §â Á×èÙ ÂÚU §üÅU ÖÆ÷UÆðU ·¤æ çÙ׿ü‡æ ç·¤Øæ Áæ â·¤Ìæ ãñU ĬÍæ §üÅU ÖÆ÷UÆðU ·ð¤ çܰ «¤‡æ ©UÂÜŽÏ ·¤ÚUæØæ ÁæÌæ ãñU çÁââð ©Uâ Ⱦ¢ß ×ð′ ©UÂçSÍÌ ÕðÚUôÁ»æÚUô′ °S¢ ÚUæÁ ç×Sĩæè ·ð¤ ¼÷ßæÚUæ §üÅU °S¢ ·¤ßðÜê ·¤œ çÙ׿ü‡æ ·¤ÚU ©UÙ·¤è ÚUôÁè ÚUôÅUè ·¤è ÃØßSÍæ ©U‹ãUè′ ·ð¤ »ýæ× SÍæÙ ×ð′ ãUô â·¤Ìè ãñU Ĭíæ ©UÙ·¤ô ¥‹Ø SſæÙô′ ÂÚU ÚUôÁ»æÚU ãðUÌé ÂÜæØÙ ÙãUè ·¤ÚUÙæ ÂÇ,ðU»æĐ §â Âý·¤æÚU âð ÂÜæØÙ ·¤ô Öè ÚUô·¤æ Áæ â·¤Ìæ ãñUĐ

vw.w ÜôãUæÚU

â×èÿææ ÕñÆU·¤ ×ð′ »ýæ×ßæçâØô′ Ùð ÜôãUæÚUè ·ð¤ ·¤æ× ×ð′ ¥æ×¼æÙè ·¤è ·¤æÈ¤è ¥'ÀUè â∎ ÖæßÙæ ÃØ€Ì ·¤èÐ ÜôãUæÚUè ·¤æØü ×ð′ »æ¢ß ßæÜô′ Ùð ¥ÂÙè ·é¤àæÜÌæ ÕÌæ§ü, Üðç·¤ऄæ¢ß ×ð′ ©UÂÜŽÏ âæÏÙ Ù ãôÙð âð ÌÍæ »ýæ×è‡æ SÌÚU ÂÚU ·¤æØü ©UÂÜŽÏ Ù ãUôÙð âð ©UÙ·¤æ âר Õð·¤æÚU ¿Üæ ÁæÌæ ãñUĐ §â âר ·¤æ â¼éÂØô» ·¤ÚUÙð ·ð¤ çܰ °ß¢ ÁèßÙ SÌÚU ×ð′ âéÏæÚU ·¤ÚUÙð ·ð¤ çܰ »ýæ× ×ð′ ©UÂçSIÌ ·¤æÚUè»ÚUô′ ·¤ô ÙØæ Âýçàæÿæ‡æ °ß¢ ÚUôÁ»æÚU ©UÂÜŽÏ ·¤ÚUæÙð ·¤è

Ş'ÀUæ ÃØ€Ì •¤è ãñUĐ Øç¼ ŞÙè ׿¢»ô′ ÂÚU ŠØæÙ ç¼Øæ ÁæÌæ ãñU, Ìô »ýæ×è‡æ SÌÚU ÂÚU ØãU •¤æØü •¤ÚU•ð¤ ÁèßÙ SÌÚU ×ð′ âéÏæÚU ãUô ╤Ìæ ãñUĐ

vw. x Õæ¢â ·¤è ÅUô·¤ÚUè °B¢ ¥·Ø çàæË ·¤æØü

ØãU ·¤æØü âç!⁄4Øô′ âð »ýæ×è‡æô′ 1⁄4÷ßæÚUæ ç·¤Øæ Áæ ÚUãUæ ãñUÐ Şâ ·¤æØü ×ð′ Üô»ô′ ·¤ô â¢âæÏÙ Öè ©UÂÜŽĨ ãUô ÁæÌð ãñU ÌÍæ ¥æ×!⁄4Ùè Öè ¥Âðÿææ·ë¤Ì ãUô ÁæÌè ãñUÐ Ōæ¢â ·¤è ŌÙè ßSÌé°ð′ Ùæ ·ð¤ßÜ »ýæ×è‡æ ÁèßÙ ×ð′ ©UÂØô»è ãñU ÕçË·¤ àæãUÚUè ÁèßÙ ×ð′ Öè ØãU 1⁄4ñçÙ·¤ ©UÂØô» ·¤è ßSÌé ÕÙ »§ü ãñUÐ Ōæ¢â ·¤è ÕÙè çßçÖ‹Ù Âý·¤æÚU ·¤è ÅUô·¤çÙØæ¡, âêÂæ, ÂÚUæü, ÛææÂè §^Øæ'⁄4è Ìô ÕæÁæÚU ×ð′ çÕ·¤Ìè ãUè ãñU ÂÚU.ìé ¥æÁ ·ð¤ Á׿Ùð ×ð′ Ōæ¢â ·ð¤ ȤçÙü¿ÚU Öè ¿ÜÙ ×ð′ ãñUĐ Şâçܰ »ýæ×è‡æô′ ·¤æ ·¤ãUÙæ ãñU ç·¤ ¥»ÚU ©U‹ãð′U â×éç¿Ì Âýçàæÿæ‡æ °ß¢ ÜôÙ ç×Üð Ìô ßð ¥ÂÙð ÁèßÙ SÌÚU ·¤ô ©UÂÚU ©UÆUæ â·ð¤»ð′Đ

vw.y ãUÜßæ§ü

»ýæ×è‡æ âãUÖæ»è â×èÿææ ·ð¤ âר »ýæ× ·ð¤ Øéßæ¥ô¢ °ß¢ ¹æÙæ ÕÙæÙð ·ð¤ ·¤æØü ×ð′ Ü»ð Üô»ô′ Ùð Âýçàæÿæ‡æ ·¤è ¥æßàØ·¤Ìæ ÕÌæØè ãñU, çÁââð »ýæ× ·ð¤ çàæçÿæÌ ÕðÚUôÁ»æÚU Øéß·¤-ØéßçÌØô′ ·¤ô ÂØæüŒÌ Âýçàæÿæ‡æ ÂýæŒÌ ·¤ÚU Sߨ¢ ·¤æ ÃØßâæØ ¿æÜê ·¤ÚU â·¤Ìð ãñUĐ §Ù Üô»ô′ ·¤æ ·¤ãUÙæ ãñU ç·¤ âé¹-¹⁄4é¹ ·ð¤ âæÚÔU ·¤æØü·ý¤×ô′ ×ð′ ãUÜßæ§ü ·¤è ¥æßàØ·¤Ìæ ÂÇ,UÌè ãUè ãñU Şâçܰ Âýçàæÿæ‡æ ·ð¤ Õæ¹⁄a ·¤æ× ·¤è ·¤×è ÙãUè ãUô»èĐ §â ·¤æØü âð ãUôÙð ßæÜð ÜæÖ âð ©UÂÚUô€Ì âÖè Üô»ô′ ·¤æ ÁèßÙ SÌÚU ·¤ô ª¡¤¿æ ©UÆUæØæ Áæ â·¤Ìæ ãñUĐ

vw.z Âàæé ÂæÜÙ

Şâ »ýæx ·ð¤ ·é¤ÀU Üô» â×êãU ·ð¤ ׿ŠØ× âð ÖðÇ,U, Õ·¤ÚUè, âé¥ÚU °ß¢ ×ÀUÜè ÂæÜÙ
·¤ÚUÙæ ¿æãUÌð ãñUĐ ©UÙ·¤æ ·¤ãUÙæ ãñU ç·¤ ØãU ·¤æØü ·¤× Âê¡Áè ×ð′ ÕãéUÌ ¥çï·¤ ¥æ×¼È ¼ð
â·¤Ìæ ãñUĐ ØãU ·¤æØü ×镨ÌÑ ÖðÇ,U ·ð¤ ׿¢â ·¤è çÕ·ý¤è ãðUÌé ç·¤Øæ ÁæØð»æ Ìíæ Şâð Õ¿Ùð ·¤è Öè
â×SØæ ÙãUè ãUô»èĐ ØãUæ; ¥æâ-Âæâ ·ð¤ ÿæð æô′ ×ð′ ׿¢â ·¤è ¹ÂÌ ¥çï·¤ ãñU Ìíæ Şâð Õð¿Ùð ãðUÌé
¼êâÚÔU àæãUÚUô′ ×ð′ Öè â•·ü¤ ç·¤Øæ Áæ â·¤Ìæ ãñUĐ ÖðÇ,U ÂæÜÙ âð ÖðÇ,U ·ð¤ ÕæÜ Öè
©UÂÜŽï ãUô»ð çÁââð ·¤è ª¤Ù ÕÙæÙð ·ð¤ çܰ Õð¿æ Áæ â·¤Ìæ ãñUĐ

vw.{ âæØ·¤Ü ¼é·¤æÙ

§â ·¤æØü ×ð′ ·é¤ÀU Øéßæ ÂýçàæçÿæÌ ãñ′U ÌÍæ ßð Sߨ¢ ·¤æ ÃØßâæØ àæéL¤ ·¤ÚUÙæ ¿æãUÌð ãñUÐ §â ©U!⁄4÷Øô» ×ð′ ·¤× ¹¿ü ×ð′ ¥çÏ·¤ ¥æØ ÂýæŒÌ ·¤è Áæ â·¤Ìè ãñUÐ §â ãðUÌé ¥»ÚU §‹ãð′U Ì·¤Ùè·¤è Âýçàæÿæ‡æ ç×Ü Áæ° Ìô Øð ÕðãUÌÚU É¢U» âð §â ÃØßâæØ ·¤ô ·¤ÚU â·¤Ìð ãñUĐ

vw.| ¿Ùæ-×éÚUæü ©U¼+Øô»

·é¤ÀU »ýæ×è‡æ Øéßæ ¿Ùæ-×éÚUæü ·¤è ÖÅ÷UÅUè ÇUæÜ·¤ÚU ØãU ÃØßâæØ àæéL¤ ·¤ÚUÙæ ¿æãUÌð ãñ′UĐ €Øô′ç·¤ ØãU »ýæ×è‡æ ÿæð~æô′ ×ð′ ÕãéUÌ 'Øæ!⁄4æ Ââ¢!⁄4 ç·¤Øæ ÁæÌæ ãñU §âçܰ §â ÃØßâæØ ·¤è âȤÜÌæ ×ð′ ·¤ô§ü â¢!⁄4ðãU ÙãUè′ ãñUĐ §â ©U!⁄4÷Øô» ×ð′ ·¤× ¹¿ü ×ð′ ¥çÏ·¤ ¥æØ ÂýæŒÌ ·¤è Áæ â·¤Ìè ãñUÐ §â ãðUÌé ¥»ÚU §‹ãð′U Ì·¤Ùèç·¤ Âýçàæÿæ‡æ ç×Ü Áæ° Ìô Øð ÕðãUÌÚU É¢U» âð §â ÃØßâæØ ·¤ô ·¤ÚU â·¤Ìð ãñ′UĐ

vw.} $\cdot \partial' \mathbf{z}_{\xi} \in \mathbb{S}^{2} \cdot \mathbb{Z}^{1/4}$ ($\beta \times \partial \mathbf{u} \cdot \mathbf{z}

â×èÿææ ·ð¤ ¥¢Ì»üÌ ØãU çßç¼Ì ãéU¥æ ç·¤ ¥çÏ·¤æ¢àæÌÑ Üô» ÚUæâæØçÙ·¤ ¹æ¼ ·¤æ ©UÂØô» ·ë¤çá ·¤è ©U'Âæ¼·¤Ìæ ÕÉ,UæÙð ×ð′ ·¤ÚUÌð ãñ′UĐ ß×èü ·¤•ÂôSÅU °ß¢ ·¤æÕüçÙ·¤ ¹æ¼ô′ ·¤æ ©UÂØô» Ù»‡Ø ãñUĐ ·é¤ÀU Áæ»L¤·¤ ç·¤âæÙ ß×èü ·¤•ÂôSÅU ·¤æ ©UÂØô» ·¤ÚUÙæ ¿æãUÌð ãñU ÂÚU‹Ìé ¥ÙéÂÜŽÏÌæ °ß¢ ÁæÙ·¤æÚUè ·ð¤ ¥æÖæß ·ð¤ ·¤æÚU‡æ §â·¤æ ©UÂØô» ÙãUè′ ·¤ÚU Âæ ÚUãðU ãñUĐ §Ù Üô»ô′ Ùð ·ð′¤ ¿é¥æ ¹æ¼ çÙ׿ü‡æ ×ð′ ¥ÂÙð §'ÀUæ ÃØ€Ì ·¤è ãñU, çÁââð §Ù·ð¤ ·ë¤çá ©U'Âæ¼Ù ×ð′ ßëç¼÷Ï ãUô ĬĬæ ÚUæâæØçÙ·¤ ¹æ¼ âð ãUôÙð ßæÜð Ùé·¤âæÙ ×ð′ Öè ·¤×è ¥æ â·ð¤ ĬĬæ ç×Å÷UÅUè ·¤è ©UßüÚU·¤ ÿæ×Ìæ ×ð′ ßëç¼÷Ï ãUôĐ

vw.~¥æØßëç¼+Ï·¤æØü·ý¤×

Ⱦ¢ß ·¤è ÕðÚUôÁ»æÚUè Âý×é¹ â×SØæ ãñU ¥õÚU §ââð ֻܻ âÖè ÂçÚUßæÚU ÁêÛæ ÚUãðU ãñUĐ çâÈü¤ ¼ô Øæ ÌèÙ ÂçÚUßæÚU Sß-ÚUôÁ»æÚU ØôÁÙæ âð ÜæÖæçß‹Ì ãñUĐ »æ¢ß ×ð′ ·¤"ææ ×æÜ ©UÂÜŽÏ ãUôÙð ·ð¤ ÕæßÁê¼ Âýçàæÿæ‡æ ·ð¤ ¥æÖæß ×ð′ Øð ¥ÂÙæ ·¤ô§ü Üfæé ©U¼÷Øô» ¥æÚ¢UÖ ÙãUè′ ·¤ÚU Âæ ÚUãðU ãñ′UĐ »æ¢ß ×ð′ ×ÀUÜè ÂæÜÙ ·¤æ ÜæÖ çÜØæ Áæ â·¤Ìæ ãñUĐ ·é¤ÀU ùߨéß·¤-ØéßçÌØæ; ×é»èü, »æØ, Öñ⠰ߢ Õ·¤ÚUè ÂæÜÙ ·¤ÚU ¼é**X**Ï °ß¢ ¥¢ÇUô′ ·¤æ ©U'Âæ¼Ù

·¤ÚUÙæ ¿æãUÌð ãñUÐ ÂÚU‹lé Şâ çßáØ ×ð' §‹ãð'U Âê‡æü L¤Â âð ÁæÙ·¤æÚUè ÙãUè' ãñ'U líæ §Ù·ð¤ Âæâ Âê¡Áè ·¤æ Öè ¥Öæß ãñUĐ

Şâ ãðUÌé ©U‹ãð′U ¥æßàØ·¤ Áýçàæÿæ‡æ ç¼Øæ ÁæÙæ ¿æçãUØð Ìæç·¤ ßð âæ×êçãU·¤/ÃØç€Ì»Ì L¤Â âð ×é»èü ÂæÜÙ, Õ·¤ÚUè ÂæÜÙ, âŽÁè ©U^Âæ¼Ù, ÛææÇêU ÕÙæÙæ, âêÌ ·¤æÌÙæ, ç×Å÷UÅUè ·ð¤ ÕlüÙ ÕÙæÙæ, ×âæÜæ ©U¼÷Øô», ×ô×Õ'Ìè ÕÙæÙæ, ¥»ÚUÕ'Ìè ÕÙæÙæ, ÕèÇ,Uè ÕÙæÙæ ĬÍæ ¥‹Ø ÃØßâæØ ·¤ÚU ¥ÂÙè ¥æØ ×ð′ ßëç¼÷Ï ·¤ÚU â·¤Ìð ãñ′UĐ ÂÚU‹Ìé ©UÙ·¤æ ¥æçĺü·¤ Âÿæ ×ÁÕêÌ ÙãUè ãUôÙð âð °ß¢ ©U‹ãð′U ÁæÙ·¤æÚUè ÙãUè′ ãUôÙð âð ß Ì·¤Ùè·¤è ÃØßâæØ SĺæçÂÌ ·¤ÚUÙð ×ð′ ¥âÿæ× ãñUĐ ¥ÌÑ ©U‹ãð′U çßçÖ‹Ù Âý·¤æÚU ·ð¤ Âýçàæÿæ‡æ °ß¢ °ð€âÂôÁÚU çßçÁÅU Ĭĺæ Âê¡Áè ©UÂÜŽÏ ·¤ÚUæÙð ·¤è ¥æßàØ·¤Ìæ ãñUĐ

vw.vv âæ×‰Øü çß·¤æâ

»ýæx xð' SlæùèØ ©UÂÜŽÏ â¢âæÏùô' ·ð¤ ¥æïæÚU ÂÚU ÃØßâæçØ·¤ Âýçàæÿæ‡æ ·ð¤ ¼÷ßæÚUæ ÕðÚUôÁ»æÚ Øéß·¤-ØéßçÌØô' ·¤ô ÚUôÁ»æÚU ©UÂÜŽÏ ·¤ÚUæØæ Áæ â·¤Ìæ ãñU §Ù âÕ ·ð¤ ¥Üæßæ àææâ·¤èØ ØôÁùæ¥ô¢ âð ç×Üùð ßæÜð ÜæÖ ·ð¤ çÜØð ÁýðçÚUÌ ç·¤Øæ Áæùæ ¥æßàØ·¤ ãñU °ß¢ Õñ'·¤ô' ·ð¤ ¼÷ßæÚUæ ÕðÚUôÁ»æÚU Øéß·¤-ØéßçÌØô' ·¤ô «¤‡æ ©UÂÜŽÏ ·¤æÚUæØ Áæ â·¤Ìæ ãñUĐ ÃØßâæçØ·¤ Âýçàæÿæ‡æ xð' ×àæL¤× ©U'Âæ¼ù, ¼ôùæ ¹ÌÜ, âæÕéù Âýçàæÿæ‡æ, ¥»ÚUÕ'Ìè Âýçàæÿæ‡æ, ¿æò·¤ Âýçàæÿæ‡æ, ç×Å÷UÅUè ·ð¤ ÕÌüÙ, ×ÀUÜè ÂæÜù, ×é»èü ÂæÜù, ¼êÏ ÇðØÚUè §^Øæç¼ ·¤æ Âýçàæÿæ‡æ ç¼Øæ Áæ â·¤Ìæ ãñUĐ

ÌæçÜ·¤æ ·ý¢¤. xw - ÃØg	ç€Ì»Ì ∙¤õàæÜ (ãéUÙÚU ∙𤠥æÏæÚl	LÂÚU) ©UÂÜŽÏÌæâ¢●Øæ

·ý¤×梷¤	٠¤õàæÜ	â¢•Øæ	·¤×æ§ü ·¤æ çßßÚU‡æ
1	1⁄4Áèü		
2	ÕÉ,U§ü		
3	ÚUæÁç×S~æè		
4	ÜôãUæÚU		
5	»æØ °ß¢ Öñ′â ÂæÜÙ		
6	Õæ¢â ∙¤è ÅUô∙¤ÚUè		

7	ãUÜßæ§ü	
8	ÖðÇ,U-Õ·¤ÚUè ÂæÜÙ	
10	ç·¤ÚUæÙæ ¼é·¤æÙ	
11	ÚÔUçÇUØô âćÏæÚU·¤	
12	âæØ·¤Ü ¼é·¤æÙ	
13	¿Ùæ-×éÚUæü ©U¼÷Øô»	
14	.ð′¤;éßæ ¹æ¼ (ß×èü	
	∙¤∎ ÂôSÅU) ∂¤ çÙ׿ü‡	
	·¤æ Âýçàæÿæ‡æ	
15	¥æØßëç¼÷Ï ·¤æØü·ý¤×	
16	×é»èü ÂæÜÙ	
17	×ÀUÜè ÂæÜÙ	
18	»õ ÂæÜÙ	
19	Õ∙¤ÚUè ÂæÜÙ	
20	×Ïé ×€¹è ÂæÜÙ	
21	ÚÔUàæ× ·¤èÇ,Uæ ÂæÜÙ	
22	âê¥ÚU ÂæÜÙ	
23	¥«Ø ÂæÜÙ	
24	¼ôÙæ Â^ÌÜ ÕÙæÙæ	
25	׿çjâ ÕÙæÙæ	
26	ÕèÇ,Uè ÕÙæÙæ	

27	Õæ¢â ∙¤æ ¥«Ø âæ×æÙ ÕÙæÙæ	
28	¥‹Ø	

â¢Øé€Ì ßÙ ÂýÕ¢Ï âç×çÌ ∙¤æ çßßÚU‡æ

ÌæçÜ·¤æ ·ý¢¤. xy

 · ·	
âç×çÌ ∙¤æ Ùæ×	
¥ŠØÿæ ·¤æ Ùæ×	
âç;ß·¤æ Ùæ×	
∙é¤Ü â¼SØô′ ∙¤è â¢●Øæ	
∙é¤Ü ×çãUÜæ â¼SØ / ∙é¤Ü ÂéL¤á	
â¼SØ	
∙é¤Ü â¼SØô′ .ð¤ Ùæ×	
âç×çÌ •¤æ »ÆUÙ •¤Õ ãéU¥æ	
¢ÁèØÙ ·ý¤×梷¤	
âç×çÌ ·¤æ ·¤æØü·¤æÜ	
âç×çÌ ·¤æ ¥æÕ¢çÅUÌ ßÙ ÿæð~æ (°·¤Ç,U	
×ð′)	
ßÙ ·¤è ßÌü×æÙ çSíçÌ	
çÁÜæ	

ßùׇÇUÜ	
çß.¤æâ ¹‡ÇU	
»ýæ× ¢¿æØÌ	
R.A. Circle çÁâ×ð' âç×çÌ â¢Ü»Ù ãñ'U	
ÕèÅ	
Á¢»Ü âƒæÙ ãñU, Ìô ç∙¤ÌÙæ ãðU€ÅðUØÚU / °∙¤Ç,U ×ð′	
Á¢»Ü çßÚUÜ ãñU, Ìô ç∙¤ÌÙæ ãðU€ÅðUØÚU / °∙¤Ç,U ×ð′	
Á¢»Ü ∙¤ô Õ¿æÙð ∙ð¤ çܰ JFMC €Øæ •¤æØü ç•¤Øæ »Øæ ãñU	
ſŚÌü×æÙ çSĺçÌ ×ð′ ©UÙ ·¤æØôZ ç·¤ çSĺçÌ -	
Áèßè·¤ôÂæÁüÙ ×ð′ Á¢»Ü ·¤æ ×ãUĴS (ÂýçÌàæÌ ×ð′)	
â¢Øé€Ì ßÙ ÂýÕ¢Ï âç×çÌ ¼÷ßæÚUæ ¿æÚUæ»æãU ∙¤æ çÙ׿ü‡æ	ãéU¥æ ãñU ÙãUè ãéU¥æ ãñU
¿æÚUæ»æãU ·¤æ ·é¤Ü ÿæð~æÈ¤Ü	
Øç¼ ¿æÚUæ»æãU ÙãUè ãñU, Ìô ∙¤ãUæ; çÙ׿ü‡æ ∙¤ÚUæØæ Áæ â∙¤Ìæ	

ãñU	
ÂàæéÏÙ ¼÷ßæÚUæ ßÙô′ •¤ô ãUôÙð	
ßæÜð Ùé·¤âæÙ ·¤è ÖÚUÂæ§ü ·ð¤	
çÜØð âç×çÌ ¼÷ßæÚUæ 畤Øð »Øð	
·¤æØü	
âç×çÌ ¼÷ßæÚUæ ÕÙæØð »Øð ·é¤Ü	
Sß¢Ø âãUæØÌæ â×êãU	
Sß âãUæØÌæ â×êãUô′ ·ð¤ ×æŠØ× âð	
çÙÁè ÚUô‡æßSÍæÂÙæ	
Sß âãUæØÌæ â×êãUô′ ¼÷ßæÚUæ	
Áñçß·¤ ¹ æ¼ ·¤æ©U^Âæ¼Ù	
Sß âãUæØÌæ â×êãU ¼÷ßæÚUæ ç∙¤Øð	
»Øð¥‹Ø·¤æØü	
ÁÜ SÌÚU ÕÉ,UæÙð ãðUÌé ßæÅUÚU	
àæðÇU ÇðUßÜ×ð‹ÅU ·¤æØôZ ·¤æ	
ç·ý¤ØæßØÙ	
Á˼è ÕÉ,UÙð ßæÜð ÂýÁæçÌØô´ .ð¤	
ÚUôÂ‡æ ¼÷ßæÚUæ ÁÜæª¤ ÃØßSÍæ	
çÕ»Ç,ðUßÙÿæðĩæô′ ×ð′	
ßëÿææÚUô‡æ	
¥‹Ø ÚUô‡æ	

NTFP ÂýÁæçÌØô´ •¤æßÙ ÿæð~æô´ ×ð´
ÚUô‡æ
ßÙ ÂýÕ¢ÏÙ âç×çÌØô′ •¤è ßÙô′ ÂÚU
çÙÖüÚUÌæ ·¤× ·¤ÚUÙð ãðUÌé
¥æØ×êÜ·¤ .¤æØü

ÌæçÜ·¤æ ·ý¢¤. xz - ¥æÕ¢çÅUÌßÙ ÿæð æ

ßừ	¥æ	Õ¢çÅUÌßÙÿæð	Øô»	∙¤æØü		
‡Ç			ý¤×梕¤)		(ãðU	ØôÁÙæ
u					ہU.	-g¤
.¤æ)	¥Ùéâæ
Ùæ						úu
×						∙¤æØü
						ſSë [*] Ì
	¥æÚ	â¢Ú	Ùæ	¥çÌ·ý		
	Uçÿæ	Uçÿ	Ú¢U	¤×‡		
	Ì	Ŕ	ȏ	æ		
Øô»						

$* \acute{\partial}^{\mathbf{x}} \cdot \acute{\partial}^{\mathbf{x}} \ \grave{\partial}^{\mathbf{x}} \grave{\partial}^{\mathbf{x}} \grave{\partial}^{\mathbf{x}} \grave{\partial}^{\mathbf{x}} \grave{\partial}^{\mathbf{x}} \grave{\partial}^{\mathbf{x}} \dot{\partial}^{\mathbf{x}} \grave{\partial}^{\mathbf{x}} \dot{\partial}^{\mathbf{x}} \dot{\partial}^{\mathbf{x}$

(a) ßÙ çßÖæ» âð Ùæ× °ß¢ ¼ -

(a) $c C U \hat{A} \delta \tilde{a} U \delta \tilde{E} C U U U \cdot \mathbf{x} \mathscr{A} U \mathscr{A} \mathscr{A} \mathscr{A} \mathcal{A} U \mathcal{A} \mathcal{A} \mathcal{A} \mathcal{A} \mathcal{A} \mathcal{A} \mathcal{A} \mathcal{A}$	(b) $\cdot \ddot{e}^{\mu}$ çá çß Öæ» âð Ùæ× °ß¢ ¼		
(e) ÅÅUJ\$æUUUè ·¤æ Ūæ× 9\$e äUĔ.¤æ Ù•OUU - (f) ¥æe>ÙÔæÇ, Uè ʲ¤æOü·¤læü ·¤è âe•Oæ - (g) ¥æe>ÙÔæÇ, Uè ʲäUæçØ·¤æ ·uè âe•Oæ - (g) ¥æe>ÙÔæÇ, Uè åäUæçØ·¤æ ·uè âe•Oæ - (h) \$J\$æ\$\$%oØ ·¤æØü·¤læü¥ôe ·¤è ÅæÙ·¤æÚUè - (i) ç×læçûU ·uè âe•Øæ - (j) ÅýðÚU¤ °£e âäUæØ·¤ ÁýðÚU¤ ·uè âe•Øæ - (j) ÅýðÚU¤ °£e âäUæØ·¤ ÁýðÚU¤ ·uè âe•Øæ - (j) ÅýðÚU¤ °£e âāUæØ·¤ ÁýðÚU¤ ·uè ûæ• 0æ - (k) »ýæ× ·ð¤ ßÜ âç×çl ¥õUU ¥\$Øýæ ·uæ Uæ× - (m) ¥·Ø ×eÇUçÜØæ¡ - ·euÅôá‡æ âð ÁýÖæçßI Ô°æô′ ·¤è âe•Øæ - (m) ¥·Ø ×eÇUçÜØæ¡ - ·euÅôá‡æ âð ÁýÖæçßI Ô°æô′ ·¤è âe•Øæ - (m) ¥·Ø ×eÇUçÜØæ¡ - ·euÅôá‡æ âð ÁýÖæçßI Ô°æô′ ·¤è âe•Øæ - (m) ¥·Ø ×eÇUçÜØæ¡ - ·euÅôá‡æ ôð ÁýÖæçßI Ô°æô′ ·¤è âe•Øæ - (g) ÇuÅô älöËÇUÍU ·¤æ Uæ× °£e ©UÅÜŽĨ ¼§æ§Øæ¡ - ·euÅôá‡æ ôð Áýçàæçÿæ] ¥Âýçàæçÿæ] ·¤æ Uæ× âçãUl	(c) ©U¼÷ØæÙ çßÖæ» âð Ùæ× °S¢ ¼		
(f) ¥æe>ÜÕæÇ, Uè ·¤æØü·¤Ìæü ·¤è å¢•Øæ	(d) çàæÿæ·¤ô′ ·¤è â¢●Øæ		
(g) ¥æe»ÙÖæÇ, Uè âãUæçØ·¤æ·¤è åe•Øæ - (h) SßæS‰Ø··IæØü·¤læü¥ôe·¤è ÁæÙ·¤æÚUè - (i) çxlæçüù·¤è âe•Øæ - (j) ÅýðÚU·¤ %be âãUæØ·¤ ÁýðÚU·¤·¤è âe•Øæ - (j) ×ýæ× ·ð¤ ·¤èlüù ×eÇUÜè·¤æ Ùæ× - (ii) ×ýæ× ·ð¤ ·¤èlüù ×eÇUÜè·¤æ Ùæ× - (ji) ×ýæ× ·ð¤ ·¤èlüù ×eÇUÜè·¤æ Ùæ× - (ii) ×ýæ× ·ð¤ ·¤èlüù ×eÇUÜè·¤æ Ùæ× - (jii) ¥Ø ×eÇUçÜØæ; - (m) ¥Ø ×eÇUçÜØæ; - (m) ¥Ø ×eÇUçÜØæ; - (m) ¥Ø ×eÇUçÜØæ; - (jii) ×éæ Óæ · •é¤Åôá‡æ âð ÅýÖæçßÌ Ö"æô'·¤è âe•Øæ - ·e¤Åôá‡æ âð ÅýÇàæçjæ] ¥Âýçàæçjæ] ·¤æ Uæ× âçãUl (a) çÇUÂô ãuôËÇUÚU ·¤æ ùæx °fæ ©UÂÜŽĨ ¼ßæ§Øæ; - (a) çÇUÂô âuôĔÇUÚU ·¤æ ùæ °fæ ©UÂÜŽĨ ¼ßæ§Øæ; - (b) ç×læçûl Åýçàæçjæ] ¥Âýçàæçjæ] ·¤æ Uæ× âçãUl (c) ¼æ§ü Åýçàæçjæ] ¥Âýçàæçjæ] ·¤æ Uæ× âçãUl - (d) ©UÂ SßæS‰0Ø ·ð'¤lý ãñU ? ãUæ; - (ji) ©UÂ SßæS‰0Ø ·ð'nlý āñU ? ãUæ; - (ji Åýæçlç×·¤ SßæS‰0Ø ·ð'nlý ãñU ? ãUæ; - (ji Åýæçlç×·¤ SßæS‰0Ø ·ð'nlý ãñU ? ãUæ; - (ji ÅýæçluØ/ð/ ·ð¤ ùæ · … (ji ÇUæ€ÂUÚUð/ ·¤è âe•Øæ-	(e) ÂÅUßæÚUè ∙¤æ Ùæ× °ß¢ ãUË∙¤æ Ù●ÕÚU	I —	
 (h) SßæS‰Ø ·¤æØü:¤læü¥åe ·¤è ÁæÙ:¤æÚUè	(f) ¥æ¢»ÙÕæÇ,Uè ·¤æØü·¤Ìæü ·¤è â¢●Øæ		
(i) çxlæçůů ·¤è åe•Øæ	(g) ¥æ¢»ÙÕæÇ,Uè âãUæçØ∙¤æ ∙¤è â¢●Øæ		
 (j) ÂyðÚU - Be âāUæØ - AýðÚU AvðÚU	(h) SßæS‱Ø ·¤æØü·¤Ìæü¥ô¢ ·¤è ÁæÙ·¤æÚU	lè	
(k) »ýæ× ∂ ¤ ßù âç×çì ¥õÚU ¥ŠØÿæ ·¤æ Ùæ× -(l) »ýæ× ∂ ¤ ·¤èlüù ×¢ÇUüè ·¤æ ùæ× -(m) ¥.Ø ×¢ÇUçüØæ;	(i) ç×ÌæçÙÙ ∙¤è â¢●Øæ		
(1) »ýæx $\cdot \partial \mathbf{x} \cdot \mathbf{z} \partial \mathbf{x}^{\dagger} \cdot \mathbf{z} \partial \mathbf{x}^{\dagger} \partial \mathbf{x}^{\dagger} \cdot \mathbf{z}^{\dagger} \partial \mathbf{x}^{\dagger} \partial \mathbf{x}^{\dagger} \cdot \mathbf{z}^{\dagger} \partial \mathbf{x}^{\dagger} \partial \mathbf{x}^{\dagger} \partial \mathbf{x}^{\dagger} \cdot \mathbf{z}^{\dagger} \partial \mathbf{x}^{\dagger}	(j) ÂýðÚU∙¤ °ß¢ âãUæØ∙¤ ÂýðÚU∙¤ ∙¤è â¢●Øa	e	
(m) $last 4 \cdot 0 \times c (\Box U (\square U (\square u + \square $	(k) »ýæ× ·ð¤ ßÙ âç×çÌ ¥õÚU ¥ŠØÿæ ·¤æ Ùæ× -		
-é¤Âôá‡æ âð ÂýÖæçßÌ Ö"æô' ·¤è â¢ $@$ æ	(l) »ýæ× ·ð¤ ·¤èlüù ×¢ÇUÜè ·¤æ ùæ×		
SJæS‰Ø áćçljæ¥ô¢ ·¤è ÁæÙ·¤æÚUè Ñ-(a) çÇUÂô ãUôËÇUÚU ·¤æ Ùæ× °ß¢ ©UÂÜŽÏ ¼ßæ§Øæ;(b) ç×ÌæçÙÙ ÂýçàæçÿæÌ ¥ÂýçàæçÿæÌ ·¤æ Ùæ× âçãUÌ(c) ¼æ§ü ÂýçàæçÿæÌ ¥ÂýçàæçÿæÌ Ùæ× âçãUÌ(d) ©U SßæS‰Ø ·ð′¤Îý ãñU ?ãUæ; -(e) ©U SßæS‰Ø ·ð′¤Îý ãñU ?ãUæ; -(f) Âýæĺç×·¤ SßæS‰Ø ·ð′¤Îý ãñU ?ãUæ; -(g) »ýæ× ×ð′ ÅU跤淤ÚU‡æ ·¤è çÙľæüçÚUÌ çlçí(h) ×õâ×è Õè׿çÚUØô′ ·ð¤ Ùæ×(i) ÇUæ€ÅUÚUô′ ·¤è â¢•Øæ-àææâ·¤èØ -¥lü àææâ·¤èØ -	(m) $¥ \langle \emptyset \times c C U c U \emptyset x_i$		
(a) $\varsigma \zeta U \hat{A} \delta \tilde{a} U \delta \ddot{E} \zeta U \dot{U} U \cdot \square æ U æ \times ° \beta e © U \hat{A} U \ddot{Z} I ' 4 \beta æ \S Ø æ_i$	·é¤Âôá‡æ âð ÂýÖæçßÌ Õ"æô′ ∙¤è â¢●Øæ		
(b) $cx^{1}actUU Aycacyacyacyacyacyacyacyacyacyacyacyacyac$	SSæS‰Ø âéçßÏæ¥ô¢ ·¤è ÁæÙ·¤æÚUè Ñ-		
(c) ¹ / ₄ æ§ü ÂýçàæçÿæÌ ¥ÂýçàæçÿæÌ Ùæ× âçãUÌ (d) ©U SßæS‰Ø ·ð'¤Îý ãñU ? ãUæ _i - ÙãUè' - (e) ©U SßæS‰Ø ·ð'¤Îý Øç ¹ / ₄ ãñU lô âéçßÏæ° _i ãñ'U (f) ÂýæÍç×·¤ SßæS‰Ø ·ð'¤Îý ãñU ? ãUæ _i - ÙãUè' - (g) »ýæ× ×ð' ÅU跤淤ÚU‡æ ·¤è çÙÏæüçÚUÌ çÌçÍ (h) ×õâ×è Õè׿çÚUØô' ·ð¤ Ùæ× (i) ÇUæ€ÅUÚUô' ·¤è â¢•Øæ- àææâ·¤èØ - ¥Ïü àææâ·¤èØ -	(a) çÇUÂô ãUôËÇUÚU ·¤æ Ùæ× °ß¢ ©UÂÜŽ	İ ¼ßæ§Øæj	
(d) \mathbb{O} U SßæS‰Ø ·ð'¤Îý ãñU ? \widetilde{a} Uæ _i - \widetilde{u} ãUė' -(e) \mathbb{O} U SßæS‰Ø ·ð'¤Îý Øç¼ ãñU lô âéçßÏæ°; ãñ'U(f) ÂýæÍç×·¤ SßæS‰Ø ·ð'¤Îý ãñU ? \widetilde{a} Uæ _i -(f) ÂýæÍç×·¤ SßæS‰Ø ·ð'¤Îý ãñU ? \widetilde{a} Uæ _i - \widetilde{u} ãUė' -(g) »ýæ× ×ð' ÅU跤淤ÚU‡æ ·¤è çÙïæüçÚUÌ çÌçÍ(h) ×õâ×è Õè׿çÚUØô' ·ð¤ Ùæ×¥Ïü àææâ·¤èØ -	(b) ç×ÌæçÙÙ ÂýçàæçÿæÌ ¥ÂýçàæçÿæÌ •¤æ Ùæ×	âçãUÌ	
(e) \mathbb{C} U SßæS‰Ø ·ð'¤Îý Øç¼ ãñU lô âéçßÏæ°; ãñ'U (f) ÂýæÍç×·¤ SßæS‰Ø ·ð'¤Îý ãñU ? ãUæ; - ÙãUè' - (g) »ýæ× ×ð' ÅU跤淤ÚU‡æ ·¤è çÙÏæüçÚUÌ çÌçÍ (h) ×õâ×è Õè׿çÚUØô' ·ð¤ Ùæ× (i) ÇUæ€ÅUÚUô' ·¤è â¢•Øæ- àææâ·¤èØ - ¥Ïü àææâ·¤èØ -	(c) ¼æ§ü ÂýçàæçÿæÌ ¥ÂýçàæçÿæÌ Ùæ× âçãUÌ		
(f) $\hat{A}yx [\varphi \times x]Sx S 00 \cdot \hat{\partial}' x]\hat{y} \tilde{a} \ Q$ $\tilde{a} Ux_i \tilde{u} Ux_i -$ (g) $y x \times x \hat{\partial}' A U \hat{e} \cdot x x \cdot x U U \pm x \cdot x \hat{e} \hat{e} \hat{U} \ x \ddot{u} \dot{e} \hat{i} \hat{e} \hat{i} \tilde{u} u x \cdot x \hat{e} \hat{i} \hat{i} \hat{e} \hat{i} \hat{i} \hat{i} \hat{i} \hat{i} \hat{i} \hat{i} i$	(d) ©U SßæS‱Ø ·ð′¤Îý ãñU ?	ãUæj -	ÙãUè' -
 (g) »ýæ× ×ð′ ÅU跤淤ÚU‡æ ·¤è çÙÏæüçÚUÌ çÌçÍ (h) ×õâ×è Õè׿çÚUØô′ ·ð¤ Ùæ× (i) ÇUæ€ÅUÚUô′ ·¤è â¢•Øæ- àææâ·¤èØ - ¥Ïü àææâ·¤èØ - 	(e) ©U SßæS‰Ø ·ð′¤Îý Øç¼ ãñU Ìô âéçßÏa	2°; ãñ′U	
 (h) ×õâ×è Õè׿çÚUØô′ ·ð¤ Ùæ× (i) ÇUæ€ÅUÚUô′ ·¤è â¢•Øæ- àææâ·¤èØ - ¥Ïü àææâ·¤èØ - 	(f) Áýæĺç×·¤ SßæS‱Ø ·ð′¤ĺý ãñU ?	ãUæj -	ÙãUè' -
(i) ÇUæ€ÅUÚUô´ ·¤è â¢●Øæ- àææâ·¤èØ - ¥Ïü àææâ·¤èØ -	(g) »ýæ× ×ð′ ÅU跤淤ÚU‡æ ·¤è çÙÏæüçÚUÌ	çÌçÍ	
	(h) ×õâ×è Õè׿çÚUØô′ ·ð¤ Ùæ×		
$ ilde{O}$ ñ¼ - $ ilde{O}$ ñ»æ -	(i) ÇUæ€ÅUÚUô′ ·¤è â¢●Øæ-	àææâ·¤èØ -	¥Ïü àææâ·¤èØ -
	Õñ¼ -	͖Ⱦ -	

Ⱦjß·¤è¥Ïôâ¢ÚU¿Ùæ·¤èÁæÙ·¤æÚUèÑ-

(a) ¢;æØÌ ÖßÙ -	ãUæj -	ÙãUè' -	
(b) âæ×é¼æçØ·¤ ÖßÙ -	ãUæj -		ÙãUè' -
(d) »Üè ·¤æ¢·ý¤èÅUè·¤ÚU‡æ -			
(e) çß¼÷ØéÌè·¤ÚU‡æ			
(f) Sß'ÀUÌæ			
(g) âôâæØÅUè / PDS / ©Uç¿Ì ×	êËØ •¤è ¼é•¤æÙ / Ú	lUæàæÙ ¼é∙¤æÙ	
(f) »ýæ× âð ×é∙Ø âÇ,U·¤ ∙¤è ¼êl	ÍUè		
(h) ¥æßæ»×Ù ·¤è âéçßÏæ			
(i) ÂôSÅU ¥æòçȤâ			
(j) »ýæ× ×ð′ ¼é∙¤æÙô′ ∙¤è â¢●Ø	æ		

¥ŠØæØ - vx

â×SØæ°¢ °ß¢ âéÛææß

ÁæÙ·¤æÚUè ©UÂÜŽÏ ãñ′U Ìô ©Uâð Öè çÜ'ð′)

ÌæçÜ·¤æ ·ý¢¤. xx

·ý¤×梕¤	∙¤æÚU∙¤	â×SØæ	âéÛææß
ν	¥æÏæÚUÖêÌ		
	â¢ÚU¿Ùæ¥ô¢ •¤æ		
	çß·¤æâ		
w	Âýæ·ë¤çÌ·¤		
	â¢âæÏÙô′ •¤æ		
	çß·¤æâ °ß¢ ÂýÕ¢Ï		
x	çàæÿææ		
у	SßæS‱Ø		
z	âæ×‰Øü •¤æ		
	çß·¤æâ		
{	¥æÁèçß·¤æ		
	ÂàæéÏÙ		
}	Áæ»M¤·¤Ìæ		

âŶØæÂÙ

©UÂÚUô€Ì ÁæÙ·¤æÚUè ×ðÚÔU ¼÷ßæÚUæ Âý׿ç‡æÌ ·¤è ÁæÌè ãñU ÌÍæ §â·¤è Âê‡æü â^ØÌæ ·¤è ×ñ′

ÁßæÕ¼æÚUè Üðl
æ / Üðlè ãê;UÐ

∙ý¢¤.	¼	Ŭæ×	çÂÌæ •¤æ Ùæ×	¥æØé	ãUSÌæÿæÚU	âèÜ	
-------	---	-----	--------------	------	-----------	-----	--

ν	âÚU¢¿			
w	©UÂâÚU¢¿			
x	âç¿ß			
у	âßðü∙¤Ìæü			
z	¥«Ø			

â̂ØæÂÙ

©UÂÚUô€Ì ÁæÙ·¤æÚUè ×ðÚÔU ¼÷ßæÚUæ Âý׿ç‡æÌ ∙¤è ÁæÌè ãñU ÌÍæ §â∙¤è Âê‡æü â^ØÌæ •¤è ×ñ′

ÁßæÕ¼æÚUè ÜðÌæ / ÜðÌè ãê¡UĐ

·ý¢¤.	¼	Ŭæ×	çÂÌæ∙¤æÙæ×	¥æØé	ãUSÌæÿæÚU	âèÜ
ν	ÚÔ′UÁÚU					
w	çÇUŒÅUè ÚÔ′UÁÚU					
x	ÕѐÅU »ӕҪӥѠ					
у	ßÙ ÂýÕ¢ÏÙ âç×çÌ ¥ŠØÿæ					
Z	ßÙ ÂýÕ¢ÏÙ âç×çÌ âç¿ß					
{	âßðü·¤Ìæü					
	âç×çÌ .ð¤ â¼SØ					
}	â¼SØ					
~	â¼SØ					
v®	â¼SØ					
vv	â¼SØ					

vw	â¼SØ			
vx	â¼SØ			
vy	â¼SØ			
νz	â¼SØ			
ν{	â¼SØ			
v	â¼SØ			

 $\hat{a}_{c} \ddot{U} X \dot{U} \cdot \mathbf{x} \left(\vec{0} \right) - \hat{a}_{c} \hat{a}_{x} \ddot{U} \dot{U}_{c} \tilde{z}_{x} \left(\hat{A}_{c} \cdot \mathbf{x} \dot{u} \dot{U} \cdot \mathbf{x} \dot{U} \right) \\ \times \tilde{n} \hat{A}_{c} \dot{u} X \dot{U} \cdot \mathbf{x} \dot{U} \dot{O} \dot{U} \right)$

Annexure – III

The list of selected JFMCs

CLUSTERS OF KANKER DISTRICT

Kanker - Cluster A (Degradation - 50.59%)

N	Mili wate r shed Num ber	Name of Gram Panc hayat	Name of JFM C	Allotted compar tment no. of JFMC	De nse For est (ha c.)	Degr aded Fore st (hac.)	Non Forest Area	Total Area	Total Amount in JFMC's A/c
1	4G2 G5C1	Gitpa har	Gitpa har	170 p	295 .62 5	50.59 %	128 .35 0	423 .97 5	2,5 78
2	4G2 G5C1	Bhan puri	Bhanp uri	168	61. 000		22. 060	83. 060	1,1 85
3	4G2 G5C1	Jepra	Jepra	170	180 .00 0		144 .59 0	324 .59 0	23, 67 9
4	4G2 G5C1	Bhan puri	Mudd howa	168 169	183 .85 0 23. 500			107 .35 0	96 7

5	4G2	Kisha	Kisha	163	43.	43.	-
	G5C1	npuri	npuri		375	375	

Kanker - Cluster B Cluster(47.95%)

No	Miliwater shed Number	Name of Gram panchayat	Name of JFMC	Allotted compartment no. of JFMC	Dense Forest (hac.)	Degraded Forest (hac.)	Non Forest Area
1	4G2G5C3	Jhariyamari		133			
2	4G2G5C3	Bhansmudi Talpi		135			
3	4G2G5C3	Ankhi Harra		135	-	47.95%	-
4	4G2G5C3	Kochwahi		137			
5	4G2G5C3	Karihapahar		166			

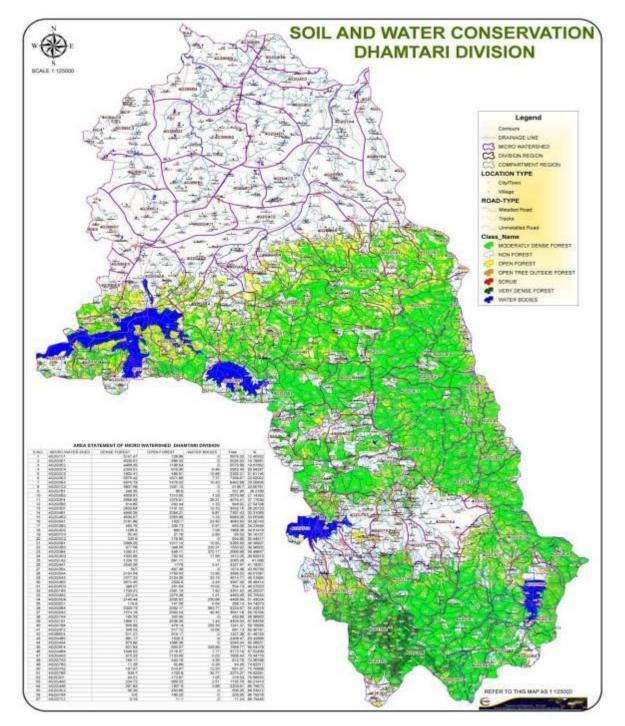
CLUSTERS OF DHAMTARI

	Sl.	Forest	Nam	Miliw	Allotted	Area of	Area	Amou
	N.	area	e of	ater	compart	Compart	of	nt in
			JFM	shed	ment no.	ment	Degra	JFMC
			C	Numb	of JFMC		ded	(in
er For				er			Forest	Rs.)

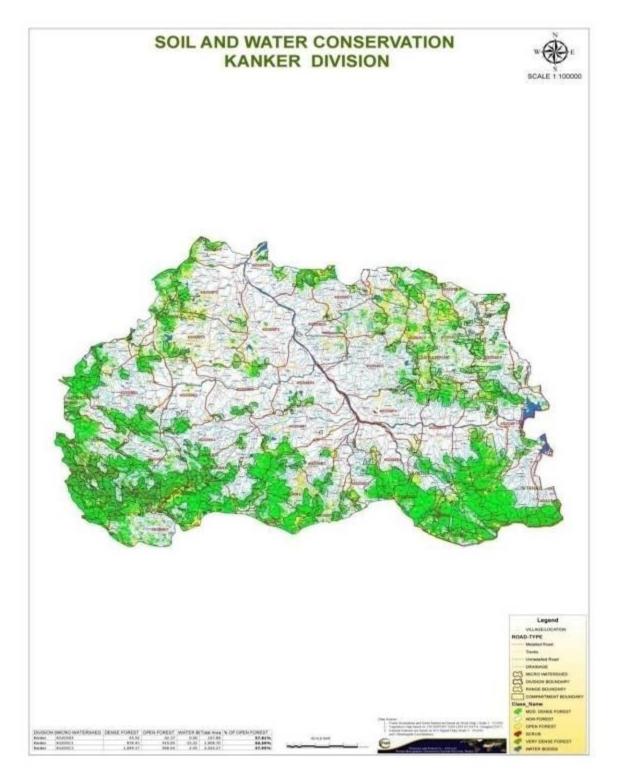
				Cluster A			
1.	Vishram	Dham	4G2G	217,215,2	271.953		18198
	pur +	tari	574	14			0.79
	Tumakh						
	urd						
2.	Ksawahi			216	443.79	66.543	60064.
						79	00
3.	Kheedki			198,190	677.533		53261.
	tola						00
4.	Dangim			195,197	336.454		0.00
	acha						
				Cluster B	I		
5.	Arauda	Dham	4G2G	161	172.559		32239.
		tari	4A5				00
6.	Mathura			168	171.487	80.214	16443.
	diha					13	00
7.	Jabrgon			168	151.000		48721.
	e						00

Annexure – IV

Map of Mili Watershed Area of Dhamtari & Kanker DHAMTARI-MILIWATERSHED AREA



KANKER –MILIWATERSHED AREA



Annexure – V

Financial Outlay of Five Year's Plan

TENTATIVE WORK PLAN/ACTION PLAN

S. N.	Activities	No. of Unit per JFM C	Per Unit Cost (In Rs.)	Tentati ve Unit Cost Per JFMC(f or 10 JFMCs)	Total No. of JFMC s Cover ed	Tot al wo rk to be don e	Total Amount (In Rs.)
1	Wadi Development with Farm Forestry** (1 Acre each)	10	60880	608800	17	170	1,03,49,6 00
2	Site Specific Micro Irrigation Development	1	178059 0	178059 0	17	17	3,02,70,0 19

	Work						
	(Stop dam / Drainage Channels / Turbines / Community Tube Wells etc.)						
3.	Distribution of Alternate Fuel Energy Sources (Improved Biomass Chulha/ Cooking Stoves to all house holds & installation of Bio-Briquette machine in the cluster / Solar Led	50	10849	542432	17	850	92,21,35 0

	Lighting System)						
4.	SMFE/any other Income Generation Activities based on Local Needs/Resou rces Including Private Nurseries ; Sericulture & Pisciculture,e tc.	1	105540 0	105540 0	17	17	1,79,41,8 00
5.	High Density Pulpwood Plantation (forestry plantation)	5 Ha	80,000/ ha	5 Ha.	17	85 Ha.	68,00,00 0
6.	Training, Exposure	10	9275	92750	17	170	15,76,75

	Visits and Community Mobilisation					0
	*Separa	te list has been e	nclosed for entire	e activities in cha	pter 9	
Tota	al no. of Household = 2545					
	1					7,64,91,5
Tota	11					/,04,71,5

Hundred Ninteen Only)

******Grand Total = 8,79,65,247/-(Rs. Eight Crore Seventy Nine lac Sixty Five Thousand Two Hundred Forty Seven Only) (With 15% Administrative Cost)

The total project cost for the allotted 2545 house holds is approximately Rs. 8,79,65,247 after calculation per house hold cost to be incurred during the project period would be Rs. 34,564 Consequent to this it has been tentatively planned to include 1000 new house holds for next 3 years. Thus apart from the present projection we are anticipating to render the project benefit to 3000 new house holds for which the additional expanses would be Rs. 10,36,91,843.

Annexure – VI

A

CONCEPT NOTE

ON

ALTERNATE INCOME GENERATING ACTIVITY PROJECT

IN

DHAMTARI AND KANKER DISTRICTS OF

CHHATTISGARH

Submitted To

DEPARTMENT OF FOREST

RAIPUR, (CG)

Submitted By GVT, RAIPUR, (CG)

ACKNOWLEDGEMENT

This concept note of Alternative IGA (Income Generating Activity) in Kanker and Dhamtari districts of Chhattisgarh is a sincere attempt to make an indepth study to make a plan for development of Kanker and Dhamtari for Department of Forest, Raipur, (CG). The present work is the modest attempt to draw a closer sketch of Kanker and Dhamtari, (CG).

Neither has it had any pretention to be a scholarly treatise nor claim absolute originality in this presentation but what matters is the sincere and honest efforts towards the outcome.

This is a unique experience & indeed a source of immense pleasure to conduct the preliminary data collection and survey. The field work and writing process had been full of unforgettable moments of excitements, apprehensions, hindrance, adventure, understanding and lot of learning through field work.

After the completion of this task words are inadequate in expressing deep sense of gratefulness to Dr. Anoop Bhalla, IFS, Ad. PCCF, Depatment of Forest, Raipur, (CG) for providing the opportunity to do this Alt. IGA project in Kanker and Dhamtari.

GVT would like to render special thanks to all the community members for participating in this project very enthusiastically and guiding us throughout the project. It was under their enlightening guidance that we were able to complete the project.

GVT Team, Raipur, (CG)

262

PREFACE

This report describes the development efforts of GVT to be initiated under Alternative IGA (Income Generating Activity) Project in Kanker and Dhamtari districts. This project is funded by Forest Department. The need for community's participation in qualitative and quantitative development of the forest resource was recognized right from the outset. Forest Department realized that Alternative IGA (Income Generating Activity) Project could be a suitable and sustainable endeavour for the difficult areas where the percentage of forest degradation is comparatively higher. Also it is envisaged that in the identified areas the forest dwellers did not meet even the basic needs of the life. Thus appropriate and long lasting options for the qualitative improvement of livelihood, reduction in the dependence of forest and overall improvement of the forest would be an important part of our implementation work.

In this report we have presented the tentative action plan for the Alternative IGA Project. This concept report produced positive outcomes that will benefit the livelihood of thousands of poor farming households in Kanker and Dhamtari districts.

The participatory methods used here are widely applicable to all farming systems and forest dwelling communities across India. We hope that this will stimulate others to use these approaches that have proven to be so effective in increasing the options available to community in some of the most difficult development conditions in the country.

The results in this project show the power of working closely with the community to find out exactly which system and methodologies are acceptable to them.

263

INDEX

Chapter No.	Particular
1	Organizational Profile
2	Objective
3	Project Location
4	Methodology
5	Project Details
6	Action Plan
7	Indicators of Success
8	Vision
9	Financial Projection

CHAPTER 1

ORGANIZAIONAL PROFILE

INTRODUCTION OF IMPLEMENTING AGENCY

Gramin Vikas Trust is a Development Organization promoted by Krishak Bharati Cooperative Limited (KRIBHCO) a premiere cooperative in Fertilizer sector under the administrative control of Government of India as an independent legal entity to plan and implement participatory development programmes in resource poor areas.

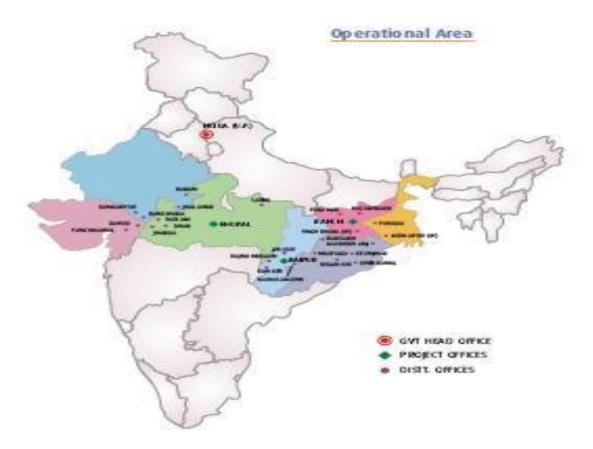
Gramin Vikas Trust aims to establish and maintain long-term links with the Governmental Organizations, Non-Governmental Organizations, Community Based Organizations (CBOs), and Resource Institutions, to sustain and strengthen the livelihoods development in backward tribal areas.

GVT is having a wide range of experiences in project planning; implementation of holistic programmes and strategic support for inter-sectoral approaches for livelihood and poverty reduction. GVT has a proven track record in the area of generating livelihood options for the poor with strategic support at district, cluster and village levels.

COVERAGE

Gramin Vikas Trust is working in seven states covering the western and eastern parts of country. In the western region, GVT works in Madhya Pradesh, Chhattisgarh, Rajasthan and Gujarat. In the Eastern region, GVT works in Jharkhand, Orissa and West Bengal. A map with areas in colour indicates the coverage of the area by GVT.

GVT ACROSS THE NATION



GVT in Chhattisgarh

GVT is operational in Chhatisgarh since 2004-2005 through the PFT (Project Facilitating Team) at Chhuria block of Rajnandgaon District under Chhatisgarh District Poverty Reduction Project (CGDPRP). GVT, Raipur office has undertaken number of monitoring and evaluation studies of Forest Department funded by state as well as Central Government. This office has undertaken the work of preparation of JFM microplans from Forest Department in Raipur, Dhamtari, Kanker, Durg and Narayanpur Districts.

GVT is actively participating in developmental work in rural areas of Chhattisgarh since 2004. From then onwards GVT has been working for Forest Department, Govt. of Chhattishgarh, IGA programs, NABARD – WADI, Watershed Training, Capacity Building Programmes with NRAA-Forest Govt. of India, New Delhi, Department of Agriculture – IGKV, Raipur (CG), etc. Many a projects are in pipe line like L&T capacity building program, ONGC's project.

*The detail about the implementing agency can be reviewed from ANNEXURE I.

CHAPTER 2

OBJECTIVE

OBJECTIVE

To develop an integrated plan of action aimed at

- Providing immediate relief in terms of decreased dependency on forest and increased availability of other developmental options for village livelihood.
- Physical improvement of the selected degraded forest areas through JFMCs.
- Converting surplus labor into economic assets.
- Generating an awareness for their duties inspite of their continuous demand for rights and usufructs from forest.
- Improving the livelihood status of the poor along with the conservation of forest and its products.
- Enhancing the effectiveness through convergence of existing streams of funds.

<u>CHAPTER 3</u> PROJECT LOCATION

The project locale has been chosen on the basis of certain criteria and parameters framed for this project. It has been done by focussing more on the degraded forest areas of Chhattisgarh. The main point of consideration was to reduce the villager's dependency on forest for their livelihood. Since decades and decades forest is being used by the villagers without its maintenance and its rejuvination. This project aims to generate an awareness among villagers for forest conservation. The project is not only focussing on the conservation of forest but also on the improvement of living standard of villager. Different cascading activities of income generation will be done in the selected project areas by using the stagnant money in JFMC's bank account.

The two basic criteria for selecting the project locations are as follows -

- 1. Cluster A Degraded forest in Mili watershed area.
- Cluster B The fund availability in JFMC's account along with the above criteria.

In both the clusters those JFMCs have not been taken into consideration where development work has already been done or the work is in progress. GVT has been allotted two forest areas in Kanker and Dhamtari districts. The district profiles of these districts can be reviewed from the Annexure- II.

The list of selected JFMCs is as follows -

<u>CLUSTERS OF KANKER</u> Kanker - Cluster A (Degradation - 50.59%)

No	Miliwater shed Number	Name of Gram Panchayat	Name of JFMC	Allotted compartment no. of JFMC	Dense Forest (hac.)	Degraded Forest (hac.)	Non Forest Area	Total Area	Total Amount in JFMC's A/c
1	4G2G5C1	Gitpahar	Gitpahar	170 p	295.625	50.59%	128.350	423.975	2,578
2	4G2G5C1	Bhanpuri	Bhanpuri	168	61.000		22.060	83.060	1,185
3	4G2G5C1	Jepra	Jepra	170	180.000		144.590	324.590	23,679
4	4G2G5C1	Bhanpuri	Muddhowa	168 169	183.850 23.500			107.350	967
5	4G2G5C1	Kishanpuri	Kishanpuri	163	43.375			43.375	-

No	Miliwater shed Number	Name of Gram panchayat	Name of JFMC	Allotted compartment no. of JFMC	Dense Forest (hac.)	Degraded Forest (hac.)	Non Forest Area
1	4G2G5C3	Jhariyamari		133			
2	4G2G5C3	Bhansmudi Talpi		135			
3	4G2G5C3	Ankhi Harra		135	-	47.95%	
4	4G2G5C3	Kochwahi		137			-
5	4G2G5C3	Karihapahar		166			

Kanker - Cluster B Cluster(47.95%)

CLUSTERS OF DHAMTARI

S.No.	Forest area	Name of JFMC	Miliwater shed Number	Allotted compartment no. of JFMC	Area of Compartment	Area of Degraded Forest	Amount in JFMC (in Rs.)
				Cluster A			
1.	Vishrampur + Tumakhurd	Dhamtari	4G2G574	217,215,214	271.953		181980.79
2.	Ksawahi	-		216	443.79	66.54379	60064.00
3.	Kheedkitola	-		198,190	677.533		53261.00
4.	Dangimacha	-		195,197	336.454	-	0.00
				Cluster B			
5.	Arauda	Dhamtari	4G2G4A5	161	172.559		32239.00
6.	Mathuradiha			168	171.487	80.21413	16443.00
7.	Janwargaon	-		168	151.000		48721.00

SWOT ANALYSIS

Before planning for the strategy formulation, implementation and evaluation all pros and cons can be assessed by SWOT analysis. Through which broader view of the scenario can be visualize and then the uncertainty and chances of failure of planning in any manner can be minimized.

STRENGTH

- All are small compact districts.
- Motivated Self help groups and Van Suraksha Samities.
- Substantial forest wealth, including non-timber forest produces.
- Rich Bamboo areas in Bhanupratappur, Koilibeda & Antagarh blocks.
- Large number of Kusum, Bamboo & Palas trees both in forest & non forest areas suitable for Lac cultivation, Bamboo craft,etc.
- Large numbers of ponds and water bodies suitable for Pisciculture.
- Fair level of rainfall.
- Suitable agricultural fields capable for producing high yielding crops.
- Suitable areas for horticulture production.
- Area & human resources are suitable for animal husbandry.
- Good network of animal health care centers and artificial insemination centers.
- Impressive literacy rate.
- Active PRIs.

WEAKNESSES

- Poor connectivity, many roads get cut during the long monsoon period.
- Poverty & Unemployment.

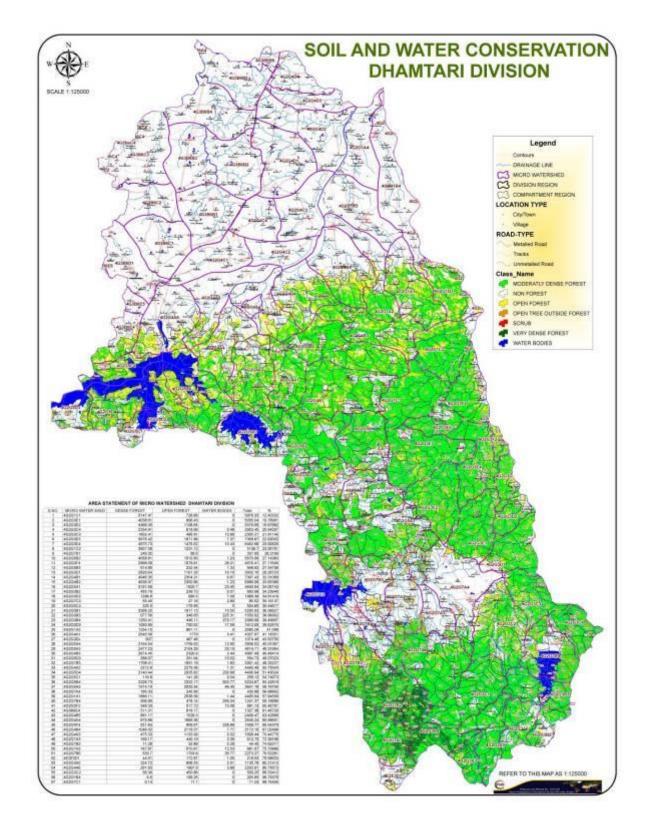
- Ignorance of local inhabitants regarding modern agricultural & horticultural practices.
- Large agricultural areas under single cropping pattern.
- Poor irrigation facilities.
- Poor marketing facilities for agricultural produce and handicrafts.
- Large numbers of ponds are unutilized which could have been used for Pisciculture but needs development.
- Cows & buffaloes rearing for milk production but the breed is low productive.
- Lack of infrastructure, marketing & entrepreneurship in the field of NTFP sectors such as Lac, Bamboo handicrafts, Apiary, etc.
- Large number of unelectrified, partially electrified villages & unutilised tubewells & pumps for the want of electricity.
- Most areas are inaccessible for six months having no storage godown facilities for storing essential commodities like Foodgrains, Kerosene & NTFPs, etc
- Several Schools/ CDS centers still have no or dilapidated building.
- Most of the PHCs are in pathetic condition.
- Poor health related institutional delivery system.
- Very poor training facilities.
- Agriculture is the main occupation of most of the people in the district, which provides only seasonal employment to the population of the district. Income from agriculture does not meet their basic needs of life.
- Heavy dependence on forest for the livelihood but poor response of community towards its maintenance.

OPPORTUNITIES

- Livelihood opportunities not yet exploited to the full.
- Availability of labour because of low employment opportunities.
- Village settlement pattern is scattered therefore rural connectivity is major area to be focused.
- District has a high potential for development of water resources.
- Government in the new, small state of Chhattisgarh holds Kanker and Dhamtari in the focus of development efforts.
- High movement of agricultural and forest produces out of the district in unprocessed form imply so much opportunities for activities relating to value addition.
- The new quest for organic food holds opportunities for Dhamtari and Kanker.
- Bamboo handicrafts, terracotta, bell metal, etc of these districts are winning market attention at the national and international levels.

THREATS

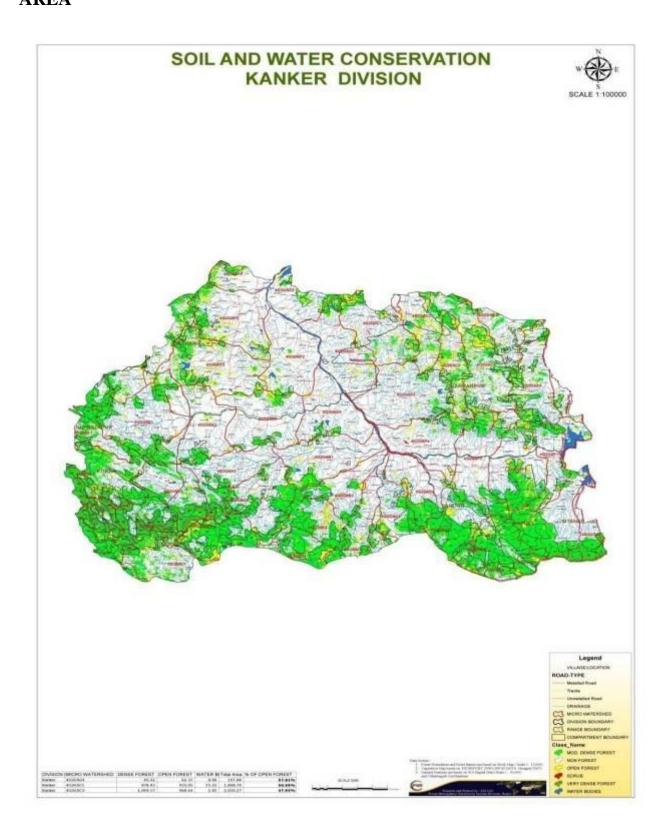
- Naxalism especially in these districts which pose challenges to developmental activities.
- In absence of immediate welfare action- situation to worsen.
- Gap between rich and poor to widen if proper monitoring is not done.
- Issues relating to convergence of funds and efforts.
- Target oriented approach keeping in view the pressure of activities.



DHAMTARI-MILIWATERSHED AREA

•

KANKER –MILIWATERSHED AREA



CHAPTER 4

METHODOLOGY

Methodology adopted for the pre project assessment of present situation, formulation of project, implementation, evaluation, strategies and action plan has been dealt in this chapter. The collection of the required data for the afore mentioned was mainly done through two types-

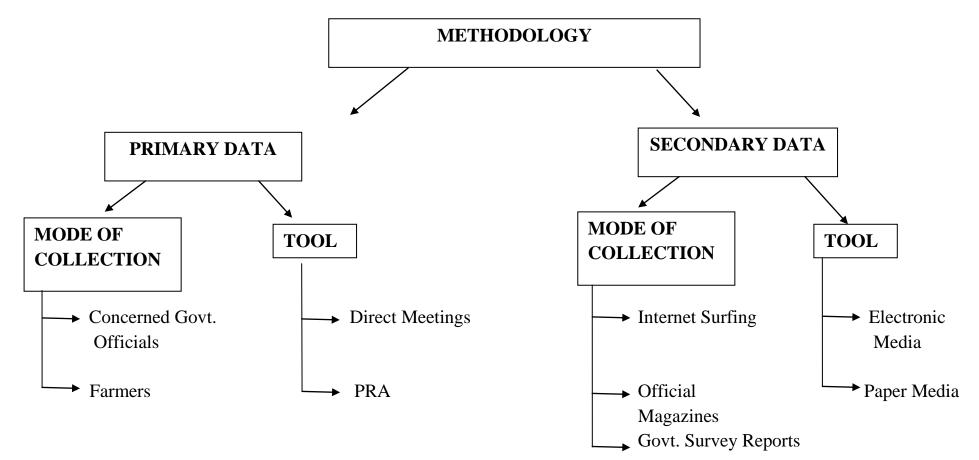
- 3. Primary Data Collection.
- 4. Secondary Data Collection.

Primary Data Collection – Primary data was collected from the concerned Government Organizations and the esteemed officials of the respective department. Subsequent to this the next targeted segment for gathering the information was JFMC members. Their response was collected through different tools viz PRA and direct interrogation through questionnaire. The community's response was positive for the project.

Also the data was collected through direct meetings and interaction with government officials and discussion over telephone. Internal training and brain storming session in GVT was done for imparting clear vision about the project to all the staff members related to this project.

Secondary Data Collection – Secondary data was collected through the official data published by Govt., their records and official web sites. Authentic official print media and paper media was also used for the collection of secondary data.

The main focus while collecting data was to sketch a closer diagram and have an indepth view of the farmer for forest, its produces, incurred benefits from it, it's sustainability, maintenance and management . So that accordingly the plan can be strategized.



Criteria for the area identification for the project

After series of meetings with the senior officials of forest department strategy for the development of plan was made. Initially the identification of project area was done. The geographical location in which the project has to be implemented was told by the department. The districts were also identified by the department. It was also decided that the proposed project will organize poor rural families of the identified districts/ Villages/JFMCs into Self Help Groups to enhance the synergy of agency and capabilities for developing secure livelihood opportunities. Cluster has to be made and JFMCs under those clusters would be taken as targeted unit for the project implementation.

The criteria for selection of the cluster was Miliwatershed Area having degraded forest and availability of fund in JFMC's Bank Account. The Miliwatershed areas where degradation was higher in percentage was taken in first priority. The areas where aforestation can be done along with activities of income generation fell into the category of cluster A. Apart from this as per the guidelines cluster B would be those JFMCs which are having considerable amount in their account. Some of the JFMCs which do not have minimum required amount can be taken along with these JFMCs, which has the considerable fund in their account as per their geographical location.

The project will motivate and train forest dwellers in a phased manner to facilitate the develop and implement plans to enhance productivity and carrying capacity of their forest, land and water resources ,diversify and intensify agriculture and adopt husbandry –oriented resource management practices imperative for sustainable use of resources.

The project will build and nurture a large pool of resource persons drawn from rural people to support and sustain the resource management system. The proposed project would have an important demonstration effect on formulation of policies and creation of institutions in future.

The identified Cluster A and B can be reviewed in chapter three of project location.

Need assessment for the project

In the identified areas for the project the most important task was to draw the need of the community. Therefore RRA (Rapid Rural Appraisal was conducted) to understand the area, community and the existing scenario. Then in order to understand the specific needs of the community PRA was done. The demand derived from the community is mentioned village wise.

CHAPTER 5

PROJECT DETAIL

Alternate Income Generating Project is for the development and with respect to increase in the level of living standard of rural people by placing coherent plan and strategy by symbiosis of Government of India and Non Government Organization which will act as a connecting link between Government and people of forest vicinity.

The main focus area of the project is mentioned below –

Decrease the dependency of rural people on forest - To decrease the dependency of rural people on forest and decrease the fuel wood consumption to zero percent by providing them grazing land and other supplementary way to prevent the misuse of forest.

<u>Aforestation of degraded forest area</u> - Consequently while opening the new door for the development of forest inhabitant, the foremost point of consideration of this project is to do aforestation of degraded forest area.

Formation of grazing land – To protect forest from illegal grazing there should be a land allotted only for grazing.

Increase income of rural people by positively use of natural resources - Also the focussed point is to increase income of rural people by positive use of natural resources. It will be an added advantage along with their basic income.

Formulation and implementation of the new business strategies for the forest dwellers - Project is also for facilitating the formulation and implementation of the new business strategies for the forest dwellers.

In Chhattisgarh the total no. of farms are 34.61 lacs but because of limited sources of irrigation the fertility and productivity of soil is not very good. So by providing better irrigation facility these lands can also be a profit generating land for the farmers.

For this project the target group is specially those who live in the vulnerable condition and not earning sufficient money to meet out their basic expenses. Basic focus area on which the project will be implemented has been dealt below-

- Wadi Development with Farm Forestry (1 Acre each).
- Site Specific Micro Irrigation Development Work. (Stop dam / Drainage Channels / Turbines / Community Tube Wells etc
- Distribution of Alternate Fuel Energy Sources. (Improved Biomass Chulha/ Cooking Stoves to all house holds & installation of Bio-Briquette machine in the cluster / Solar Led Lighting System)
- SMFE/any other Income Generation Activities based on Local Needs/Resources Including Private Nurseries ; Bee Keeping & Sericulture & Pisciculture.
- High Density Pulpwood Plantation (forestry plantation)
- Mechanized Cultivation Package, with emphasis on organic cultivation (Power Tiller/Mini Tractor)
- Live stock Management. (Replacement of scrub Milch cattle).

For all above mentioned objectives and tasks the geographical location ie Kanker and Dhamtari district has been allotted. Each district will have two clusters- A and B. Cluster has been made and JFMCs under those clusters were taken as target segment for the project implementation.

The criteria for selection of the cluster was **Miliwatershed Area** having **Degraded Forest and Availability of Amount in JFMC's Bank Account.** The Miliwatershed areas where degradation was higher in percentage was taken in first priority. Where aforestation can be done along with activities of income generation, it fell into the category of cluster A. As per the guidelines cluster B was those JFMCs which are having considerable amount in their account. Some of the JFMCs which do not have minimum required amount can be taken along with these JFMCs which has the considerable amount in their account as per their geographical location.

The proposed project will organize poor rural families of Dhamtari and Kanker of Chhatisgarh state into Self Help Groups to enhance of quality of forest and livelihood capabilities for developing secure livelihood oppurtunities.

The project will motivate and train forest dwellers in a phased manner to facilitate the development and implement plans to enhance productivity and carrying capacity of their forest land and water resources ,diversify and intensify agriculture and adopt husbandry –oriented resource management practices imperative for sustainable use of resources.

The project will build and nurture a large pool of resource persons drawn from rural people to support and sustain the resource management system. The proposed project would have an important demonstration effect on formulation of policies and creation of institutions in future.

Villagewise Activities & Budget Allocation

All the identified activities were listed during the PRA&RRA.These activities are incorporated in the chart enclosed here.The total number of activities to be carried out per village, per cluster and per village has been mentioned in detail in the chart.Similarly, the cost to incurred has also been mentioned in the separate chart.

CHAPTER 6

ACTION PLAN

TENTATIVE WORK PLAN FOR FIVE YEAR

S.N.	Activities	No. of Unit per JFMC	Per Unit Cost (In Rs.)	Tentative Unit Cost Per JFMC(for 10 JFMCs)	Total No. of JFMCs Covered	Total work to be done	Total Amount (In Rs.)
1	WadiDevelopmentwithFarmForestry**(1 Acre each)	10	60880	608800	17	170	1,03,49,600
2	SiteSpecificMicroIrrigationDevelopment Work(Stop dam / DrainageChannels /Turbines / CommunityTube Wellsetc.)	1	1780590	1780590	17	17	3,02,70,019
3.	Distribution of Alternate Fuel Energy Sources (Improved Biomass Chulha/ Cooking Stoves to all house holds & installation of Bio-Briquette machine in the cluster / Solar Led Lighting System)	50	10849	542432	17	850	92,21,350
4.	SMFE/any other Income	1	1055400	1055400	17	17	1,79,41,800

	Generation Activities based on						
	Local Needs/Resources Including						
	Private Nurseries ; Sericulture &						
	Pisciculture, etc.						
5.	High Density Pulpwood Plantation (forestry plantation)	5 Ha.	80,000/Ha	5 Ha.	17	85 Ha.	68,00,000
б.	Training, Exposure Visits and	10	9275	92750	17	170	15,76,750
	Community Mobilisation						
	*Separate list has been enclosed	for entire	activities wil	l be taken i	n first year 2	011-12 in cha	pter 9
Total	no. of Household = 2545				ž		
Total							7,64,91,519

TOTAL = 7,64,91,519/- (Rs. Seven Crore Sixty Four Lac Ninety One Thousand Five Hundred Nineteen Only)

******Grand Total = 8,79,65,247/-(Rs. Eight Crore Seventy Nine lac Sixty Five Thousand Two Hundred Forty Seven Only) (With 15% Administrative Cost)

The total project cost for the allotted 2545 house holds is approximately Rs. 8,79,65,247 after calculation per house hold cost to be incurred during the project period would be Rs. 34,564 Consequent to this it has been tentatively planned to include 1000 new house holds for next 3 years. Thus apart from the present projection we are anticipating to render the project benefit to 3000 new house holds for which the additional expanses would be Rs. 10,36,91,843.

*** All Financial Bifurcations for first year 2011-12 can be reviewed thoroughly in Chapter 9 Financial projection.

<u>CHAPTER – 7</u>

INDICATORS OF SUCCESS

- Availability of rich natural and forest resources in place of the present degraded forest areas.
- Increased level of sense of belongingness of the JFMC members/ villagers towards the forest.
- Awareness of development and maintenance of forest resources among rural people.
- Being a tribal dominant area having Naxalite problem some exemptions and additional relaxation on Goverment rules.
- Forest dwellers must realize the improvement in the quality of life because of project impact.
- Reduced dependence of community upon the forest for their livelihood by adopting new activities for income generation along with increased responsibilities towards the forest management.
- Reduction of fuel use consumption in the villages with increase in the use of alternative methods.

<u>Chapter -8</u>

Vision 2016

Sl. No	Success Indicators	Status as in 2010	Estimated status in 2016	Increase/ Decrease (%)
1.	Wadi development with farm forestry	Growing stage	Profit generating stage	Increased 40% additional income
2.	Distribution of alternate fuel energy sources	Poor	All areas will have minimized their dependency on natural energy resources	60% increase in alternate fuel energy consumtion and 70% decrease in natural energy resources
3.	High density pulp wood /energy/fodder	Not good	Planted plants will be matured and generate wealth	20% increase in income
4.	IGA based on local needs/Recourses (Nurseries/Sericulture/Piscicu lture etc.)	Nil	Reduce dependence on forest resources for livelihood	Increase in income as a main source of livelihood
5.	Fire wood briquettes	Nil	Maximum these will be used by community	70% decrease in fuel wood cutting

6.	Durable assets creation/ Site specific Micro Irrigation development work (Stop dams,drainage chhanels,tube wells,wells etc.)	Poor	Better	Increased durable infrastructur e atleast to meet their basic need.
7.	Irrigated area	Fertility is getting decreased	Irrigation potential increases	40% increase
8.	Water table and soil moisture	Average	Considerabl e increase in Water availability throughout the year	20-30 % Increase

<u>CHAPTER – 9</u>

FINANCIAL PROJECTION

The amount allotted for First Year 2011-12 is Rs. 1,30,00,000 in which first year's instalment for Dhamtari is Rs. 60,00,000 and Kanker is Rs. 60,00,000 District of CG.

*All financial projection of the project of Rs. 1,30,00,000 is in Microsoft Excel sheets which are enclosed. And can be reviewed from next page onwards.

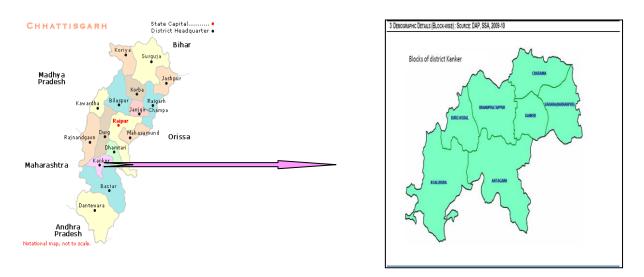
ANNEXURE I

PROFILE OF DISTRICTS KANKER AND DHAMTARI

District Profile of Kanker and Dhamtri can be reviewed from ANNEXURE II.

Kanker district is located in southern region of the state Chhattisgarh within the longitudes 20.6 - 20.24 and latitudes 80.48 - 81.48. The total area of the district is 5285.01 square kilometres. What is now Kanker district was a part of old Bastar district. In 1999 Kanker received its identity as an independent district. It is surrounded by five other districts of CG state, they are Bastar, Dhamtari, Durg, Narayanpur and Rajnandgaon district. Kanker has 1060 villages.

Five rivers flow through the district. These are Mahanadi , Hatkul , Doodh, Sindur and Turu. This district is made up of small pockets of hills.



It has Seven Tahseels named Anantagarh, Bhanupratappur, Charama, Durgkondal, Narharpur, Kanker, and Pakhanjur. There are 59 Gram Panchayats. The total number of inhabited villages are 97.

Geographical structure wise Kanker is having Vindhyana hill group, Archian hill group, Dharwar hill group, Mahanadi plane and Kotri plane.

Soil type is of Granite, Nees Sand, Khedar and Stone Powders. Soil can be divided into four sections, i.e. Kanhar, Dorsa, Matasi, and Bhata.

Mine based Industries		
Name of the Industry	Name of the Company	Place
Bauxite Calcinite Govindpur	Mers. Bauxite India Limited	

Forest plays an important role in the social and financial structure of Kanker. This district is rich in Forest wealth. Kanker district has two forest divisions Narharpur and Sarona. The main occupation of the rural people is predominantly agriculture.

Despite the social and infrastructure development in the district after formation of new state majority of the villages in the district face constraint such as education, health, drinking water, electricity, bank credit, market information, road, etc. In order to overcome these constraints NABARD has conceptualized a programme viz. Village Development Programme (VDP) for holistic and integrated manner. The implementation of VDP with focus on dovetailing socio –economic, infrastructure and human aspect of development of a village is expected to have more visible impact in rural areas.

Kanker	at	a G	lance	



Particular	Data
District	Kanker
Geographical Area	5146.84 Sq.kms.
District Head Quarter	Kanker
Distance of District Head Quarter from State Capital	140 Kms.
No. of Blocks	7 (Seven)
No. of Gram Panchayat	396
No. of Villages	1090
Average Rainfall	1390 mm.
Agricultural land	246631 ha.
Irrigated Area	13%
Area under Horticulture	Before State formation 7467 ha. After State formation 10431 ha.
Forest Cover	52%

ANNEXURE II

PROFILE OF DISTRICTS KANKER AND DHAMTARI

DISTRICT PROFILE OF DHAMTARI

Dhamtari is abbreviated from "Dhamma"+"Tarai". District is situated in the fertile plains of Chhattisgarh Region. This District is situated between 20⁰42' N Latitude and 81°33' E Longtitude. Dhamtari district is officially formed on 6th July 1998 dividing the Raipur district currently the capital of Chhattisgarh along with Mahasamund . As a result the boundaries of the Raipur district is converted into the districts e.g Raipur, Mahasamund and Dhamtari. Dhamtari, Kurud and Nagari are included in Dhamtari district as Tehsils and Dhamtari, Kurud, Nagari and Magarlod are included as blocks. The total area of the district is 2029 Sq. Km. and 305 Meter above the mean sea level. The District is surrounded by District Raipur in North & District Kanker as well as Bastar in South, part of Orissa state in East & District Durg and Kanker in West. Mahanadi is the main river of this district and Mahanadi is so far named as Kankannadi, Chitrotpala, Neelotpala, Mandvahini, Jairath etc.

Its tributaries being Sendur, Pairy, Sondur, Joan, Kharun and Shivnath. The fertility of lands of Dhamtari district can be attributed to the presence of these rivers. The chief crop of this region is Paddy. *Mahanadi* one of the major river in central India originates in the hills of Sihawa flows in the direction of East into the Bay of Bengal.

Dhamtari district falls between two Lok Sabha Constituencies (Kanker and Mahasamund) and three Assembly constituencies (Dhamtari, Kurud, Sihawa).The national highway No. 43 Raipur – Vijaynagaram (Andhra Pradesh) passes through Dhamtari. Raipur is 78 Km. from Dhamtari.

Unique feature of Dhamtari is the total number of Rice Mills that is more than 106.

In the east, Satpura range is located. It is popularly known as Sihawa pahad. In west lies district of Kanker. In North lies Raipur, the heart and capital city of Chhattisgarh. Southwards touches the boundary of Orrisa state. Ravishankar

Sagar dam that irrigates almost 57000 Hectare of land and also acts as a main supply unit of safe drinking water resource for state capital Raipur as well as supply to Bhilai Steel Plant lies at almost 11 Km from the District capital. Work of 10 MW hydro-electric power plants is progressing and is likely to be completed very soon.

Asia's first ever Siphon dam was built in the year 1914 at Madamsilli. Besides Madamsilli, Sondhur dam, Dudhawa dam are the major projects.

Particular	Data
District	Dhamtari
Came into existence	6 th July 1998
Geographical Area	2029 Sq. Km.
District Head Quarter	Raipur
Distance of District Head Quarter from State Capital	73 Kms.
Population	7.06 Lacs
No of Blocks	4 (Dhamtri, Kurud, Magarlod and Nagari)
ST Category	1.76 Lacs, 26.25% of total population
Major Tribes	Gond, Kamar, Halba
Marginal Workers	26%

<u>Dhamtari at a Glance</u>

Average Rainfall	1372 mm
Forest Cover	52%
Irrigated Areas	76%
Major Crops	Paddy, Maize, Arhar, Urd, Kulthi and Til
No. of inhabited Villages	629

	Alternative IGA Project, Vision Plan for year 2011-12					
Tote	Total number of villages covered $= 5$					
Dist	rict - Dhamtari					
1	Jabargaon					
2	Kasawahi					
3	Aroud					
4	Mathuradih					
Dist	District – Kanker					
1	Ankhiharra					
Tote	Total number of house holds covered = 978					
Tota	al number of beneficiaries = 4556					

	District - Dhamtari								
S.	Forest	Name of	Miliwat	Allotted	Area of	Area of	Amou		
N.	area	Panchyat	er shed	compartm	Compartm	Degrad	nt in		
			Number	ent no. of	ent	ed	JFMC		
				JFMC		Forest	(in		
							Rs.)		
1	Ksawahi	Tumraba	4G2G57	216	443.79	66.543	60064		
		har	4			8			
2	Arauda	Arauda		161	172.559		32239		
3	Mathuradi	Bhoyana	4G2G4	168	171.487	80.214	16443		
	ha		A5			1			
4	Jabargaon	Jabargao	113	168	151	1	48721		
		n							

	District - Kanker							
S.N.	Name of	Name of	Miliwater shed	Allotted	Degraded Forest			
	JFMC	Gram	Number	compartment	(hac.)			
		panchayat		no. of JFMC				
1	Ankhiharra	Ankhiharra	4G2G5C3	135	47.95%			

District - Dhamtari & Kanker												
Description of Households and Beneficiaries to be Covered in Year 2011-12												
S. N.	Particulars	Nam	Name of the Village in Kanker	Tot al								
		Janwar gaon	Kasa wahi	Mathur adih	Aro ud	Aankhi harra						
1	Total No. of Households	250	140				97					
	Covered			90	311	187	8					
2	Total No. of Beneficiaries	1150	670		140		45					
				447	0	889	56					
3	Total No. of Beneficiaries -	0	5				14					
	SC Category			5	0	4						
4	Total No. of Beneficiaries -	62	115				47					
	ST Category			75	61	163	6					
5	Total No. of Beneficiaries -	188	20				48					
	OBC Category			10	250	20	8					
6	Total No. of Beneficiaries -	0	0				0					
	Gen. Category			0	0	0						
7	Total No. of Beneficiaries –	241	58				82					
	APL			86	303	132	0					
8	Total No. of Beneficiaries –	9	82				15					
	BPL			4	8	55	8					

CHAPTER – IX Financial Overview

Financial Overview

GRAMIN VIKAS TRUST-RAIPUR DETAILS OF FINANCIAL PROGRESS FROM 01-04-2010 to 31.03.2011

Sr.#	Name of Funding Organisation	Title of the Project	(Da	,	Total Outlay of Project Sanctioned	Total Grant Received	Total Exps. Incurred till date	Total Income till date	Balance of Grant as on 31.03.11	Status of the Project as on
 			From	То	(Rs.)	till date				31.03.11
1	2	3	4	5	6	7	8	9	10	11
1	GVT-RAIPUR									
i	Forest Deptt. Authority, Dhamtari, Raipur (CG Govt.)	Forest- Smokeless Chullah	03.04.10	31.07.10	501500	501500	501500	0	0	Completed
ii	NABARD-Raipur	WADI-1, RPR	01.02.09	31.01.16	31278000	4485000	5481940	0	-996940	Continue
iii	NABARD, Raipur	WADI-2, RPR	01.02.10	31.01.16	37843000	2487000	3424549	0	-937549	Continue
vi	Navajbai Ratan Tata Trust, Mumbai	CINI Proj., RPR	01.04.10	31.10.12	9953000	31321	1975478	0	-1944157	Continue
v	Forest Development Authority, East Raipur (CG Govt.)	NRAA-FDA-SLP, Fingeshwar	20.05.10	30.04.12	6296000	628000	861663	0	-233663	Continue
vi	NABARD, Raipur	Village Development Prog.	01.10.10	30.09.11	250000	62500	13500	0	49000	Continue
vii	Forest Deptt., Raipur East (CG Govt.)	FDA-Monitoring & Evaluation	01.04.10	30.06.10	45000	45000	45000	0	0	Completed
viii	Forest Deptt., Raipur (CG Govt.)	Alt. IGA Proj.	24.07.10	23.07.15	87965247	1950000	301483	0	1648517	Continue
		Total			174131747	10190321	12605113	0	-2414792	