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**DOUBLING FARMERS' INCOME
BY
TECHNOLOGICAL INTERVENTIONS**



**ORISSA UNIVERSITY OF AGRICULTURE & TECHNOLOGY
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SUMMARY OF PROGRAMMES FOR DOUBLING FARMER'S INCOME

MODULE	Farming situation	Village, GP, Block	Existing Farming System	Present income 2015-16 Rs.	Propose Income 2018-19 Rs.	Risk & Uncertainty	Remark	
							Most Representative Module	Market Linkage
Module -I	Rainfed Laterite	Kadambabena Sariganda Dasapalla	Rice-Fallow+Vegetable+Goatery+Poultry+mushroom	27,495	49,410	Late Mansoon, Terminal drought and intime input availability	Rice- Greengram with homestead enterprises like Mushroom/ poultry/ dairy	For paddy & greengram market linkage exist
Module -II	Rainfed Laterite	Anlamada Gunthuni Khandapada	Rice- Green gram/ Black gram+Poultry+mushroom	43,200	58,855	Dry spell, abrupt cessation of mansoon rain and intime input availability		For paddy & greengram market linkage exist
Module -III	Irrigated	Darpanaryanpur Ranpur	Rice-Green gram+Vegetables+Poultry+Goatery+mushroom+Fishery	1,20,425	1,97,770	Limited Irrigation in rabi and intime input availability		For paddy & greengram market linkage exist. Vegetable locally sold
Module -IV	Rainfed Laterite	Notarapalli Komanda Odogaoon	Rice- Green gram+ Vermicomposting+ Poultry+Bee keeping+ kitchen gardening	33,375	53100	Dry spell, abrupt cessation of mansoon rain and intime input availability		For paddy & greengram market linkage exist
Module -V	Irrigated	Bhokilapada Bhagabanpur Bhapur	Rice-Fallow+Vegetable+Goatery+Poultry+dairy+mushroom	1,27,720	1,76,740	Marketing and intime input availability		For paddy & greengram market linkage exist, Vegetable and groundnut locally sold

MODULE I: RAINFED LATERITE,

Village: Kadambabena, GP: Sariganda, Block"; Daspalla

Farming situation	Existing practices 2015-16		1 st year (2016-17)		2 nd year (2017-18)		3 rd year (2018-19)	
	Component	Problems/ practices	Intervention	Yield & Net income/ha	Intervention	Expected Yield & net Income/ha	Intervention	Expected Yield & Income/ha
Upland (bonded) Rainfed	Rice – Fallow Khandagiri 22.2 q/ha Rs.8350 /ha	<ul style="list-style-type: none"> • Moist ure stress • High weed incidence • Blank et fertilizer applicatio n • Stem borer incidence 	1. Drought tolerant Shahabhagi Dhan 2. pre-emergence spray of Pretilachlor 50EC @ 0.6Kg /ha followed by one hand weeding	31.7q/ha Rs. 10375/-	<ul style="list-style-type: none"> • 1st year Intervention 3. STBF 	33.5q/ha Rs. 11675/-	2 nd year Intervention 4. Tricho-cards @ 50,000/Ha for 2-3 times at tillering stage. Preventive spray of Chloropyriphos @1ltr/Ha	35.0q/ha Rs. 12350/-
Medium land Rainfed	Rice – Fallow Rice (Lalat)-broadcasting 35.7q/ha Rs.12975/-	<ul style="list-style-type: none"> • Lack of suitable variety • High weed incidence • Improper nutrient management 	1. Bina dhan 11	42.3q/ha Rs.15350/-	<ul style="list-style-type: none"> • 1st year intervention 2. Post emergence spray of Bispyribac sodium @200ml/ha followed by one hand weeding 	45q/ha Rs. 16700/-	<ul style="list-style-type: none"> ▪ 2nd Year intervention 3. STBF application 	48.3 q/ha Rs. 17975 /-

	Fallow	Moisture Stress			1. Paira PU-35	2.5 Q/ha Rs.6425/-	<ul style="list-style-type: none"> ▪ PU-35 2. STBF 	3.0q/ha Rs. 7925/
Homestead	Goatery 33.6kg Rs 3570	<ul style="list-style-type: none"> • Mortality of kids • Poor body growth 	1. Deworming of kids (animal health camp)	48kg Rs. 5090	<ul style="list-style-type: none"> • Deworming 2. Protein supplementation 	55kg Rs 5830/-	<ul style="list-style-type: none"> • Deworming • Protein supplementation 	55kg Rs 5830/-
Homestead	Poultry (Rs 1550/10 bird)/4 months	<ul style="list-style-type: none"> • Local breeds • Poor body growth 	1. Breed Pallishree	Rs 2550/10 bird Feed /4 month (2.7 Kg/bird)	1. Pallishree (10 birds) 2. Feed supplementation (50g/ bird/day)	Rs.2930/10 bird/4 months (3.1 Kg/bird)	<ul style="list-style-type: none"> • Pallishree (10 birds) • Feed supplementation (50g/ bird/day) 	Rs.2930/10 bird/4 months (3.1 Kg/bird)
	Sell of paddy straw Rs 250	<ul style="list-style-type: none"> • No utilisation of farm waste 	<ul style="list-style-type: none"> ▪ Mushroom cultivation in (Paddy straw) ▪ 20 beds/year 	600/20 beds/year	<ul style="list-style-type: none"> • Mushroom (OSM-11) cultivation 30beds/year 	Rs.740/30 beds/year	<ul style="list-style-type: none"> ▪ Cultivation with rack system, Soaking of paddy straw in 2% CaCO₃, 30 beds) 	1200/30 beds/year
	Local Banana Rs 800/10 bunch				<ul style="list-style-type: none"> • Var. Bantal (10no) 			Rs. 1200/10 bunch

TOTAL	Rs.27,495 (Base line Income)	Rs.33,965 (23.5% increase)	Rs.44,300 (61.1% increase)	Rs.49,410 (80% increase)
<ul style="list-style-type: none"> (Increase in net income over base year 2015-16) 				

MODULE II: RAINFED LATERITE
Village: Anlamada, GP: Gunthuni, Block: Khandapasda

Farming situation	Existing practices 2015-16		1 st year (2016-17)		2 nd year (2017-18)		3 rd year (2018-19)	
	Component	Problems/ practices	Intervention	Yield & Net income/ha	Intervention	Expected Yield & net Income/ha	Intervention	Expected Yield & Income/ha
Medium land Rainfed	Rice-Green gram <u>Rice</u> Var-MTU-7029 Broadcasted 40.5 q/ha Rs 13500	<ul style="list-style-type: none"> Severe sheath blight incidence in rice High weed incidence Blanket fertilizer application 	1. Sheath blight management by alternate spraying of (Trifloxystrobin and Tebuconazole @0.4 g/lit and Thifluzamide @ 1ml/l of water	42.8q/ha Rs. 14250	2. Pretilachlor followed by Bispyribac sodium @ 200ml/ha	47.2q/ha Rs.1575 0/-	<ul style="list-style-type: none"> 2nd year intervention 2. STBF application 	49.5q/ha Rs.16500/- /-
Medium land Rainfed	Green gram Var-Nayagarh Local 3.0q/ha	<ul style="list-style-type: none"> Severe YMV incidence High weed incidence 	1. Green gram var. IPM -02-14	3.75q/ha Rs.9625/-	<ul style="list-style-type: none"> 1st Year intervention 2. Imazethapyr @ 750 ml/ha Quizalophop 	4.1q/ha Rs.1035 0/-	<ul style="list-style-type: none"> Var³IPM 2-14/IPM2-3 3. STBF 	4.6q/ha Rs. 11875/-

	Rs 7250				ethyl 1l/ha at 15 DAS			
Shallow low land rainfed	Rice- Green gram/Black gram Rice Var-Pooja 41.5q/ha Rs 1385	<ul style="list-style-type: none"> Broadcasting High BPH incidence Improper nutrient and weed management 	1. Line sowing behind the plough	44.8q/ha Rs 14925	2. BPH management by making alleys, alternate spraying of buprofezin 300ml/ac with thiomethoxam 60g/ac	49.5q/ha Rs 16500	3. STBF application 4. Pre emergence spray of Pretilachlor followed by one hand weeding	52.0q/ha Rs 17325
Shallow low land rainfed	<u>Black gram</u> var-Nayagarh Local 2.5 q/ha Rs 6425	Delayed sowing	1. Paira (Black gram) PU-31	2.5q/ha Rs 6353	<ul style="list-style-type: none"> Var. PU-31/35 STBF Seed treatment 	3q/ha Rs 7625	Var. PU-31/35 Seed treatment, STBF	3.0q/ha Rs 7625
Homestead	Poultry in backyard (Rs 1550/10 bird)/4 months	<ul style="list-style-type: none"> Local breeds Poor body growth 	1. Breed replacement with Pallishree in backyard	Rs 2550/10 bird /4 month (2.8 Kg/bird)	Pallishree (10 birds) 2. Feed supplementation (50g/ bird/day)	Rs.2930/10bird/4 months (3.5 Kg/bird)	Pallishree (10 birds) Feed supplementation (50g/ bird/day)	Rs.2930/10 bird/4 months (3.5Kg/bird)
Homestead	Mushroom Rs 625/25 beds	Unscientific mushroom production	1. Mushroom cultivation in (Paddy straw) 25beds/year	1175/25 beds/year	2. Mushroom (OSM-11) cultivation 40beds/year	Rs. 1880/40 beds/year	3. Cultivation with rack system, Soaking of paddy straw in 2% CaCO ₃ , 75 beds)	2600/50 beds/year

TOTAL	Rs.43,200 (Base line Income)	• Rs.48,025 (11.2% increase)	Rs.53,585 (24% Increase)	Rs.58,855 (36.2% Increase)				
<ul style="list-style-type: none"> (Increase in net income over base year 2015-16) 								

MODULE III: IRRIGATED
Village/GP: Darpanaryanpur, Block: Ranpur

Farming situation	Existing practices 2015-16		1 st year (2016-17)		2 nd year (2017-18)		3 rd year (2018-19)	
	Component	Problems/practices	Intervention	Yield & Net income/ha	Intervention	Expected Yield & net Income/ha	Intervention	Expected Yield & Income/ha
Upland Irrigated (Minor irrigation, limited irrigation)	Rice-Green gram' Rs18,750/ha	<ul style="list-style-type: none"> Summer fallow Low return from rice and green gram 	1. Crop diversification with Kharif Tomato Arka Rakshyak	190q/ha Rs. 53000	<ul style="list-style-type: none"> Tomato/Cauli flower 2. STBF 	196q/ha Rs.56300	3. 2 nd Year intervention 3. Micronutrient application	211.3q/ha Rs 63225 /-
Medium Land Irrigated	Rice-vegetables Rice-Var. MTU-	<ul style="list-style-type: none"> Imbalanced nutrient application High BLB 	1. STBF 2. Seed treatment and foliar spray with COC and	40/ha Rs.14925	transplanting by Rice transplanter	42q/ha Rs16425	Land preparation by rotavator STBF application rice transplanter	45q/ha Rs 17000

	1001 38.1 q/ha Rs.14250	<ul style="list-style-type: none"> ▪ incidence ▪ Labour intensive 	Streptocycline					
Medium Land Irrigated	Brinjal 200q/ha Rs.85750	<ul style="list-style-type: none"> ▪ variety ▪ Imbalanced nutrition ▪ Shoot and fruit borer/wilt incidence 	1. Brinjal Arka Neelanchal Shyama	224/ha Rs.97200	<ul style="list-style-type: none"> • Brinjal Arka Neelanchal Shyama 2. STBF 	242/ha Rs 105350	<ul style="list-style-type: none"> • STBF in Brinjal 3. Control of fruit and shoot borer in Brinjal/wilt 	254q/ha Rs 111225
Homestead	Poultry in backyard (Rs 1550/10 bird)/4 months	<ul style="list-style-type: none"> • Local breeds • Poor body growth 	1. Breed replacement with Pallishree in backyard	Rs 2550/10 bird /4 month (2.8 Kg/bird)	Pallishree (10 birds) 2. Feed supplementation (50g/ bird/day)	Rs.2930/10bird/4 months (3.5 Kg/bird)	Pallishree (10 birds) Feed supplementation (50g/ bird/day)	Rs.2930/10 bird/4 months (3.5Kg/bird)
Homestead	Mushroom Rs 625/25 beds	Unscientific mushroom production	1. Mushroom cultivation in (Paddy straw) 25beds/year	1175/25 beds/year	2. Mushroom (OSM-11) cultivation 40beds/year	Rs. 1880/40 beds/year	3. Cultivation with rack system, Soaking of paddy straw in 2% CaCo ₃ , 75 beds)	2600/50 beds/year
	Goatery/Sheepery 33-6kg Rs. 3570	<ul style="list-style-type: none"> ▪ Mortality of kids ▪ poor body growth 	<ul style="list-style-type: none"> ▪ Deworming kids (Animal health camp), Disease mgt. with the help of ARD, Ranapur 	48kg Rs. 5090	Protein supplementation and disease mgt. (inputs)	55kg Rs.5830	<ul style="list-style-type: none"> • Housing & disease mgt.(Trg) 	55kg Rs.5830

	Fishery Rs. 5500	Low fish production from existing pond	▪ Yearling production (Trg. and Inputs)	10000/0.2A C	▪ Yearling production (Trg. and Inputs)	10000/0. 2AC	▪ Yearling production (Trg. and Inputs)	10000/0.2A C
TOTAL	Rs.129495		Rs.184440 (42.4% Increase)		Rs.199505 (54.1% Increase)		Rs.213600 (64.9% Increase)	
<ul style="list-style-type: none"> (Increase in net income over base year 2015-16) 								

MODULE IV: RAINFED LATERITE
Village: Notorapalli, GP: Komanda, Block: Odagaon

Farming situation	Existing practices 2016-17		1 st year (2017-18)		2 nd year (2018-19)		3 rd year (2019-20)	
	Component	Problems/practices	Intervention	Yield & Net income/ha	Intervention	Expected Yield & net Income/ha	Intervention	Expected Yield & Income/ha
Upland Rainfed	Rice fallow Paddy (broadcasting) var-Dhalabhata, laghubhutia 22.2q/Ha, Rs 7975	<ul style="list-style-type: none"> Broadcasting High weed incidence Imbalanced nutrition Stem borer infestation 	<ol style="list-style-type: none"> Line sowing behind the plough. Weed management by using weeder. Training & awareness 	24.8q/ha Rs. 8950/-	<ul style="list-style-type: none"> 1st year intervention 4. Nutrient management by using organic manure (5 ton/ha) 	27 q/ha Rs.10450 /-	<ol style="list-style-type: none"> 2nd year intervention 5. Summer ploughing, early planting, Release of T. japonicum @ 50,000/ha for 6 times at 10 days interval, & setting up of pheromone 	29q/ha Rs. 11525/-

							traps @ 20nos /ha	
Medium land Rainfed	Rice- Green gram (broadcasting)(var. MTU-7029) 40.5 q/ha Rs 13500	<ul style="list-style-type: none"> Broadcasting Insufficient nutrition High Sheath blight incidence 	1. Rice transplanting by SRI method	47.7q/ha Rs.17050/-	<ol style="list-style-type: none"> 1st year intervention Green manuring with Dhanicha 	50.75 q/ha Rs.18225	<ol style="list-style-type: none"> 2nd year intervention Deep summer ploughing Application of neem oil cake 2.5 Q/Ha 	53.7q/ha Rs.18275/-
Medium land Rainfed	Green gram Var-Nayagarh Local 3q/ha Rs 7250	<ul style="list-style-type: none"> Severe YMV incidence Broadcasting <p>Root rot incidence in local green gram.</p>	<ol style="list-style-type: none"> Varietal replacement with IPM 02-14 Seed treatment with Rhizobium @ 20gm/kg of seed 	3.75q/ha Rs.9625/-	<ul style="list-style-type: none"> 1st year intervention <ol style="list-style-type: none"> Line sowing using seed cum fertilizer drill 	4.1q/ha Rs.10350/-	<ul style="list-style-type: none"> 2nd year intervention <ol style="list-style-type: none"> Management of root rot and YMV(Use of tricho derma viridae and psedonas Green gram Storage by using pro superbag 	4.6q/ha Rs. 11875/-
Homestead	Poultry in backyard (Rs 1550/10 bird)/4 months	<ul style="list-style-type: none"> Local breeds Poor body growth 	1. Breed replacement with Pallishree in backyard	Rs 2550/10 bird /4 month (2.8 Kg/bird)	<ul style="list-style-type: none"> Pallishree (10 birds) <ol style="list-style-type: none"> Feed supplementation (50g/ bird/day) 	Rs.2930/10bird/4 months (3.5 Kg/bird)	<ul style="list-style-type: none"> Pallishree (10 birds) Feed supplementation (50g/ bird/day) 	Rs.2930/10 bird/4 months (3.5Kg/bird)

Income generation	FYM Rs 2900	No vermicomposting	1. Vermicomposting (Training & Inputs(Vermin))	Rs 4500/bed/year	Vermicomposting (Training & Inputs(Vermin, Vermiwash))	Rs 4700	Commercialization of Vermin	Rs 4700
Income generation	Lack of knowledge on beekeeping	Lack of knowledge on beekeeping	1. Bee Keeping (Training & Inputs(Colony with accessories)	Rs. 1250/4 boxes	<ul style="list-style-type: none"> 1st year intervention 2. Colony division & Honey Extraction 	Rs. 2300/4 boxes (6 colony sell & honey 8kg	<ul style="list-style-type: none"> 2nd year intervention & Marketing 	Rs. 2300/4 boxes (6 colony sell & honey 8kg
Nutritional security	Kitchen gardening Rs 700		1. HYV Papaya and banana plantation (5 plants each)	Rs 1100	HYV Papaya and banana plantation (5 plants each)	Rs 1300	HYV Papaya and banana plantation (7 plants each)	Rs 1500
Total	Rs.33375 (Base line Income)			Rs.45025 (35% Increase)	Rs.50255 (50.6% Increase)		Rs.53100 (59.2% Increase)	
(Increase in net income over base year 2016-17)								

MODULE V: IRRIGATED

Village: Bhokilapada, GP: Bhagabanpur, Block: Bhapur

Farming	Existing practices 2016-17	1st year (2017-18)	2nd year (2018-19)	3rd year (2019-20)
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situation	Component	Problems/ practices	Intervention	Yield & Net income/ha	Intervention	Expected Yield & net Income/ ha	Intervention	Expected Yield & Income/ha
Upland (Bonded) Irrigated	Rice vegetable Rice (Var- Annapurna, Kulia), (Broadcasting) paddy (22.2q/ha, Rs 7975)	<ul style="list-style-type: none"> • Broadcasting • High weed incidence • Blanket fertilizer application • Stem borer infestation 	<ol style="list-style-type: none"> 1. Line sowing behind the plough 2. Pre-emergence spray of pretilachlor @ 0.6Kg a.i./ha followed by one hand weeding 	24.7q/ha Rs. 8950/-	<ul style="list-style-type: none"> • 1st year intervention 3. STBF 	27.8q/ha Rs 9950 /-	<ul style="list-style-type: none"> • 2nd year intervention 4. Tricho-cards @ 50,000/Ha for 2-3 times at tillering stage. Preventive spray of Chloropyriphos @1ltr/Ha 	29.5q/ha Rs 10600/-
Upland (Bonded) Irrigated	Brinjal (Local type Brinjal 200q/ha Rs.85750	<ul style="list-style-type: none"> • Lack of suitable HYV var. • High pest & disease incidence • No micronutrient application 	1. HYV Arka Neelanchal Shyama	224/ha Rs.97200 /-	2. Wilt, fruit and shoot borer in brinjal	242/ha Rs 105350	3. Micronutrient application in brinjal	254q/ha Rs 111225
Medium land Irrigated	Rice-Green gram Rice (Var- Swarn,) (Broadcasting) (40.5q/ha) Rs 13500	<ul style="list-style-type: none"> • Sheath blight incidence • High weed incidence • Blanket fertilizer application 	1. Sheath blight management by alternate spraying of (Trifloxystrobin and Tebuconazole @0.4 g/ltr and	Yield 42.7q/ha Rs. 14250	2. Pretilachlor followed by Bispyribac sodium @ 200ml/ha.	Yield 47.2q/ha Rs. 15750/-	<ul style="list-style-type: none"> • 2nd year intervention 3. STBF application 	49.5q/ha Rs.16500/-

			Thiﬂuzamide @ 1ml/l of water					
Medium land Irrigated	Green gram Var- Nayagarh Local 3q/ha Rs 7250	<ul style="list-style-type: none"> Severe YMV incidence High weed incidence 	1. Green gram var. IPM -02-14	3.75q/ha Rs.9625/	<ul style="list-style-type: none"> 1st Year intervention 2. Imazethapyr @ 750 ml/ha/ Quizalophop ethyl 1l/ha at 15 DAS 	4.1q/ha Rs.1035 0/-	<ul style="list-style-type: none"> Var'IPM2-14/IPM2-3 3. STBF 	4.6q/ha Rs. 11875
Homestead	Goatery /Sheepery 33.6kg Rs 3570	Mortality of kids. Poor body growth	1. Deworming of kids (animal health camp) and disease management with the help of ARD	48kg Rs. 5090	2. Protein supplementation and disease mgt.(Inputs)	55kg Rs 5830/-	3. Housing and disease mgt. (Trg.)	55kg Rs 5830/-
Homestead	Dairy Rs 2500/year/ cow	Low production of milk (2.6 lit/day/cow)	1. Azolla feeding to mulching cow(Trg. And Inputs)	3.2lt/day/ cow Rs.4500/yr/ cows	2. Use of Mineral mixture for higher productivity	3.6l/day/ cow Rs.5500/ year/co w	3. Pre -biotic	3.8l/day/ cow Rs.5900/ Yr/cow
Homestead	Poultry in backyard (Rs 1550/10 bird)/4 months	<ul style="list-style-type: none"> Local breeds Poor body growth 	1. Breed replacement with Pallishree in backyard	Rs 2550/10 bird /4 month (2.8 Kg/bird)	<ul style="list-style-type: none"> Pallishree (10 birds) 2. Feed supplementation (50g/ bird/day) 	Rs.2930/10bird/4 months (3.5 Kg/bird)	<ul style="list-style-type: none"> Pallishree (10 birds) • Feed supplementation (50g/ bird/day) 	Rs.2930/10 bird/4 months (3.5Kg/bird)

Homestead	Mushroom Rs 625/25 beds	Unscientific mushroom production	1. Mushroom cultivation in (Paddy straw) 25beds/year	1175/25 beds/year	2. Mushroom (OSM-11) cultivation 40beds/year	Rs. 1880/40 beds/yea r	3. Cultivation with rack system, Soaking of paddy straw in 2% CaCO ₃ , 75 beds)	2600/50 beds/year
Total	Rs 122220 (Base line Income)		Rs 143340 (17.2% Increase)		Rs. 157540 (28.8% Increase)		Rs. 166740 (36.4% Increase)	
<ul style="list-style-type: none"> (Increase in net income over base year 2016-17) 								