# KRISHI VIGYAN KENDRA,

# KALAHANDI

## Orissa University of Agriculture & Technology

## Bhubanswar

## Block Covered under different Agro-ecological Situation & Cropping System

| ACZ | AES | Block | Area (000, ha) | Farming System |
|---|---|---|---|---|
| Western Undulating Zone | Black soil, high rainfall, medium elevation | Kesinga | 42120 | Paddy, Cotton, Arhar, Black gram , Green gram, Maize, Groundnut, Banana, poultry |
| | Alluvial | Dharmagarh | 41826 | Paddy, Groundnut, Banana, Green gram, Vegetable (Brinjal, chilli, Tomato, Cole crop ), poultry |
| | Red soil, high rainfall. High elevation | Lanjigarh | 121681 | Paddy, Cotton, Arhar, Maize, green gram Vegetable (Brinjal, chilli, Tomato, Cole crop ), poultry, Goatery |
| | Red Soil, Medium Rainfall, Medium elevation | Golamunda | 70226 | Paddy, Ground nut, Green gram, Black gram, Vegetable (Brinjal, chilli, Tomato, Cole crop ), poultry |
| | Red and yellow soil, high rainfall, medium elevation | Narla | 49088 | Paddy, Cotton, Arhar, Maize, Groundnut, Black gram, Green gram, poultry, Goatery |

| SUMMARY OF THE MODULE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **District** | **Module** | **Farming Situation / AES** | **Village / Block** | **Name of existing farming system** | **Present Income 2016-17** | **Proposed Income 2017-18** | **Proposed Income 2018-19** | **Risk/ Uncer-tainty** | **Most representative module of the district** | **Remarks (Linkage)** |
| **Kalahandi** | **I** | **Black soil, high rainfall, medium elevation** | **Boria, Kesinga** | **Pigeon pea-fallow Paddy-green gram Poultry** | **93400** | **111000** | **133000** | **Erratic Rainfall** | **Module-IV** | **Scope for Pigeon pea processing and marketing through FIG, CIG, SHG Credit & market linkage** |
| | **II** | **Alluvial** | **Boden, Dharmagarh** | **Vegetable-Vegetable Paddy-Paddy Paddy-green gram Poultry** | **187500** | **245400** | **293000** | **Erratic Rainfall & late release of cenal water** | | **Credit & market linkage through FIG, CIG, SHG Scope for vegetable storage and farmers market** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | III | Red soil, high rainfall. High elevation | Kamardha, Lanjigarh | Maize -fallow Paddy-Green gram Poultry-goatery | 94000 | 114500 | 129500 | Drought prone & erratic rain fall | | Credit & market linkage Scope for primary processing of processing and marketing through FIG, CIG, SHG |
| | IV | Red Soil, Medium Rainfall, Medium elevation | Temri, Golamunda | Black gram-Ground nut Paddy-Vegetables Paddy-paddy Poultry | 144000 | 194000 | 227600 | Drought prone, erratic rain fall & undulating land situation | | Credit & market linkage through FIG, CIG, SHG |
| | III | Red and yellow soil, high rainfall, medium elevation | Dahala, Narla | Cotton-fallow Paddy-Green gram Poultry-goatery | 93500 | 108420 | 128800 | Drought prone & erratic rain fall | | Credit & market linkage through FIC, CIG, SHG |

## MODULE-I Doubling Farmers Income by Technological Interventions
## Operational Village- Boria GP- Boria Block- Kesinga Dist- Kalahandi
## Farming Situation- Rainfed Agro Eco-system

| Farming situation | Existing practices 2015-16 | | 1st year (2016-17) | | 2nd year (2017-18) | | 3rd year (2018-19) | |
|---|---|---|---|---|---|---|---|---|
| | Component | Problems/ practices | Intervention | Yield & Net income/ ha | Intervention | Expected Yield & net Income/ ha | Intervention | Expected Yield & Income/ ha |
| Rainfed (Up land) | Pigeon Pea-Fallow 7.0 q/ ha (Rs.16,000 ) | • Low yield due to severe pod borer infestation<br>• Use of Local Pigeon Pea (desi kandula & kabara kandula)<br>▪ Blanket Fertilizer and no seed inoculation practice<br>▪ High Seed rate | Demonstration on IPM of pod borer in Pigeon Pea<br>1. Installation of pheromone trap @ 20 /acre with application of neem based pesticide @5ml/liter at vegetative stage<br>2. spraying of Triazophos + Deltamethrin | 10.0 q/ha<br><br>(Rs.20,000) | Cluster Demonstration Pigeon pea ( C.v Asha)<br><br>3. Rhizobium & PSB @ 20 gm/kg of seed<br><br>4. Line sowing behind the plough (60x45 cm) | 12 q/ha<br><br>(Rs. 23,000) | 5. Cluster Demonstration on Pigeon Pea (PRG-176)<br><br>6. STBF | 12.5 q/ha<br><br>(Rs.25000) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | @2ml/liter of water for management of pod borer in pigeon pea) | | | | | |
| Rainfed (Medium land) | Rice-Green gram Paddy (Lalat) 26 q/ha (Rs.12,400) | ▪ Low yield due terminal drought<br>▪ High weed incidence<br>▪ Imbalance dose of fertilizer application<br>▪ Staggered planting | 1.Cultivation of short duration rice Var-DRR42 & DRR44 | 38 q/ha,<br><br>Rs 18,000./ha | 2. Weed management in paddy-Pre-emergence weedicide Londax power (Bensulfuron methyl+ pretilachlor) @ 10kg/ha 0-5 DAT<br>3. Line transplanting of paddy by transplanter | 40q/ha<br><br>Rs.20,000/ha | 4. Post – emergence weedicide Bispyribic sodium200ml/ ha followed by one hand weeding<br>5. STBF | 40 q/ha<br><br>Rs. 22,000/ha |
| | Green gram-4.2q/ha Rs.12000 | YMV infestation High seed rate Low yield Farmers do not apply fertilizer and biofertilzer | Demonstration on Management of YMV<br>1. Installation of yellow sticky trap<br>2. Thiomethoxam 25 % WG @ | 5.8 q/ha<br><br>(Rs.15000) | 3. Demonstration on Green gram (var. IPM 02-3)<br>4. Seed inoculation with rhizobium& PSB @ 20 gm/kg of seed | 6.4q/ha<br><br>(Rs.18,000) | 5. Green gram seed production Programme (IPM 02-14)<br>6. STBF | 5q/ha<br><br>(Rs.21000) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 100 gm/ha | | | | | |
| Rainfed (Low land) | Rice- Green gram<br><br>Rice: 30q/ha<br>Rs. 16,000 | ▪ Heavy weed problem in paddy<br>▪ Old variety (Pooja)<br>▪ Blanket fertilizer<br>▪ Incidence of blast & sheath blight disease in paddy | Demonstration effect of Herbicide in paddy<br>1.Pendimethalin (38.7% SC) @ 750gm/ha/ Bispyribic Na200ml/ha at 0-3 DAT | 35 q/ha<br><br>Rs. 18,000 | ▪ 2.Demonstration on HYV BIna-11 in low land<br>3.STBF | 38.0 q/ha<br><br>Rs.20,000 | 4. Spraying of Tricyclazole @ 300 gm/ha for control against blast<br>5. Application of Propiconazole @ 1lit/ha for control against sheath blight | 40.0 q/ha<br><br>Rs.22,000 |
| | Rabi Green gram (residual moisture)<br>3.8 q/ha<br>Rs. 8,000 | ▪ Blanket fertilization and seed inoculation is not followed<br>▪ YMV Incidence<br>▪ Weed infestation<br>▪ Lack crop management practices | 1. Seed inoculation with rhizobium& PSB @ 20 gm/kg of seed .<br>2. STBF | 5.5 q/ha (Rs.12000) | Demonstration on Management of YMV<br>3. Installation of yellow sticky trap<br>4. Flonicamid @50/ha/ 50% WG @ 75 gm a.i/ha | 5.8q/ha<br>Rs.15,000 | 5. Application of Imazythapyr. @750ml/ha 15DAS<br>6. Planofix hormone 250ml/ha before flowering for better pod development. | 6.0q/ha<br>Rs.18,000 |
| Allied Homestead activities | Poultry birds- (Rs. 4,000) | ▪ Low income from poultry due to rearing of local bird | 1. Backyard poultry 10 nos (Vanaraja)<br>2. Vaccinati | Net Income-Rs. 6000/- | 3. Backyard poultry 20nos (Vanaraja) with proper | Net Income-Rs. 8000/- | 5. Backyard poultry 30 nos (palishree) with proper | Net Income-Rs.12000/- |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | on of birds (Laasota+Gumber) | | vaccination (Lassota+ Gumber)<br>4. Supplementary feeding with azolla | | vaccination (Lassota+ Gumber)<br>6. Supplementary feeding with azolla<br>7. Calcium supplementation to birds | |
| | Mushroom cultivation | • Not cultivating mushroom<br>• New intervention | 1. Mushroom production of Paddy straw mushroom (20 beds) and Oyster mushroom(20 bags) | Net Income 16kg PSM@100 30kg OM@ (Rs. 3400/-yr) | 2. Mushroom production of OSM-11 (40 beds/month) and Blue Oyster mushroom cultivation40bags/day | Net Income 32kg PSM@100 60kg OM@ (Rs. 8000/-yr) | 3. Mushroom production of OSM-11 (50 beds/month)and Blue Oyster mushroom cultivation(50 beds/month)<br>4. Management of competitor moulds and diseases in straw mushroom | Net Income 40kg PSM@100 75kg OM@ (Rs. 10000/-yr) |
| Total | 73400 | | 93400 (27.2%) | | 111000 (51.2%) | | 130000 (77.1%) | |

| MODULE-II Doubling Farmers Income by Technological Interventions<br>Operational Village- Boden GP- Block-Dharmagarh District- Kalahandi<br>Farming Situation- Irrigated Agro Eco-system | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Farming situation | Existing practices 2015-16 | | 1st year (2016-17) | | 2nd year (2017-18) | | 3rd year (2018-19) | |
| | Component | Problems/ practices | Intervention | Yield & Net income/ha | Intervention | Expected Yield & net Income/ha | Intervention | Expected Yield & Income/ha |
| Irrigated (Up land) | Vegetables (Chilli & Brinjal)<br><br>(Rs.,70000) | • Use of low quality planting material<br>• Lack of proper fertilizer dose<br>• Fruit and shoot borer is the major problem in Brinjal<br>• Infestation of Sucking pest and wilting problem in chilli | -- | -- | 1. Cultivation of HYV Brinjal A.Navneet<br>2. Spraying of Cartap Hydrochloride @1.5 g/lit or Thiodicarb 75 WP @1.5 g/lit of water for control against borer<br>3. Neem pesticides @ 2.0 litre/ha | 210 q/ha<br><br>Rs.85000/ha | 4. HYV chilli C.v Utkal abha, utkal roshni resitance to wilt<br>5. Alternate spraying of Phosalone 35 EC@ 500ml/Ha. and Thiomethoxam 25WG @ 100gm/Ha. at 10 days interval to control sucking pest and streptomycin2gm/10lit of water to | 40q/ha<br><br>Rs.1,00,000/ ha |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | control wilt.<br>6. STBFA | |
| | Vegetables (Tomato, Cabbage & Cauliflower) Rs. 70,000 | • Use of low quality planting material<br>• Whip tail and DBM in Cauliflower and micronutrient deficiency in Cauliflower.<br>• Fruit borer and leaf curl in tomato | -- | -- | 1. Installation of yellow sticky trap@20/ha<br>2. Spraying of Virex-H @1.5 ml/litter of water thrice at 7 days interval for management of whitefly vector<br>3. Sparying of 5% neem seed kernel extract to kill early stages larvae and spraying of spinisod0.4ml /lit to control fruit borer in Tomato. | 220q/ha Rs.80,000 | 4. Application of Molybdate2gm/lit of water to control whiptail and Dichlorovous 3ml/lit of water to control against DBM<br>5. Foliar spraying of bororn2gm/lit of water or soil application of Barax10kg/ha during final ploughing. | 180q/ha Rs.95,000 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Irrigated (Medium land) | Rice- Green gram Paddy (Lalat) 26 q/ha (Rs.13500) | • Imbalance fertilization (heavy use of N fertilizer application<br>• Manual weeding<br>Leaf folder, BPH, WBPH & Gall midge incidence | -- | -- | 1. STBF<br>2. Londax power (Bensulfuron methyl+ pretilachlor ) @ 10kg/ha 0-5 DAT<br>3. Use of power weeder | 34 q/ha<br><br>Rs.22,400/ha | 4. Spraying of Flubendiamide 240 SC + Thiacloprid 240 SC ) @ 300 ml/ha twice i.e. at Tillering & P.I. stage for management of Gall midge, LF & BPH, WBPH | 36q/ha<br><br>Rs24,000./ha |
| | Rabi Green gram- Fallow 4.2q/ha Rs.14,000 | • Low income due to local cultivar<br>• Improper fertilizer application and seed inoculation practice<br>• High weed incidence<br>• Sucking pest infestation | -- | -- | 1. Demonstration of Green gram IPM02-3<br>2. Demonstration on Pre-Herbicide (Pendimethalin1lit/ha)application in Green gram<br>3. Seed inoculation with rhizobium & PSB @ 20 gm/kg of seed<br>4. Line sowing | 6.0 q/ha<br><br>(Rs.19,000 ) | 5. Management of YMV by Installation of yellow sticky trap<br>6. Flonicamid @50/ha/ 50% WG @ 75 gm a.i/ha/ Thiomethoxam 25 % WG @ 100 gm/ha | 6.8 q/ha<br><br>(Rs.22,000) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Irrigate(Low land) Rice/Rice** | **Rice- Rice**<br><br>**Rice: 29q/ha Rs. 16000** | • **Overdose of N-fertilizer application**<br>• **High cost due to manual weeding**<br>• **Incidence of Stem borer and Blast** | **--** | **--** | **1. HYV DRR-64**<br>**2. Green manuaring with dhanicha @ 25kg/ha**<br>**3. Herbicde pendimethlin (38.7% SC) @ 750gm/ha/ Bispyribic Na 25 gm.ha at 0-3 DAT** | **35.0 q/ha**<br><br>**Rs.23,000** | **4. Application of Cartaphydrochloride 4% @ 1.25 kg/ 10 decimal in nursery field to control stem borer**<br>**5. Skip row method of planting**<br>**6. Foliar spraying of crop at tillering, boot leaf and grain formation stage with Isoprothilane 40% EC @1.5ml /lit of water along with sticker for blast management in paddy**<br>**7. Line sowing with transplanter** | **42.0 q/ha**<br><br>**Rs.30,600** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Allied activities**<br><br>**Home Stead** | **Poultry birds- (Rs. 4,000)** | • **Low income from poultry due to rearing of local bird** | | | **1. Backyard poultry 20nos (Vanaraja) with proper vaccination (Lassota+ Gumber)**<br>**2. Supplementary feeding with azolla** | **Net Income- Rs. 8000/-** | **3. Backyard poultry 30 nos (palishree) with proper vaccination (Lassota+ Gumber)**<br>**4. Supplementary feeding with azolla**<br>**5. Calcium supplementation to birds** | **Net Income- Rs.12000/-** |
| | **Mushroom cultivation** | • **Not cultivating mushroom**<br>• **New intervention** | | | **1. Mushroom production of OSM-11 (40 beds/month) and Blue Oyster mushroom cultivation**<br>**2. 40bags/day** | **Net Income 32kg PSM@100 60kg OM@ (Rs. 8000/-yr)** | **3. Mushroom production of OSM-11 (50 beds/month)and Blue Oyster mushroom cultivation(50 beds/month)**<br>**4. Management of competitor moulds and diseases in straw mushroom** | **Net Income 40kg PSM@100 75kg OM@ (Rs. 10000/-yr)** |
| **Total (Rs.)** | **187500** | | **--** | **--** | **245400 (30%)** | | **293000 (56.2%)** | |

| MODULE-III Doubling Farmers Income by Technological Interventions<br>Operational Village- Kamardha, GP- Kamardha, Block- Lajigarh Dist- Kalahandi<br>Farming Situation- Rainfed Agro Eco-system | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Farming situation | Existing practices 2015-16 | | 1st year (2016-17) | | 2nd year (2017-18) | | 3rd year (2018-19) | |
| | Component | Problems/ practices | Intervention | Yield & Net income/ha | Intervention | Expected Yield & net Income/ha | Intervention | Expected Yield & Income/ha |
| Rainfed (Up land) | Maize- fallow<br>15q<br>Rs.12000 | ▪ Local cultivar<br>▪ Blanket fertilization<br>▪ Weed infeststaion | -- | Rs.12,000/- | 1. Introduction of Hybrid Maize C.v Hycel, PAC-705<br>2. STBF | 20q<br>Rs.20,000 | 3. Pre emergence herbicide application in Maize (Atrazine 1kg a.i/ha) | 25q/ha<br><br>(Rs. 23,000) |
| Rainfed (Medium land) | Rice-Green gram Paddy(MTU 1001)<br>28 q/ha<br>(Rs.13000) | • High weed incidence<br>• Imbalance dose of fertilizer<br>• application Low yield due terminal drought<br>• Incidence of BLB | 1. Weed management in paddy-Pre-emergence weedicide Londax power (Bensulfuron methyl+ pretilachlor) @ 10kg/ha 0-5 DAT | 35 q/ha,<br><br>Rs 17,000./ha | 2. Post – emergence weedicide Bispyribic sodium200ml /ha followed by one hand weeding | 37q/ha<br><br>Rs.19,000/ha | 3.Cultivation of short duration rice Var-Sahabhagi<br>4.STBF<br>5. spraying of Plantomycin @ 1gm/l of water or Streptocycline (2gm/10lit) + copperoxychloride (1gm)/l of water. | 40 q/ha<br><br>Rs. 20,000/ha |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Green gram-4.5q/ha Rs.12000 | • High seed rate<br>• Farmers do not apply fertilizer and bio fertilizer<br>• YMV infestation | 1. Demonstration on Green gram (var. IPM 02-3)<br>2. Seed inoculation with rhizobium& PSB @ 20 gm/kg of seed<br>3. Seed sowing behind the plough | 5.2 q/ha<br><br>(Rs.15000) | Demonstration on Management of YMV<br>4. Installation of yellow sticky trap<br>5. Spyaring of Imadichloroprid 5ml@15lit of water | 5.8q/ha<br><br>(Rs.18,000) | 6. Demonstration on on Green gram (IPM 02-14)<br>7. STBF | 6.0q/ha<br><br>(Rs.20000) |
| Rainfed (Low land) | Rice- Green gram<br><br>Rice: 30q/ha Rs. 16,000 | • Heavy weed incidence<br>• Incidence of sheath blight disease in paddy<br>• Micronutrient deficiency<br>• Blanket fertilizer | Demonstration effect of Herbicide in paddy<br>1.Pendimethalin (38.7% SC) @ 750gm/ha/ Bispyribic Na 200ml/ha at 0-3 DAT | 35 q/ha<br><br>Rs. 19,000 | 2. Deep summer ploughing<br>3. Application of Validamycin @ 1lit/ha for control against sheath blight | 36.0 q/ha<br><br>Rs.20,000 | 4. Foliar application of application of zinc @2.5gm/lit of water<br>5.STBF | 38.0 q/ha<br><br>Rs.22,000 |
| | Rabi Green gram (residual moisture) | ▪ Blanket fertilization and seed inoculation | 1. Seed inoculation with rhizobium& | 5.5 q/ha (Rs.14000) | 3. Spraying of Copper oxychloride 1gm/lit of | 5.9q/ha Rs.16,000 | 4. Application of Sulphur 3gm/lit of water to | 6.2q/ha Rs.18,000 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 4.2 q/ha<br>Rs. 10,500 | is not followed<br>▪ Incidence of leaf spot & Powderly mildew<br>▪ Lack crop management practices | PSB @ 20 gm/kg of seed before sowing<br>2. STBF | | water to control leaf spot. | | control Powdery mildew.<br>5. Planofix hormone 250ml/ha before flowering for better pod development. | |
| Allied activities | Goatery (20 Goats)<br>Rs 8000/- | • High endoparasitic infestation<br>• High morbidity and mortality rate of kids with lower birth weight<br>• No use of supplementary feeding | 1. Control of endoparasitic infestation in small ruminants 15 gm of mineral mixture/goat for 2-3 months.<br>2. Antherimetics @5-7.5mg/kg body weight in 2 doses per month- Quarterly deworming per year<br>3. Liver | Rs 14000/- per annum | 4. Supplementary feeding (Concentrate feeding @ 200gm/day/ doe 1month before kidding and 1 month after kidding. | Rs 16,500/- per annum | 5. Supplementary feeding (Concentrate feeding @ 200gm/day /doe 1month before kidding and 1 month after kidding. | Rs 18500/- per annum |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | tonic@0.25-0.5ml/goat for 5-7 days along with 50gm of concentrate feed for 3 months | | | | | |
| | Poultry birds- (Rs. 3,000) | • Low income from poultry due to rearing of local bird | -- | Rs.3000/- | 1. Backyard poultry 10nos (Vanaraja) with proper vaccination (Lassota+ Gumber)<br>2. Supplementary feeding with azolla | Net Income- Rs. 5000/- | 3. Backyard poultry 20 nos (palishree) with proper vaccination (Lassota+ Gumber)<br>4. Supplementary feeding with azolla<br>5. Calcium supplementation to birds | Net Income- Rs.8000/- |
| Total (Rs.) | 74500 | | 94000 (26.1%) | | 114500 (53.6%) | | 129500 (73.8) | |

*** Increase in net income over base year 2015-16**

| MODULE-IV Doubling Farmers Income by Technological Interventions<br>Operational Village- Temri GP-Temri Block-Golamunda District- Kalahandi<br>Farming Situation- Irrigated Agro Eco-system | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Farming situation | Existing practices 2015-16 | | 1st year (2016-17) | | 2nd year (2017-18) | | 3rd year (2018-19) | |
| | Component | Problems/ practices | Intervention | Yield & Net income/ha | Intervention | Expected Yield & net Income/ha | Intervention | Expected Yield & Income/ha |
| Irrigated (Up land | Black gram-Ground nut 4q/ha (Rs.17,000) | • Local cultivar<br>• Blanket fertilizer application<br>• Weed problem<br>• YMV incidence<br>• | 1. Demonstration of HVY PU-31<br>2. STBF | 5.8q/ha (Rs.25,000) | 3. Application of Imazythapyr@ 750ml/ha for weed control. | 6.2q/ha (Rs.28,000) | 4.Seed treatment with Thiomethoxam5 gm/kg of seed<br>5. Spraying of Imidachloroprid 10ml/15lit of Water<br>6.Instalation of Yellow sticky trap@20/ha | 6.7q/ha (Rs.30,000) |
| | Ground nut 8q/ha (Rs.25,000) | • Local cultivar<br>• High weed incidence<br>• Micronutrient deficiency<br>• Eearly leaf | 1. Demonstration on Cluster FLD on Ground nut (ICGV 91114) | 11q/ha (Rs30,000) | 3.Application of Imazythapyr@ 750ml/ha<br>4. Foliar application of Boron @1kg/ha at | 12.5q/ha (Rs34,000) | 5. To control early leaf spot spraying of Tebuconazol 25.9% EC @ 1ml/lit<br>6. spraying of Imidacloprid | 15qha (Rs.40,000) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | spot and bud necrosis | 2. STBF | | pre-flowering stage | | 17.8% S.L. @ 2ml/5 liter of water or Acetamiprid 20% S.P. @ 0.5 gm/liter of water | |
| Irrigated (Medium land) | Paddy-Vegetables 30q/ha (Rs.12000) | • use of imbalanced fertilizer<br>• high rate of insect pest infestation (BPH& Stem Borer) | 1.Use of Green manuring in Paddy (Dhannicha20kg/ha)<br>2. STBF | 33q/ha (Rs.15000) | 3. Spraying of buprofezin 25 SL @500 ml/ha or thiomethoxam 25 WG @ 100 g/ha for control against BPH<br>4. Split application of N-fertilizer | 36q/ha (Rs.18000) | 5 .Early planting and grow Stem borer resistance Variety<br>6 .Cartaphydrochloride 4% @ 1.25 kg/ 10 decimal in nursery field<br>7. Spraying of neem oil 1.0% @ 2.5 ml/lt of water<br>8. Installation of Pheromone trap@12/ha | 39q/ha (Rs.20000) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Vegetables (Tomato, Cabbage & Cauliflower) Rs. 70,000** | • **Use of low quality planting material**<br>• **Fruit borer and leaf curl in tomato**<br>• **DBM in Cauliflower and leaf webber in Cabbage.** | | | 1. **Sowing of Hybrid qualitative planting material**<br>2. **Spraying of *Virex-H @1.5 ml/litter of water t*hrice at 7 days interval for managemen t of whitefly vector**<br>3. **spraying of spinisod0.4 ml/lit to control fruit borer in Tomato.** | **210q/ha Rs.75,000** | 4. **Application of Molybdate2g m/lit of water to control whiptail and Dichlorovous 3ml/lit of water to control against DBM**<br>5. **Foliar spraying of prophenopho use2ml/lit of water** | **170q/ha Rs85,000** |
| **Irrigate(L ow land) Rice/Rice** | **Rice- Rice**<br><br>**Rice: 29q/ha Rs. 16000** | **Overdose of N-fertilizer application High cost due to manual weeding SB, GM, SB , BPH & WBPH incidence Blast and** | **--** | **--** | 1. **HYV BINA-1**<br>2. **Green manuaring with dhanicha @ 25kg/ha**<br>3. **Herbicde pendimethlin (38.7% SC) @ 750gm/ha/** | **35.0 q/ha**<br><br>**Rs.23,000** | 4. **Cartaphy drochloride 10 g @ 10 kh/ha/ Flonicamid @ 500 ml/ha**<br>5. **Skip row method of planting**<br>6. **Prochloraz** | **42.0 q/ha**<br><br>**Rs.30,600** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | sheath blight | | | Bispyribic Na 25 gm.ha at 0-3 DAT | | 26.25% + Tricyclazole 22.5% SE @ 1000 ml/ha for blast management in paddy<br>7. Line sowing with transplanter | |
| Allied activities<br><br>Home Stead | Poultry birds-(Rs. 4,000) | • Low income from poultry due to rearing of local bird | | | 1. Backyard poultry 20nos (Vanaraja) with proper vaccination (Lassota+ Gumber)<br>2. Supplementary feeding with azolla | Net Income-Rs. 8000/- | 3. Backyard poultry 30 nos (palishree) with proper vaccination (Lassota+ Gumber)<br>4. Supplementary feeding with azolla<br>5. Calcium supplementation to birds | Net Income-Rs.12000/- |
| | Mushroom cultivation | • Not cultivating mushroom<br>• New intervention | | | 1. Mushroom production of OSM-11 (40 beds/month) and Blue Oyster | Net Income 32kg PSM@100 60kg OM@60 (Rs. 8000/-yr) | 2. Mushroom production of OSM-11 (50 beds/month)and Blue | Net Income 40kg PSM@100 75kg OM@60 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | **mushroom cultivation40bags/day** | | **Oyster mushroom cultivation(50 beds/month)**<br>**3. Management of competitor moulds and diseases in straw mushroom** | **(Rs. 10000/-yr)** |
| **Total (Rs.)** | **144000** | | **--** | **--** | **194000 (34%)** | | **227600 (58%)** | |

| MODULE-V Doubling Farmers Income by Technological Interventions<br>Operational Village- Dahal, GP- Kandel , Block- Narla Dist- Kalahandi<br>Farming Situation- Rainfed Agro Eco-system | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Farming situation | Existing practices 2015-16 | | 1st year (2016-17) | | 2nd year (2017-18) | | 3rd year (2018-19) | |
| | Component | Problems/ practices | Intervention | Yield & Net income/ha | Intervention | Expected Yield & net Income/ha | Intervention | Expected Yield & Income/ha |
| Rainfed (Up land) | Cotton-Fallow 8 q/ha (Rs. 18,000) | ▪ High incidence of sucking pest and bollworm.<br>▪ Rampant use of fertilizer & indiscriminate use of plant chemicals | 5. Demonstration of IPM practices<br>1. Growing castor and marigold as trap crop<br>2. Sowing of imidacloprid treated seed (5 g/kg of seed)<br>3. Installation pheromone traps 20no/ha | 12q Rs.22,000 | 6. Demonstration of IPM practices<br>4. Application of HaNPV @ 500LE/ha. & handpicking of harmful larvae<br>5. Neem pesticide for management of sucking pests and bollworm at early vegetative stage @ 2 ltr/ha | 13.5q Rs.25,000 | 7. Plough deeply to expose resting pupae.<br>8. Avoid excess use of nitrogen fertilizers at the reproductive.<br>9. Use 5% neem seed kernel extract (NSKE) at 45 DAS.<br>10. Topping cotton twigs at 90days after sowing. | 15q/ha (Rs. 28,000) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 6. Set up bird perches @20 nos/ha | | 11.Application Indoxacarb 14.5 SC @ 250 ml/ha | |
| Rainfed (Medium land) | Rice-Green gram Paddy(MTU 1001) 28 q/ha (Rs.13000) | • High weed incidence<br>• Imbalance dose of fertilizer<br>• application Low yield due terminal drought<br>• Incidence of BLB | 1. Weed management in paddy-Pre-emergence weedicide Londax power (Bensulfuron methyl+ pretilachlor) @ 10kg/ha 0-5 DAT | 35 q/ha,<br>Rs 17,000./ha | 2. Post – emergence weedicide Bispyribic sodium200ml/ ha followed by one hand weeding | 37q/ha<br>Rs.19,000/ha | 3.Cultivation of short duration rice Var-Sahabhagi<br>4.STBF<br>5. spraying of Plantomycin @ 1gm/l of water or Streptocycline (2gm/10lit) + copperoxychloride (1gm)/l of water. | 40 q/ha<br>Rs. 20,000/ha |
| | Green gram-4.0q/ha Rs.10000 | • High seed rate<br>• Farmers do not apply fertilizer and bio | 1. Demonstration on Green gram (var. IPM 02-3)<br>2. Seed inoculation with | 5.8 q/ha<br>(Rs.16000) | 4. Demonstration on Management of YMV<br>5. Installation of yellow | 6.0q/ha<br>(Rs.18,000) | 7. Demonstration on Green gram (IPM 02-14)<br>8. STBF | 6.2q/ha<br>(Rs.22000) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | fertilizer<br>• YMV infestation | rhizobium& PSB @ 20 gm/kg of seed<br>3. Seed sowing behind the plough | | sticky trap<br>6. Spyaring of Imadichloropri d 5ml@15lit of water | | | |
| Rainfed (Low land) | Rice- Green gram<br><br>Rice: 30q/ha<br>Rs. 16,000 | ▪ Heavy weed incidence<br>▪ Incidence of sheath blight disease in paddy<br>▪ Micronutrien t deficiency<br>▪ Blanket fertilizer | Demonstration effect of Herbicide in paddy<br>1. Pendimeth alin (38.7% SC) @ 750gm/ha/ Bispyribic Na 200ml/ha at 0-3 DAT | 35 q/ha<br><br>Rs. 19,000 | 2 .Application of Validamycin @ 1lit/ha for control against sheath blight | 36.0 q/ha<br><br>Rs.20,000 | 3 .Foliar application of application of zinc @2.5gm/lit of water<br>4. SFTB | 38.0 q/ha<br><br>Rs.22,000 |
| | Rabi Green gram (residual moisture)<br>3.8 q/ha<br>Rs. 8,000 | ▪ Blanket fertilization and seed inoculation is not followed<br>▪ Incidence of leaf spot & Powderly mildew<br>▪ Lack crop managemen | 1. Seed inoculation with rhizobium& PSB @ 20 gm/kg of seed before sowing<br>2. STBF | 5.5 q/ha (Rs.14000) | 3. Spraying of Copper oxychloride 1gm/lit of water to control leaf spot. | 5.9q/ha Rs.16,000 | 4. Applicatio n of Sulphur 3gm/lit of water to control Powdery mildew.<br>5. Planofix hormone 250ml/ha before flowering for better pod | 6.2q/ha Rs.18,000 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | t practices | | | | | development. | |
| Allied activities | Goatery (20 Goats) Rs 8975/- | • High endoparasitic infestation, high morbidity and mortality rate of kids with lower birth weight<br>• ii) No use of supplementary feeding | Control of endoparasitic infestation in small ruminants 15 gm of mineral mixture/goat for 2-3 months. Antherimetics @5-7.5mg/kg body weight in 2 doses per month-Quarterly deworming per year Liver tonic@0.25-0.5ml/goat for 5-7 days along with 50gm of concentrate feed for 3 months | Rs 14,175/- per annum | 4. Supplementary feeding (Concentrate feeding @ 200gm/day/doe 1month before kidding and 1 month after kidding. | Rs 16,855/- per annum | 5. Supplementary feeding (Concentrate feeding @ 200gm/day/doe 1month before kidding and 1 month after kidding. | Rs 18500/- per annum |
| | Mushroom cultivation | • Not cultivating mushroom<br>• New intervention | 1. Mushroom production of Paddy straw mushroom (20 beds) and Oyster mushroom(20 bags) | Net Income 16kg PSM@100 30kg OM@60 (Rs. 3400/-yr) | 2. Mushroom production of OSM-11 (25 beds/month) and Blue Oyster mushroom cultivation40ba | Net Income 20kg PSM@100 37kg OM@60 (Rs. 4420/-yr) | 3. Mushroom production of OSM-11 (35 beds/month)and Blue Oyster mushroom | Net Income 28kg PSM@100 50kg OM@60 (Rs. 5800/-yr) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | gs/day | | cultivation(35 beds/month)<br>4. Management of competitor moulds and diseases in straw mushroom | |
| **Total (Rs.)** | **74000** | | **93500 (28.7)** | | **108420 (46.5%)** | | **128800 (74.05%)** | |