

Integrated Farming System as a profitable enterprise

Shri. Udit Bhabu Singh hailing from tiny Banamali Prasad village of Sadar Block of Dhenkanal District is an IT professional. He was working in Singapore since last 10 years before quitting his job and opting to take agricultural farming as a new career. He chose to use his ancestral properties in Dhenkanal, Odisha to start his entrepreneurship in agriculture and horticulture as an integrated farming model. His traditional farming was included only cashew with a small dairy unit. After coming back to India, he visited KVK Dhenkanal and discussed about his projects with scientists of KVK Dhenkanal and prepared a plan in developing his 9 acres of barren land into a successful integrated farm. The technical support from KVK Dhenkanal helped him to shore up and integrate his farming through introduction of improved varieties / hybrids of horticulture crops, upgrading dairy unit, azolla as cattle feed, vermicompost, poultry, fodder bank, TC banana and TC pomegranate with drip irrigation through farm mechanisation at his level. The most crucial intervention is the introduction of pineapple (*var. MD2*) as inter crop in existing cashew orchard followed by cultivation of vegetable crops viz., pole beans, cucumber, tomato, bitter guard and brinjal, black gram etc. as intercrop in 5 acre older Cashew orchard by rejuvenating the older plants and adding new V4 varieties of cashew plants as a high density plantation. The rest of the lands were extended with 2-3 acres of TC banana and TC pomegranate, 1 acre of papaya (*var. Pusa Nanha*) under micro irrigation system. Shri. Singh has successfully incorporated the enterprises in such a way that it enhanced productivity and profitability in relation to the farming system model. Earlier, the only source of income for Shri Singh was from the one acre cashew fetching him a net income of Rs.1,50,000/- only and Rs. 30,000/- from dairy unit. Now, he is earning a net annual income of 9-10 lakh from selling of different vegetables, pineapple, cashew, pomegranate, banana, poultry, dairy etc.

Shri U. B. Singh has developed his farm with a combination of horti-vermi-poultry-pasture cultivation. In the days to come this would become a major source of income for this model stake holder. To feed his small dairy unit (one Jersey & one Gir cow), he has established a fodder bank comprising Co-3, Co-4, and azolla with the support of KVK Dhenkanal. He has also planted Glyricidia all along the borders of his farm. The combination of azolla and the feed mixture has reduced his feed cost by Rs.150/- per day. As a water conservation practice, he has adopted micro sprinkler irrigation system in the cashew orchard, vegetable fields, banana cultivation and pomegranate orchard. To reduce drudgery, the farmer has opted for mechanisation to suit his farming and his practices. To recycle wastes, he has purchased a chaff cutter, a cycle weeder etc. to reduce the cost of labour. He recycles farm waste into a healthy manure through vermicompost unit. His practice of integrated farming meets over 75% of nutrient requirement through recycling of bio-mass available within the farm itself. He has initiated decomposing the farm waste using waste decomposer from National Centre of Organic Farming through the advice of KVK Dhenkanal which will help him in converting his farm practices from chemical farming into organic farming. He had cultivated black gram as intercrop in cashew orchard and incorporated the bio-mass as green manure into the crops. The average production from his farming per year is 2-3 tonnes of cashew nuts, 3.0 ton of vermicompost, 5 tonnes of cow dung, 10 tonnes of fodder grass and vegetables worth Rs. 3,40,000/-. At present, he is an employer of 15 people and is a role model of farmers across the state.



Pond based integrated farming systems with innovative technologies enhanced farmers' income

Shri Nibaran Roy, 53 years old, is an energetic and informative farmer residing at Char Chura Bhandar, Ranihat More near Jaldhaka Bridge under Maynaguri block in Jalpaiguri district. He had 3.3 acres of land with a cultivated pond. The main entrance road of his house was beautified with arecanut plantation. He, along with his family members, was engaged in agricultural production for last 26 years. He practiced farming of rice, jute, arecanut and vegetables (potato, cabbage, cauliflower) and pisciculture. But, total income from the land was not as per his expectation. Then, he came in contact with the Scientists of Jalpaiguri KVK. The KVK personnel advised him to implement other innovative technologies in his land to enhance annual income. Accordingly, KVK Jalpaiguri gave training to Shri Roy. Gradually, pond based integrated farming systems were introduced in his farm. To get early market, he started cucurbitaceous vegetable cultivation in dyke areas or trellis. Trellis was properly utilized round the year by vegetable based cropping systems with special emphasis on cucurbitaceous vegetables like bottle gourd, snake gourd, bitter gourd, cucumber and dolichos beans. He collected water hyacinth every year from nearby areas for compost making. His family members were also interested to intensify their farming through introducing cattle and goat rearing and they did that. Thus, he increased the cultivable area in his farm. As a result, he got a substantial increase of profit from his same area of land adopting those innovative technologies. The comparative economic feasibility of before and after adoption of technologies has been given in the table.

Income before adoption

<i>Enterprises</i>	<i>Area / No.</i>	<i>Cost of production* (in Rs.)</i>	<i>Return (in Rs.)</i>	<i>Net income (in Rs.)</i>
Crop-Rice	2.2 acre	20700	49500	28800
Crop-Jute	1.5 acre	9500	23750	14250
Crop-Areca nut	35 plants	1250	4800	3550
Crop-Vegetables (potato, cabbage, cauliflower)	0.5 acre	12500	32700	20200
Fish (Pond)	0.4 acre	12,800	37,500	24,700
Total		56750	148250	91500

** Includes cost of input, labour and others including marketing and transport of the products*



Income after adoption

<i>Enterprises</i>	<i>Area / No.</i>	<i>Cost of production* (in Rs.)</i>	<i>Return (in Rs.)</i>	<i>Net income (in Rs.)</i>
Crop-Rice	1.7 acre	16000	38000	22000
Crop-Jute	1.2 acre	7500	19000	11500
Crop-Cucurbitaceous vegetables (cucumber, bitter gourd, bottle gourd, beans etc. on trellis)	0.8 acre	85000	195000	110000
Crop-Arecanut	65 plants	2750	11000	8250
Livestock-Cow	03 nos.	36500	52500	16000
Livestock-Goat	06 nos.	4500	13500	9000
Fish (Pond)	0.6 acre	16200	43200	27000
<i>Total</i>		<i>168450</i>	<i>372200</i>	<i>203750</i>

** Includes cost of input, labour and others including marketing and transport of the products*