Integrated Farming

Improving livelihood through adopting integrated farming system

Name : Sri Ajeet Kumar
Address : Village - Surang, Panchayat - Balia, Block - Kochadhaman, Dist - Kishanganj, Bihar

Sri Ajeet Kumar completed his Intermediate education in 2001. His father is a traditional farmer as well as social worker, but, his economic condition was too poor to run his family. After study, Sri Ajeet Kumar wanted to improve the economic and social status of his family and motivated to adopt agriculture as main stay of livelihood. He came in contact with the scientist of KVK, Kishanganj and thought to utilize locally available resources in a particular agro-ecological situation in a very scientific manner to increase the farm productivity of resources. He hired 40 acres of land on lease for Rs-1.75 lakh for cultivation of makhana-cum-fish culture. The KVK, Kishanganj guided him for IFS model involving fisheries, goatery, poultry, plantation and vegetable production with makhana cultivation.

He obtained training from the KVK and other places on fisheries and poultries, makhana production, jute and vegetable production beside integrated crop management. Under the umbrella of technical guidance of KVK, KishanganjMr. Kumar established a fish pond of one acre land, poultry farm with 1200 birds, teak plantation with 400 plants and papaya nursery with Pusa dwarf varieties, backyard poultry farming with 100 Vanaraja and Gramapriya breeds, pigeon farming with 40 birds and goat farming with 8 Black Bengal breeds.

Sri Ajeet Kumar earns approximately 6 lakhs annually through the IFS model, makhana-cum-fish culture and other enterprises in his farm. Mr.Ajeet Kumar is a member of "MatasyaJeeviSahyogSamiti" and continuously engaged in motivating other farmers for adopting new technologies in agriculture and allied sectors.

Now, he has become a role model and motivating other farmers in the district. In future, he wants to establish hatchery production unit and makhana processing unit. Today, he is living with sufficient wealth and social respect.

Action photograph of Sri Ajeet Kumar

Integrated farming made agribusiness a profitable venture

Name : Md. Kalimuddin
Address :Village- Nehuta, Post- Rajoi, District- Aurangabad, Bihar

Md. Kalimuddin was associated with KVK Aurangabad since 2009. After passing intermediate school, he was struggling a lot to establish his existence in spite of having sufficient land. From KVK Aurangabad he got several trainings and perceived technical knowhow particularly sowing of crop with the help of zero tillage and use of sprinkler in crop. Similarly, he was experienced the overwhelming results of drip irrigation in horticultural and forestry crops. In addition, he also concentrated proper utilization of crop wastes to reuse for animals and animal wastes to reuse for agricultural production. For organic production, with the guidance of scientist of KrishiVigyan Kendra Scientists, he started vermicomposting at his farm. He is selling all crops and horticulture produce along with vermi-compost, fish and milk. Now, with the help of these units, he is earning more than 20 lakhs per annum and also became role model for other neighbouring farmers in the district.

Economics of farming

Enterprise	*Area (acre)/No.*	*Cost of production in lakh*	*Return in lakh*	*Net income in lakh*
Paddy/Wheat	82	8.25	14.75	6.5
Vermi-compost	200 unit	3.50	12.50	9.0
Horticulture	3.00	0.90	02.85	1.9
Animal Husbandry	10 Cow	1.00	03.00	2.0
Fishery	1	0.50	03.00	2.5

Fish based integrated farming system

Name : Mrs. Poonam Singh
Address : Village-Yari, Aurangabad, District- Aurangabad, Bihar

Smt. Poonam Singh, 34 years old resident of Yari village of Aurangabad district, took a keen interest in adopting the new technologies of Krishi Vigyan Kendra after regular persuasion in different training programmes organized in the district since 2009. She had 19 ha cultivated land which was dependant on rain. From all available resources, she could earn a net return of only Rs. 75,000/- to 95000/- in one year. But, after getting motivation from scientists of Krishi Vigyan Kendra Aurangabad she adopted integrated farming systems and used latest agricultural technologies with latest variety of paddy, wheat, mango and guava fruits. She also started fish production and backyard poultry farming. Now, Mrs. Poonam Singh has become an innovator for other farmers in the district. In many fragile environment, where men are migrating in search of employment she is growing interest in women knowledge, skills and capabilities apart from working towards achieving women employments.

Economics of farming

Crop/Livestock/Fish /Enterprise	*Area (ha)*	*Cost of production (Rs.)*	*Return (Rs.)*	*Net income (Rs.)*
Paddy	15	450000	787000	337000
Wheat	15	390000	588000	198000
Guava	7	40000	150000	110000
Pond	0.3	50000	200000	150000

Mrs. Poonam Singh in her farmstead

Integrated farming system improved livelihood

Name of Farmer : Sri. Adhir Chandra Mahato
Address : Vill+P.O.-Kaluhar, Block-Para, Dist- Purulia, West Bengal

Sri Adhir Chandra Mahato, an energetic and innovative small farmer, is being associated with agriculture for last 18 years. For the first time, he came in contact with KVK Purulia in the year 1995 during vocational training at the KVK. Since then, he is managing orchard (mango, guava and citrus), producing vegetables (summer, kharif and winter seasons), producing paddy, rearing livestock viz. Black Bengal goat, Rhode Island Red Poultry birds and culturing fishes mainly Indian Major Carps. Initially, he only used to grow paddy and vegetable. Then, he included mango, guava and citrus fruit plants, poultry and goats. The goats were reared at his farm under stall fed system and poultry under semi-intensive system. He used to grow turmeric crop in the inter space of orchard. Off-season vegetables production was the main prerogative for him to fetch good market price. He was the recipient of several prizes in the local KrishiMelas during vegetables show. By adopting those combinations of farming his annual income had touched Rs. 190000 from Rs. 30500 which he used to earn from traditional cultivation at the beginning.




Economics of farming

Crop / Livestock / Fish / Enterprise	*Area (acre) / No.*	*Cost of prodn* (Rs. / unit)*	*Return (Rs. / unit)*	*Net income (Rs. / unit)*
1. Orchard: Mango (Amrapalli), Guava (L-49), Acid Lime (Madrasi)	0.50	5000	70000	65000
2. Winter Vegetables: Cabbage (F1, Cauliflower (Madhuri), Tomato (F1)	0.55	8000	30000	22000
3. Summer Vegetables: Onion (Nasik Red), Bottle Gourd (F1 Hybrid), Bitter Gourd (F1)	0.25	2000	7000	5000

Crop/ Livestock/ Fish/ Enterprise	*Area (acre)/ No.*	*Cost of prodn* (Rs./unit)*	*Return (Rs./unit)*	*Net income (Rs./unit)*
4. Kharif Vegetables: Bhindi (F1), Baby corn (HM-4), Bottle Gourd (F1)	0.55	4000	20000	16000
5. Paddy (MTU-7029)	0.36	3000	7000	4000
6. Goatery (Black Bengal)	22 No.	5000	25000	20000
7. Poultry (Rhode Island Red)	200 No.	30000	80000	50000
8. Fishery (Indian Common Carp)	0.30	2000	10000	8000
Total		**59000**	**249000**	**190000**

Income level before adopting such farming

Crop/ Livestock/ Fish/ Enterprise	*Area (acre) / No.*	*Cost of prodn, *(Rs./unit)*	*Return (Rs./unit)*	*Net income (Rs./unit)*
1. Winter Vegs: Cabbage (F1), Cauliflower (OP Vars.), Tomato (F1)	0.55	7000	20000	13000
2. Summer Vegs: Onion (Nasik Red), Bottle Gourd (OP Vars.), Bitter Gourd (OP Vars.)	0.25	2000	5000	3000
3. KharifVegs.: Bhindi (OP Vars.), Corn (Composite), Bottle Gourd (OP Vars.)	0.55	3000	12000	9000
4. Paddy (Local)	0.70	6000	10000	4000
5. Bengal Gram (Local)	0.30	500	2000	1500
Total		**18500**	**49000**	**30500**

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

Livestock based integrated farming system

Name : Sri. Premananda Chakraborty
Address : Village- Jashpur, P.O.- Muradih, Block- Santuri, District- Purulia, West Bengal

Sri Premananda Chakraborty was always interested to adopt modern agricultural technologies using farm intensification in the drought prone backward village of Purulia. Since last 7 years Mr. Chakraborty was associated with KVK Purulia through his village Farm Science Club. He is producing field crops (paddy and mustard), vegetables (summer, rainy and winter season), tissue culture banana, rearing poultry birds (Rhode Island Red) and rearing ducks (Khaki Campbell). Initially, he used to grow paddy and vegetables under traditional methods using local variety seeds. Now, he is using high yielding variety (HYV) seeds and modern agriculture technologies for cultivation of crops and rearing of livestock species. Poly mulching of banana, low cost storage method of onion etc. are also the area of his interest to fetch better price in August- September months. Ducks and poultry birds are also being reared very scientific way at his farm. By doing so, he has been benefitted immensely which is reflected from his present annual income of Rs. 209000/- from integrated farming as compared to Rs. 95000/- from earlier traditional cultivation.

Economics of farming

Crop/ Livestock/ Fish/ Enterprise	*Area (acre)/ No.*	*Cost of prodn* (Rs./unit)*	*Return (Rs./unit)*	*Net income (Rs./unit)*
1. Mustard (Shibani)	1.00	5000	20000	15000
2. Winter Vegetables: Cabbage (F1), Cauliflower (Madhuri), Tomato(F1) Capsicum (California Wonder)	1.00	30000	70000	40000
3. Summer Vegetables: Onion (Nasik Red),	0.50	15000	50000	35000

Crop/ Livestock/ Fish/ Enterprise	*Area (acre)/ No.*	*Cost of prodn* (Rs./unit)*	*Return (Rs./unit)*	*Net income (Rs./unit)*
Bottle Gourd (F1), Bitter Gourd (F1), Pumpkin (F1)				
4. Kharif Vegetables: Brinjal (F1), Bhindi (F1), Baby corn (HM-4), Bottle Gourd (F1), Pumpkin (F1)	1.00	20000	60000	40000
5. Paddy (MTU-7029)	1.50	17000	32000	15000
6. Duckery (Khaki Campbell)	70 No.	35000	72000	37000
7. Poultry (Rhode Island Red)	60 No.	30000	57000	27000
1. Mushroom	20 Nos	900	3000	2100
Total		**152900**	**361000**	**211100**

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

Income level before adopting such farming

Crop/ Livestock/ Fish/ Enterprise	*Area (ac.)/ No.*	*Cost of prodn*(Rs./unit)*	*Return (Rs./unit)*	*Net income (Rs./unit)*
1. Winter Vegs: Cabbage (F1 Hybrid), Cauliflower (OP),Tomato (F1)	1.00	20000	50000	30000
2. Summer Vegs: Onion (Nasik Red), Bottle Gourd (OP), Bitter Gourd (OP)	0.50	10000	40,000	30000
3. KharifVegs.: Brinjal (OP),Bhindi (OP),Maize (Composite), Bottle Gourd (OP)	1.00	15000	40000	25000
4. Paddy (Local)	1.50	12000	18000	6000
Total		**57000**	**148000**	**91000**

Triumphing with integrated farming system

Name : Shri SamsaiOram
Address : Village- Belagarha, Block- Ghagra, District- Gumla, Jharkhand

Considering the physical, social and economic limitation of the district, a small integrated farming system model was developed in the field of Shri SamsaiOraon (Tribal Farmer) in Belagarha village of Ghaghra block during 2010-11 to 2013-14. The model spread over two ha area in the vicinity of tribal settlement and was integrated with six components. The critical input assistance was provided under NICRA. Technological intervention was made through 03 piglets (cross breed T x D), fifty thousand fingerlings for fish production, high yielding paddy variety (Lalat), maize (Suwan-1), plantation of sixty mango fruit plant, vegetable seed crop pumpkin (Var. MPH-1) , one vermicompost unit for waste recycle and renovation of well. The capacity building programme and technological backstopping was provided.

Mr. SamsaiOraon successfully harvested more paddy (yield- 38.5 q/ha) after intervention as compared to 26.0 q/ha paddy yield before intervention. Maize cultivar Suwan-1 provided 40 q/ha as compared to local cultivar yield 27 q/ha. The vegetable yield increased considerably after intervention which gave 0.18 lakh net return from pumpkin cultivation. In second year, the number of piglets increased to 15 including with 3 pigs. He adopted composite fish production in 1.25 acre of pond. Before intervention Mr. Oraon has a defunct bari well, no proper care and maintenance was made by him for maintaining the proper water level i.e. 6 to 8 feet water. Renovation was done under input assistance. After renovation the water level is being maintained and effective use of water is also being made.

Now, he has become a role model not only for the villagers of Belagarha but also for entire Ghaghra block of Gumla district. Ten farmers of the nearby villages motivated by his success and try to adopt this IFS model. Line department officials including of bankers and other stakeholders has visited his site and appreciated the IFS model.

Enhancing income through integrated farming

Name : Sri. Chhabindra Prasad
Address : Village- Turibar, P.O.-Partanga, District- Hazaribag, Jharkhand

Sri Chhabindra Prasad was earning from the source of agricultural farming. He used to grow paddy as a main crop followed by potato and winter vegetables. As animal resource, he had only a pair of bullock for ploughing and four local goats. He always dreamed for more earning from his farming. Being a young farmer he used to participate in KisanMela&KrishiPradarshni at block level. In the year 2003, he participated in the Churchu Block KrishiMelaSahPradarshni held on 25th December. He came in contact with Holy Cross KrishiVigyan Kendra, Hazaribagh for learning latest advances in modern agriculture. The KVK Horticulturist visited his village farm. He started scientific and commercial farming under the able guidance of KVK scientists. The nearest Jhumra weekly market, where the traders from Dhanbad and Assansol were frequent visitors, recognised him and his produces were sold smoothly. In 2004, he cultivated rainy season tomato (hybrid F_1) in 0.75 acre of land and earned a gross income of Rs. 70, 000/-. That encouraged him to grow potato in the ensuing rabi season and earned Rs. 40, 000/- from half an acre. Sri Prasad was advised by KVK scientist to grow rainy season onion (*cv. Agrifound Dark Red*). He received training in nursery bed preparation seedling raising. In 2007, he achieved good success in rainy season onion and earned Rs. 60, 000/- from 0.8 acre land. Seeing his successful cultivation and the returns, the neighbouring farmers from his own and other surrounding villages adopted the crop. As a result, the villages around Jhumra market became the major kharif onion producer in the district. The National Horticultural Research & Development Foundation (NHRDF), Patna centre organised a Field Day and Farmers' Day at village Turibar (Block- Daru) to promote the cultivation of rainy season onion in collaboration with Holy Cross KrishiVigyan Kendra. Mr.Chhabindra Prasad has full trust on the technologies introduced by Holy Cross KrishiVigyan Kendra, Hazaribag. Last year he got the latest technology for growing broccoli from KVK and he not only successfully cultivated the crop but also marketed the produce at profitable rate (Rs.25/- per piece of broccoli weighing 400 g each). Sri. Chhabindra Prasad uses to grow sugarcane every year in an acre of land and prepares "Gur" (Jaggery) for sale. Since last five years he started goatery with Beetal and Black Bengal breed in a planned and scientific way which is also running in profit. Every year he is earning Rs. 30, 000/ from the unit. The 0.7 acre pond gives him an income of Rs. 25,000/- from sale of fishes besides

providing irrigation water to summer cucurbits. As a whole, his annual income from integration of all his enterprises ranges between Rs. 3 to 3.5 lakhs.

Mr. Prasad won several prizes in agricultural exhibitions held at Block & District level and also received appreciation certificates from seed companies. He is a source of inspiration for many agricultural farmers in the district.

Economics of farming

Impact factor	*Before adoption*	*After adoption*
Crop / Agricultural Practice (acre)		
Paddy	2	3
Sugarcane	0.5	1.0
Potato	0.5	0.8
Tomato	0.2	0.5
Elephant foot yam	-	0.5
Kharif Onion	-	0.5
Other vegetables	0.5	1.0
Yield of crop / product Yield (q/ha)		
Paddy	62.5	80.0
Sugarcane	300	400
Potato	150	220
Tomato	200	350
Elephant foot yam	-	600
Kharif Onion	-	240
Other vegetables	180	250
Economics (Rs.)		
Sale Value	2 30 000	5 25000
Input Cost	45 000	65 000
Labour Cost	65 000	120000
Any Other Cost	15 000	25 000
Net Saving / Net Profit	1 05 000	3 15 000




Orchard based integrated farming enhanced farm income

Name : Sri Manish Kumar Singh
Address :Village - Bindwara, Post - Munger, District - Munger, Bihar

Sri Manish Kumar Singh is an L.L.B and B. A (History) graduate. He is also associated with KrishiVigyan Kendra Munger since 2013 and took several trainings from KVK Munger on Vermi composting and Mushroom cultivation. Under the technical guidance and marketing for mushroom spawn production from KVK Munger Scientists, he started the mushroom production at his farm. He was instrumental for popularization of mushroom cultivation among the farmers of Munger district of Bihar. Initially, he supplied vermicompost @Rs.6/kg, fresh mushroom @ Rs. 100 / kg and mushroom spawn Rs. 80/kg to the other farmers. During the start of his business, he earned meager profit from Mushroom cultivation, spawn production and vermicompost production. But, with the technical advices and training over the time from KVK, he fetched good income from it. In addition, from another 3 acre of his land, he was producing wheat and mango. The economics of his farm produces have been given below.

Enterprises	***Area (Acre)/ No.***	***Cost of production (Rs. per unit)***	***Return (Rs. per unit)***	***Net income (Rs. per unit***
Mushroom spawns production.	1unit (100kg)	6000	18000	12000/Month
Spawn production	1 unit (125kg)	4000	10000	6000/ Month
Vermin compost production.	3 unit	6000	12000	6000/ Month
Wheat production	2 Acre	12000	37500	25500/Year
Mango production	1 Acre	10000	32500	22500/Year

Mr. Manish uses to guide local unemployed rural youths for production and marketing of mushroom, vermicompost, grains and fruits to make them self-sufficient in terms of earning. He is a role model for other entrepreneurs in the district.