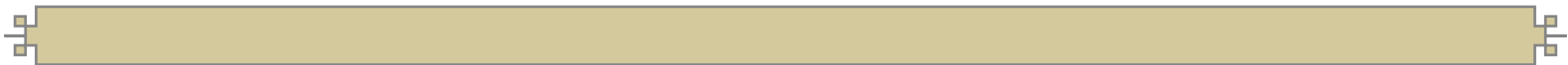




# *Harvesting Wisdom of* **Coconut Growers**







Mr. M. M. Dominic, hailing from the remote village of Anakampoyil in Kozhikode is an innovative farmer who always reposed good faith in coconut. He is 56 years of age and studied up to SSLC. According to Mr. Dominic, adopting coconut based multiple cropping and integrated farming is the effective strategy to overcome the difficulties due to low market price for coconut. He has been maintaining coconut based farming system by effectively utilizing interspace in his coconut garden for growing different inter/mixed crops and integrating animal husbandry in a sustainable and profitable manner. Mr. Dominic maintains 15 acres coconut farm in the slopy undulating terrain with 600 coconut trees of West Coast Tall variety, out of which eight acres are irrigated and seven acres rainfed. Nutmeg and cocoa are planted as mixed crops in the irrigated coconut garden; 225 nutmeg trees in three acres and about 1000 cocoa trees in five acres. Nutmeg has been planted in the centre of four palms. Besides these perennial crops, banana, elephant foot yam, colocassia, cow pea, bitter gourd, snake gourd, turmeric and ginger are also cultivated as intercrops in a small scale. About 1000 arecanut palms are mixed cropped in the rainfed coconut garden in seven acres. The animal husbandry component of his farm includes five cows, nine goats, two buffaloes, ducks (15nos), and few poultry birds in backyard rearing mode. A perennial stream flows through the farm which provides assured water for irrigating half of his farm where inter/mixed cropping is practiced. Irrigation is done through sprinkler system. Stone pitched bunds are constructed throughout the farm in the slopy terrain for soil and water conservation which are repaired/reinforced as and when required. A unique feature of agro-techniques adopted by Mr. Dominic is maintenance of wide basin for coconut and other component tree crops viz., nutmeg and cocoa. According to him, providing wide basin is important for effective irrigation and moisture conservation. Coconut leaves and husks are used for mulching the basins. Vermicomposting is adopted for recycling the biomass available from his farm. In Dominic's farm, pest and disease incidence is very low in coconut and subsidiary crops except for the fruit rot, fruit drop and drying of branches from tip downwards due to fungal infection in nutmeg. Application of 1% Bordeaux mixture is effective against these problems. Soil is not disturbed in the basin of nutmeg tree. Manures and fertilizers are applied in the basin and just forked in. According to Mr. Dominic nutmeg is the most suitable mixed crop for planting in coconut garden because of its long economic life, low incidence of pests and diseases, low cost of cultivation and increasing yield and income every year. In the slopy terrain of the rainfed coconut garden where mixed cropping of arecanut is practiced, proper soil and moisture conservation practices including stone pitched contour bunds, mulching etc are adopted. Part of the cow dung from the animals in the farm is recycled as vermicompost and applied to coconut and component crops. Some quantity of cowdung is used for making biogas. Biogas slurry is recycled back to the crops as manure. On an average Dominic is able to harvest 150 coconuts per palm annually. Average yield obtained from nutmeg is 4 kg nuts and 500 g mace per tree. From cocoa the average yield is about 800 g dried beans per tree. From arecanut he is getting an average yield of two kg dry kernel (chali) per palm per year. On an average Rs. 250 per plant is the net income realized from banana raised as an intercrop. On average 15 lit milk is obtained per cow. Net income from the coconut based integrated farm is about rupees two lakhs per ha per annum. Effective utilization of family labour is one of the factors for his success in farming. As a fulltime farmer, Dominic involves in all the farming activities. Mr. Dominic has received various awards/recognition for his achievements in farming. In 2011, he was bestowed with the prestigious 'Kerakesari' award, the state level award for the best coconut cultivator instituted by Department of Agriculture, Kerala, and in 2015 he won 'Karshakothama' award for the best farmer adopting integrated farming practices. He maintains regular contact with research and extension agencies to keep abreast with latest developments in farm technologies. He is a member of the Block Technology Team under ATMA project and a much sought after resource person. He is always happy to share his experiences and expertise with other farmers.

Contact: Mr. M. M. Dominic, Mannukusumbil House, Anakampoyil, Thiruvampady, Kozhikode, Mobile: 8281076029.



Mr. Sibi Francis (41) is a resident of Kattipara panchayat of Thamarassery in Kozhikode district. He has inherited 10 acres farm from his father. During his childhood, along with his studies, Sibi used to help his father in planting the seedlings and other related works. Sibi is grateful to his family especially his father who has taught him the basic lessons of farming. All the coconut trees planted by his father 60 years ago are replanted with the latest varieties of coconut. According to him, to make farming profitable, it should be viewed as a business and should be updated with technological advancements. He has 400 coconut palms out of which 350 are local west coast tall variety and the remaining 50 are DxT hybrids. The productivity per palm is 150 nuts/tree/year and his total production is more than 65,000 nuts per year. Besides coconut, Sibi is growing intercrops like arecanut, black pepper, tapioca, nutmeg, ginger, turmeric, banana and vegetables. Both organic and inorganic fertilizers are applied for coconut as well as for the intercrops. Cowdung, coconut mixture, bone meal and neem cake are applied as organic manure. A biogas plant is attached to his farm from which slurry is pumped to the field through channels. This is done during every month and once in a year, chemical fertilizer mixed with the slurry is applied to the crops. According to him, this practice reduces the labour requirement to a great extent and the uniform application of slurry to the palm helps in increasing the production as it is properly mixed with the soil and reaches to the system. Sibi has adopted sprinkler system for irrigation. He has a pond with sufficient quantity of water which makes irrigation possible throughout the year. Harvesting is done six times in a year. Earlier he used to convert coconut into copra, but now due to the scarcity of labour he sells the nuts directly to oil mills and local market after meeting his personal requirements. He opines that selling tender coconut fetches more income compared to mature coconut, as the rate of coconut fluctuates always. Sibi is also having pisciculture, poultry, goat farming and bee keeping. The pollination of his coconut palms has improved after the installation of honey bee boxes. Sibi Francis is the recipient of the best farmer award of his local Panchayat in 2010-11. He maintains a very cordial relation with the Krishi Bhavan and the Coconut Development Board. He has availed subsidy from Krishi Bhavan under the State Horticulture Mission for banana intercropping. He was the convener of the cluster programme implemented by the Board during 2009-10 and 2010-11. In his opinion, the cluster programme of the Board encourages the farmers to follow systematic cultivation practices. Intercropping was also practiced which makes coconut cultivation profitable. Sibi Francis's advice to other coconut farmers is that multiple cropping and mixed cropping has to be adopted for making coconut cultivation profitable. Good quality seedlings especially dwarf and hybrids are to be planted for getting good yield. More dwarf varieties must be planted for harvesting tender nut. Sibi does not allow his palms to grow after 40 years. He will cut and remove them and will replant good quality dwarf and hybrid seedlings. He appreciates the new initiatives of the Board viz., Friends of Coconut Tree and Coconut Producer's Society. He was the key person in conducting the FoCT training programme at Krishi Bhavan at Kattipara. He is hopeful that the CPSs would help the farmers to sell their products with better price and will also encourage product diversification and value addition.

Contact: Mr. Sibi Francis, Ittiyepara, Kattipara, Thamarassery, Kozhikode, Mobile: 9446732460.



*Mr. Bhavadas, C. R.*

Mr. Bhavadas, C. R., is a full time farmer enjoying farming as a profession and leisure for the past 43 years. For him, the source of inspiration was his grandmother, who was an excellent farmer. During his childhood days, he used to accompany his grandmother while she practiced various traditional agro-techniques in and around the farm. He has been cultivating coconut as main crop in 10 acres with multitier intercropping with nutmeg, pepper, arecanut, banana, yams, papaya, ginger, maize and moringa. In this coconut based farming system, 700 bearing coconut palms, 500 non-bearing palms, 500 nutmeg and 250 arecanut palms are included. In addition to that, he has planted arecanut as a monocrop in 2 acres, 100 mango trees of different varieties, viz., Sindooram, Banganappally, Kalappady, Alphonso and Kilimookku. He also grows pine apple separately in another two acres. Interestingly, he is cultivating paddy in 6 acres, in the midst of all negative preaches on paddy cultivation in Kerala on account of labour scarcity and profitability. According to Mr. Bhavadas cultivating paddy binds him firmly to his cultural identity as well as the cultural nostalgia. The farm is located nearby Mangalm dam and that ensures adequate continuous supply of water. All coconut palms are WCT variety developed in his own farm and of uniform age around 45 years. He is adopting a wider spacing of 9m x 9m so as to accommodate all intercrops. Regarding nutrient management, lime (2 kg), goat manure (10 kg), cow dung (15 kg), neem cake (3 kg) and Muriate of Potash (2 kg) are applied annually to coconut palms. For irrigation, three bore wells and one open well are there in the farm. Tanks are located in the in upper plots and basin irrigation with hose is done once in three days along with mulching using coconut leaves and bunds for rain water harvesting. The palms have started yielding at the age of five and arrive at stabilized yield in 8-10 years with 130 nuts/palm/year. According to him, coconut monocropping is not profitable and his experience revealed the best intercrop as nutmeg, having less labour requirement. The scientific layout of the plot with proper spacing coupled with judicious plant health care clearly reveals the promising yield from all crops with negligible pest/disease incidence. The heavily yielding nutmeg plants in his farm are eye catching to everyone visiting the farm. In addition to organics, a mixture of urea, mussorie phosphate and muriate of potash @ 1.5 kg/plant is applied annually to nutmeg. Nutmeg budded plants are produced in the farm itself. From nutmeg the net income generated is to the tune of Rs.3.5 lakhs. Palayankodan and Poovan varieties of banana are cultivated and getting average yield of 10 kg/bunch. The gross income from the entire farm is around Rs.15 lakhs, of which the cost of cultivation accounts to rupees 8 lakhs. Paddy cultivation is under mechanization, and tray method of drying is practiced for drying nutmeg during rainy season. Marketing has never been a problem for him. Nutmeg and arecanut are sold at the farm itself and coconut through Krishi Bhavan. On the other hand, banana and other items he sells through local market. He has very good social participation and regularly visits Krishi bhavan. He is a member of Rotary club and other local organizations.

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*Mr. K. Narayanan Kutty*

Mr. K. Narayanan Kutty is a progressive farmer in Perumatty panchayat, who holds a MBA degree and son of a well known political leader with sound economic background. Though his siblings are in glorious professions, he returned to his land for satisfying the urge to be a farmer even after obtaining a reputed job. He owns 11.5 acres of coconut garden with 650 palms of different varieties/hybrids like Kerasree, Keraganaga, Lakshaganga, Komadan, Malayan Yellow Dwarf etc., most of which were procured from CPCRI, Kasaragod, 28 years back. He has farming experience of 12 years. He has adopted a spacing of 9m x 9m for coconut and is intercropped with nutmeg @ one plant in between four coconuts. He is getting an average yield of 150 nuts/palm/year by adopting soil test based nutrient management practices including micronutrients in addition to organics and green manure. Microbial formulations of *Trichoderma*, *Azospirillum* etc. are used for growth promotion and disease suppression. Recycling and mulching with coconut and other crop residues are also practiced. Scarcity of water and higher labour cost are the major constraints for traditional irrigation in the tract. To overcome this, he has adopted drip irrigation as the most suitable method in utilizing available water. Fertigation technique is followed for nutrient application. Integrated pest and disease management, both prophylactic and need based curative measures are practiced for managing pests/diseases of coconut. Regarding marketing, regular buyers are coming even from distant places due to the quality of the nuts. Harvesting is done using poles, which reduces the major lacunae of depending on traditional climbers. Neera tapping is done in seven palms, yielding around 24 litres per day. Net income from coconut accounts to Rs. 4.25 lakhs. Additionally, he gets an income of around Rs. 4.5 lakhs from nutmeg. He has evolved innovative methods of processing using solar dryer, storage in specially designed drum containers and grading nutmeg. Good quality budded plants are produced in his garden based on yield and quality of mace. He has very good extension contacts and social participation. He utilizes all sources like farm magazines, radio, TV and information and communication techniques like internet and mobile based services for updating knowledge on farming. Apart from collecting and utilizing scientific farming technologies, he is equally interested in transferring his knowledge to farmers, students and other clients.

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Contact: Mr. K. Narayanan Kutty, Ezhuthanikkalm, Vilayodi P.O. Perumatty, Palakkad, Mobile: 9497122667.



Mr. K. Krishnanunny, is a master farmer and winner of the Karshakothama award during 2016 and the best ATMA farmer of the block. He is an organic farming expert, who is keen in gathering information on advanced eco-friendly techniques and climate resilient practices, for which he visits institutions and farmers of other states. He is practicing integrated farming system involving diverse crops and enterprises like dairy, goat, fish, poultry, duck rearing units and apiary. The total area of his farm is 15 acres, in which 10 acres is under paddy, one acre under vegetables, 50 cents under ultra high density planting of mango and remaining area is planted with different varieties of diverse crops - 500 coconuts, 2000 cocoa, 300 arecanuts, 100 pepper plants, 80 mango, 1500 banana, 100 amla plants and tuber crops. His banana and vegetable cultivation is under open precision farming and entire farm has drip irrigation facility. He has undertaken on-farm production of biocontrol agents and biofertilizers and practices ecological engineering. He is producing 10 tonnes of paddy seeds for the Seed Growers' Programme of KAU and 200 kg vegetable seeds under Registered Seed Growers Programme (RSGP) programme of Kerala State Seed Development Authority (KSSDA). All vegetables including cool season vegetables are grown in his farm organically and he uses only biological methods for pest/disease management viz., Trichocards, light traps, yellow traps, other traps and lures, mechanical devices like reflective ribbons, biopesticides and fungicides, biocontrol agents including microbial formulations, predators and parasitoids. For nutrient management also, he resorts to organic manures, *Azospirillum*, *VAM*, *Azolla* etc. He undertakes farm level multiplication of *Trichoderma* and *VAM* and also produces all lures and traps. He has a large vermicomposting unit and a biogas plant. Several demonstrations on released varieties under IPM and INM practices are carried out in his garden and his farm is a full- fledged ATMA farm school (training centre for integrated farming system) with all learning facilities like posters, charts, laptops and LCD projectors. Large number of officials, farmers and students visit his farm for informal learning. Every one visiting his farm returns with a message on farming as a 'viable, profitable and entertaining livelihood option' for a better tomorrow. He earns a net profit of around Rs.16 lakhs from different crops and Rs. 4.5 lakhs from other enterprises. He is very active in local media and created awareness to paddy farmers on organic farming techniques, covering 1800 ha area.



Mr. V. Vasudevan, the first Karshakothama award winner with wholehearted support of his wife and son is not tired of farming even after the age of 90. He left his aeronautical job so as to do farming which he considers as the most decent job, the spirit for which had been inherited from his family. Total area of the coconut farm is seven acres having 250 palms of age more than 50 years, intercropped with various varieties of banana, mango and arecanut, in addition to 20 acres of paddy. He gets an average yield of 200 nuts/palm/year from coconut. The uniqueness of his farm is the siphon system of irrigation utilizing the principle of pressure variation, followed earlier when modern techniques were not common. For water conservation and organic recycling, trenches were taken in between rows of coconut and filled with husk and crop residues. According to him, management to intercrops will help in improving the health and yield of coconut. His rich experience in farming reveals the major reason for reduced interest in coconut farming is the wide gap between cost of production and profitability. The main reason for which is accounted to fluctuating prices. In general, organic cultivation is followed for coconut including mulching and less productive palms are supplemented with NPK fertilizers based on soil test. Channel irrigation is provided once in three days. He is interested in wide social acquaintance irrespective of age and health. He is the secretary of 'Padasekhara Samithy' and also the member of Agriculture Development Committee. He is honoured by the Krishi Bhavan during all special occasions. He was the former District President of National Farmers Federation, founder president of Cooperative Bank, Founder president of Milk Society, President of Sree Narayana public school of the area. He is a locally accepted farmer leader who always provides moral support to the local farmers and Agricultural officer.



*Mr. K. K. Soorya Narayanan*

'How much we conserve the life of the soil that much will be the success of farming', says the Kerakesari farmer, Mr. K. K. Soorya Narayanan. He owns nine acres of land, in which coconut (500 nos.), banana (6000 nos.), paddy (1 acre), rubber (1 acre), arecanut, sapota and other fruit crops are cultivated. He hails from a big agriculture family and his children and all brothers and sisters are practicing intensive paddy cultivation and the family has the credit of producing highest quantity of rice in Kerala. He is a farmer practicing farming with weeds as the major source of manure, which are not removed or incorporated, but kept as live mulch after thrashing and coconut leaves spread over it to conserve moisture. Contour bunds were constructed against gradient and wider spacing was adopted at the initial planting itself to accommodate maximum intercrops. He has developed a small watershed in the lowest portion for facilitating conservation of water and maximum ground water recharge. The goat manure @ 500 gunny bags once in two years is the only added manure in the entire farm. The monthly expenditure is about Rs. 35,000 per month as labour cost. Average yield is 180 nuts/palm/year and get a net profit of 5-6 lakhs/year from coconut in addition to 2.5 lakhs from intercrops. Mulching is not provided in coconut basin, but heaped in different parts of the farm for conserving moisture. Traditional aerobic composting is done in the farm. He is practicing organic farming since 1986. He conducts organic farmers' meet every month and has facilitated establishment of 150 organic gardens. Several visitors including organic farmers, students and farm groups utilize his expertise for understanding the concept of organic farming.

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Contact: Mr. K. K. Soorya Narayanan, Kakkottil, Mankurissy, Mankara, Thenur, Palakkad, Mobile: 9496516117.



*Mr. P. A. Mathew*

Mr. P. A. Mathew, is an enterprising farmer from Agali of Palakkad. The 17 acres of land he purchased in 1999 had coconut palms alone. Gradually he introduced other crops like Coffee, Mandarin, Orange, Lime, Rambuttan, Banana and spices crops like Nutmeg, Pepper, Ginger and Turmeric. He also started integrated farming with components like cow, goose (12 nos.), chicken (20 nos.) and apiary. The cropping system consists of coconut intercropped with Coffee-Nutmeg- Pepper- Banana/ tuber crops. He has intercropped one part of his coconut garden with fruit crops like orange, mandarin, guava, mango and gooseberry. His success lies in identifying good mother palms/source of planting materials of all crops from farmer's plots and he purchases the planting materials from those farmers once he is convinced about its quality. He has raised all coconut seedlings from the seed nuts procured from Nellipathy Village (near Attapady). He adopts organic farming to the maximum possible extent. In the case of coconut palms, initially he applies bone meal (5 kg) and FYM (75 kg) followed by application of fertilizers once the coconut palms are three years old. His entire farm is irrigated using hose irrigation. He has constructed one 8.5 feet deep ferro-cement tank (with 3.60 lakhs litres capacity) at the top most point of his estate. He is keen to form a basin of 2 meter radius at the base of all coconut palms and he advices farmers to apply fertilizer only in the peripheral area (and not near the trunk) for maximum fertilizer absorption as feeder roots and active only in and around 1.5-2.0 m radius. His approach of forming wide basins supplemented with balanced fertilizers and proper irrigation, followed by timely weeding and mulching is the success of his coconut farm. Recently, after implementation of 'Kera Gramam' programme in Sholayur Krishi Bhavan area, he has adopted half moon micro catchment method for water harvesting. Before adopting half moon micro catchment, he had to irrigate the coconut palms once in a week. But after adopting half moon method, he needs to irrigate only once in two weeks. The productivity recorded was 170 nuts /palm/ year during 2013-14 and after adopting half moon micro catchment his yield has gone up to 200 nuts /palm (2014-15 onwards). He has 550-600 coconut palms of which 500 are yielding palms in 12 acres area. In addition, he has arecanut in 3 acres (2000 nos.), coffee as mixed crops (3000 nos.) and nutmeg 520 nos. He sells mature coconuts to merchants from Kankayam (Tamilnadu) in bulk. It fetches him Rs.12.50/kg of husked nuts (as per July 2016 price). He get nearly 1,00,000 coconuts from 500 palms (revenue of Rs. 15-17 lakhs) and arecanut (ripe nut yield of 15 tonnes @ Rs.30/kg which fetches Rs. 4.50 lakhs, Nutmeg for Rs. 3 lakhs, Mango Rs. 50,000 and from Banana Rs. 1 lakh. The gross return is Rs. 25-28 lakhs and the expenditure comes to Rs. 18 lakhs, of which major chunk is to meet labour charges and cost of fertilizers. But his drawback is that he doesn't adopt mechanization. His opinion is that if he depends too much on mechanization, his cost of cultivation will go up and he may not be in a position to complete farm operations in time. His major focus is on wider basin, systematic soil and water conservation techniques to reduce soil loss and water shed approach to harvest rain water in the palm basin itself, timely adoption of various agro techniques like weeding, mulching and irrigation. If weeding is not done continuously it will affect productivity. His land is mostly on sloppy terrain and he depends on nearby river (Bhavani) for his irrigation needs. In Mr. Mathew's farm, pest and disease incidence is very low especially in coconut and other component crops. He has two cows (one local breed and one Holstein Friesian). Mr. Mathew has received 'Kera Kesari' instituted by Directorate of Agriculture, Govt. of Kerala during 2008-09 and Kshoni Samrakshana award of Directorate of Soil Survey & Soil Conservation, Govt. of Kerala during 2014-15. His wife Mrs. Thresiamma Mathew assists him in all farm operations especially maintaining the accounts of 15-20 permanent labourers. He has also received many awards and recognitions from different agencies and Krishi Bhavan.

Contact: Mr. P. A. Mathew, Puthuparambil House, Agail, Attapady, Palakkad, Mobile: 9020706090.

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Mr. Nagaraj, A., is a young progressive farmer from Kannimari village of Palakkad. He is 46 years old and has 25 years of experience in farming. He is cultivating 20 acres area and the entire area is planted with coconut (WCT-1350 nos. & COD -150 nos.). In addition, he has component crops like nutmeg, cocoa, sapota and papaya. He has a mixed farming unit with cow, goat, and poultry. His entire garden is under drip irrigation. He has constructed a pond in one part of his garden which he uses for fish rearing and the entire irrigation water is drawn from three wells dug in three different locations in his garden. He also utilizes this pond for rearing 'Nettar' fish that fetches him premium price and pretty returns. Nearly 400 WCT palms (30% of the total palm population) are spared for toddy tapping and he earns approximately Rs. 3300/month/palm for a tapping period of six months. During the next six months, another set of 400 palms are used for toddy tapping. In addition, he has planted 150 COD palms for tender nut production and they are yet to reach bearing stage. The remaining palms (nearly 850 nos.) are used for harvesting mature nuts. He is a genuine organic farmer and applies organic manure prepared locally @ 25 kg/palm and he applies the compost once in four months. The organic manure (compost) is prepared from raw materials available in his farm and he also purchases items like FYM, poultry manure and goat manure from reliable sources. He adopts timely irrigation to all coconut palms @ 40 litres per palm per day. He has rarely faced pest and disease problems. But at times he noticed rhinoceros beetle damage in few palms in his garden. He usually takes upto eight harvests and he gets around 150 nuts/palm/year. From the sale of mature coconuts he gets Rs 18.0 lakhs and from toddy tapping he gets Rs. 20 lakhs. In addition, from sale of nutmeg (from 1000 nutmeg trees) he gets Rs 5.0 lakhs annually and by marketing cocoa pods (from 1500 cocoa plants) he earns Rs. 2 lakhs while sapota provides him Rs. 1 lakh. He uses papaya for home consumption. In addition, he earns Rs. 4 lakhs annually from animal husbandry (Rs. 3 lakhs from sale of milk, Rs. 40,000 from sale of goat and Rs. 60,000 from sale of egg and chicken). He sells coconuts directly to traders who offer the maximum rate. His net return has gone up by 25-30% after sparing palms for toddy tapping and tender nut harvest. Usually he gets a gross return of Rs. 50 lakhs per annum from different farm activities spread over his entire 20 acres area. According to him, the expenditure works out to 50% of gross returns and his net profit is Rs 25 lakhs from 20 acre area. He engages six permanent labourers. He also has two brush cutters for weeding and a wheel barrow and a power sprayer. He is the president of co-operative society and also involved in social life. He was honoured by Perumatty Krishi Bhavan during August 2015 on the occasion of Farmers' Day and was awarded Kera Kesari award for the year 2014-15. He also received an award from Chief Minister of Kerala for his special contribution in horticulture in 2016.

Contact: Mr. Nagaraj, A., Nellimed, Kannimari P. O., Palakkad, Mobile: 9626244555.



There is no other substitute for the farm of Mr. Thomas, the Karshakasree winner of 2002 to experience the model of resource optimization especially in water conservation and management. For him, farming is his life and not only a profession. Thomas, a settler from Pala in South Kerala purchased 7.5 acres of land in Vettilappara during 1970s and slowly developed it into a complete integrated farm with whole hearted support and encouragement of his wife, Mrs. Elikutty. All his three sons are interested in farming and practicing agriculture. At present, he has 3.5 acres is under coconut based farming system. He has 180 WCT variety coconut palms of 45 years age and few dwarfs which were obtained from CPCRI and Tamil Nadu. He has also planted 1000 arecanut in 2.5 acres, 150 nutmegs and 500 pepper and 500 rubber trees. He has an innovative method of retaining only one or two branches of the male trees of nutmeg and grafting is done in the remaining branches to get more income and to save space. As far as the nutrient management of coconut is concerned, he applies bone meal with neem cake mixture by the end of May @ 4 kg/palm. Soil test based NPK fertilizers and cow dung slurry is applied in the entire field once in 45 days. A tank having capacity of 50000 litres is connected with cattle and poultry sheds. The slurry pumped from the tank is channeled through pipes to the micro sprinkler system in the entire garden. He is getting an average yield of 150 nuts/palm/year. No pest or diseases are encountered in the garden except coconut eriophyid mite. He is of the opinion that all plants should be of same age in a plot and as such no under-planting of seedlings is done. He has adopted wider spacing for planting of coconut (nearly 50 plants/acre) so as to accommodate intercroops without competition for sunlight, nutrients and water. He believes that if coconut is planted at a wider spacing to accommodate 4-5 ideal intercroops, capable of utilization of maximum sunlight, the system will be the most profitable farming system. The soil and water conservation system developed and followed in the farm with his rich experience of 45 years in farming is a model, which can be promoted and replicated under watershed management programmes. For continuous water supply, a large pond has been dug in the garden. In addition, bunds are constructed in different gradients of the slope and rain water pits are dug in the entire garden along with mulching, where rain water as well as irrigation water is judiciously conserved. He has 3 cows, 5 goats and 50 poultry birds, all are maintained in minimal space in specially designed sheds/cages with provisions for waste disposal in lower portion and drying of farm products in the roof space. The animal and poultry sheds are well maintained with provision to pump the wastes directly in to the collection tank wherein it is mixed with slurry from the biogas plant. The integrated system for nutrient and water management helps in reducing labour cost to a considerable extent. He is getting a net profit of around Rs.10 lakhs from nutmeg, around Rs. 4 lakhs from arecanut, one lakh from coconut, one lakh from pepper and two lakhs from banana apart from the income derived from other crops and enterprises. On an average the total income per acre is around Rs. 4 lakhs. He is the active member and office bearer of coconut producer society and federation and rubber producer society. He has regular contact with government agencies and utilizing support for establishing irrigation systems, vermicompost and biogas units.

Contact: Mr. Thomas, Vettath, Vettilappara, Areecode, Malappuram, Phone: 0483-2759118.



Mr. C. M. Muhammed, recipient of the Karshakothama award, Karshakasree award for the farmer couple and the best coconut farmer award of Coconut Development Board is an innovative farmer, who has developed remote automatic irrigation system for coconut, utilizing recycled waste water. He has also developed a mini plant for processing and bottling of Neera. A small oil expeller is also functioning in the farm, which is attached to the house itself. He hails from a traditional agricultural family and is well supported by his wife in farming, who also shared the Karshakasree award during 2008. Total area of the farm is 10 acres with 550 WCT coconut palms and 400 seedlings of Ramaganga hybrid brought from Umapathy Coconut Hybrid Production Centre, Tirupur, Tamil Nadu. The majestic appearance of the palms with around 200-250 nuts/palm is beyond comparison with any other coconut farms of Kerala. He has unique nutrient management and irrigation systems, specifically developed for his farm. For irrigation of the entire farm, he is utilizing purified waste water from a hospital run by his family, which is stored in a tank of 35,000 litres capacity. A separate mixing unit for making fish amino acid having 2MT capacity, another unit for mixing cow dung, urine, plant parts of calotropis, hibiscus, curry leaf, jack fruit etc., have been developed in the farm and the slurry collected in different tanks are mixed in a common tank, where from it is pumped to the farm along with automatic dilution with water from the tank. In addition to that, lime application is done to coconut twice a year. Regarding management of pests and diseases, he adopts technologies recommended by KAU, Krishi Bhavan and other research organizations. Neera tapping is extensively done in 200 palms, from which an average of 3lit/palm/day is obtained. The mini plant for processing and bottling of Neera with pasteurization facility has a capacity of 2500 bottles and a 200ml bottle is sold @ Rs.25. Rejected neera is utilized for making vinegar, turnout of which is around 10-20 lit/week. On an average, he gets of Rs.5 lakhs per month from Neera alone. Harvested nuts from remaining palms are used for farm level oil production in the mini mill, the income from which is around Rs.6-7 lakhs. The farming system is integrated with crops like arecanut, nutmeg, pepper, banana, other fruits and vegetables along with dairy unit with 16 cows and poultry units with hen, duck, emu and turkey birds, the waste from which are pumped to the common storage tanks for recycling. This enabled him to reduce the cost of nutrient management to the minimum level. In addition to the integrated farming system, a separate poly house for growing vegetables is maintained for meeting the vegetable requirement of the hospital. Mr. Muhammed is the Vice Chairman of the Tirur Coconut Producer Company, and he is a vibrant leader aiming at establishing the biggest neera processing plant. Apart from his passion for farming, he motivates other coconut farmers of the locality.

Contact: Mr. C. M. Muhammed, Choodanveetil, Mandayappurathu, Vettam.P.O., Malappuram, Mobile: 9447626356.



Mr. P. G. Jayachandran is a full time farmer, simultaneously fulfilling the roles as a wonderful farm teacher, farm scientist and entrepreneur in his eight acres land. His wife supports in all farming activities. He is recipient of eleven prestigious awards including Karshakothama 2004-05, Karshaka Ratna 2011, Infosys Akshayasree award 2014, Karshakasree award, Mahatma Farmers development Board Integrated organic farmer award, Haritham 2009, Karshaka thilakam 2007, Best cocoa farmer award by Mondelez India foods pvt. Ltd., ATMA State level model farmer award etc. He is subscribing 12 agricultural magazines to update his knowledge. He has visited almost all states for farm training. He is an innovative farmer who has developed a nutmeg variety 'Kadukanmakkan'. He has also developed an innovative method for preventing jorquette formation of cocoa below one metre height by providing a support pole of one metre length. He has a nursery where he maintains quality planting materials and supply to interested farmers not only as source of income but also to propagate good agriculture. He cultivates coconut and arecanut as major crops with nutmeg, cocoa, pepper, tuber crops, vegetables, fruit crops, ginger and turmeric and 20 varieties of banana as intercrops. He is also growing cool season vegetables and one acre land is under rubber cultivation. The farm is completely organic utilizing dried cow dung, goat manure and slurry from animal houses. He has three cows, 10 goats of Jamnapari breed, 10 pigs, 25 hens, one biogas plant, one each vermi composting unit and aerobic composting unit. There is a very good rain harvest structure in the farm which is recharged with river water during period of scarcity and he uses sprinkler system of irrigation. According to him cocoa is most profitable crop requiring less attention and labour cost. Recycling of large quantity of cocoa litter under multiple cropping system helps in improving soil properties whereby improving the yield. He has 1700 cocoa plants of Criollo, Forastero and Trinitario types. Cocoa husk is used for preparing cattle manure. He has processing facilities for nutmeg and cocoa through tray and dryer methods. Pepper varieties grown are Panniyur, Karimunda and Kottanadan. The training attended at NIPHM, Hyderabad and other inter and intra state trainings equipped him with recent advances in crop protection and plant health management. He also shares his knowledge with other stakeholders like NGOs, students, farmers and officers through farm schools and exposure visits.



*Mr. T. M. Pavithran*

Mr. T. M. Pavithran, a drama artist during 1960s has also proved to be a successful coconut farmer. The philosophy and simplicity of Shree Narayana Gurudevan inspired him to a great extent. He has his own indigenous knowledge on selection of mother palms, husk burial and planting techniques. He is cultivating 300 coconut palms of 50 year old, in addition to 100 numbers of COD and T x D hybrids. His wife and children provide ample support to him in farming. He follows strict selection criteria for mother palms. Palms yielding more than 200 nuts, 40 fronds, 40 inch stem girth were only selected as mother palms. During the month of May, selected seed nuts were sown horizontally and those seedlings sprouted in three months were selected for transplanting in the field during 6<sup>th</sup> month. For planting of seedlings, he usually digs one metre deep pit in which four layers of husk are placed at the bottom with concave surface up, over which coir pith, sand, dry cow dung mix were applied. For five years, necessary irrigation is provided @ 100 litre/day during January to April and once in a week during other dry period. Manures and fertilizers are applied in the basin at a distance of 1-2 m from the trunk. Organic manures, basin full of compost, 30 kg farm yard manure and coconut waste are provided along with two kg lime. After two weeks, three kg Factomphos is applied per plant. Every year crown cleaning is done. Proper drainage is ensured everywhere as the plot is in reclaimed area. Water from a pond is utilized for irrigating three acres of land. He is getting an avaregae yield of 200 nuts/palm and 36000 nuts/year fetching a net profit around Rs. 2 lakhs. In addition to coconut he has 50 nutmeg, 200 arecanut, banana and other fruit crops. Earlier he raised community nursery, but faced difficulties in disposal of seedlings. He has also established vermicomposting tank with assistance from Coconut Development Board. All coconut palms are numbered and constantly monitored. He has been constantly inculcating the spirit of farming among children and every month a minimum of 50 students are visiting his farm. He was former member of Grama Panchayat, he has donated his 30 cents of land to construct road to the nearby colony which is now known as 'Pavithran Road'.

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Contact: Mr. T. M. Pavithran, Thachappilly House, Engandiyur, Thrissur, Mobile: 9446627822.



*Mr. M. A. Muhammed*

Mr. M. A. Muhammed, finds integrated farming as a way of spiritual retreat after returning to life overcoming a serious accident. He proved his excellence in farming and allied fields by winning prestigious awards including Karshakothama-2014, district award for best farmer in animal husbandry, district award for soil conservation, ATMA model farmer, and 'Karshaka Naipunya' award. Muhammed is a traditional farmer and the entire family including wife and four children are interested and involved in farming. Along with farming he has established a nursery for distributing good quality planting materials of coconut, mango, nutmeg, pepper, sapota, and arecanut along with other inputs including paddy seeds viz., njavara, jeerakasala, gandhakasala. He provides an opportunity for the villagers to get improved varieties of vegetables seeds including IHR released varieties and Indo-American hybrids. He also provides bio-inputs viz., Vermiculite, Perlite and other bio-agents like *Trichoderma*, *Pseudomonas* etc., biofertilizers, botanical pesticides, vermi compost and fungicides procured from reliable sources at reasonable costs. He is cultivating paddy in 15 acres mainly the varieties Uma, jeerakasala, gandhakasala and njavara. He has 250 coconut palms of local variety, few COD, CGD and hybrid palms, around 1000 arecanut palms, 50 nutmeg plants, and 1000 banana plants. In addition to this, he is maintaining sesamum in four acres, and fodder grass in one acre. Coconut along with component crops like arecanut, nutmeg, banana and black pepper is the major cropping system being practiced for the last 50 years along with all fruit crops including sapota, durian, mangosteen, and rambuttan. He is practicing scientific organic farming. Annually he is applying 2 kg lime, 2 kg neem cake, 1 kg bone meal and 100-150 kg FYM along with biogas slurry. He is practicing husk burial for coconut based cropping system and soil conservation methods like terrace farming is practiced in the entire garden. Sprinkler irrigation is practiced and water harvesting system is well organized with a big pond in the lower side of the farm which also harbors fish. The entire system is integrated with cow (5 numbers – vechoor, kapila and cross breeds), poultry and duck rearing. The coconut palms in his field are healthy and devoid of any serious pest/disease attack. He is getting an average production of 25,000 coconuts/year accounting to an average yield of 100 nuts/palm /year. Annually, he is getting an income of around Rs. one lakh each from nutmeg and pepper and about Rs. 4-5 lakhs from arecanut. An average yield of 2.5 tonnes /acre is obtained from paddy cultivation. He is very much involved in educating school students in agriculture mainly paddy cultivation. He is an active member and office bearer in social/ farmer organizations like coconut producers society, ATMA group, and two charitable trusts.

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Contact: Mr. M.A. Muhammed, Manamkandathu Veedu, Kadavallore, Thrissur, Mobile: 9847070605.



*Mr. O. A. Chandrasekharan*

Mr. O. A. Chandrasekharan, is a traditional coconut farmer who is running a procuring/processing centre of coconut for M/s. Marico Ltd, Palakkad for the last six years. His son is also engaged in coconut processing business. He has total three acres of garden land with 300 WCT coconut palms and 42 hybrids. He is also cultivating 2500 arecanut with banana as intercrop. Major banana varieties are mysore poovan, njalipoovan and kannan. For coconut processing he is using a drier having capacity of 30000 nuts /batch. He is applying one kg lime, 20 kg goat manure, 30 kg FYM and fertilizers as per recommendations yearly twice along with crop residue recycling. Basin irrigation is provided once in four days. To prevent fruit rot disease of arecanut, spraying of Bordeaux mixture is undertaken as prophylactic. According to him, coconut farming with arecanut intercrops is a profitable venture in Kerala conditions, provided we need to employ family labour. He opined that the dedication and commitment towards farming along with the attitude of hard work will pay huge dividends in farming activities. He also urged for more proactive attitude of the state machineries towards agriculture, so that the farmers could be adequately motivated to carry out the farming activities. He is slightly apprehensive about the future of farming activities in Kerala, especially when the youngsters have lost the interest in farming. He is also worried about the price fluctuations of farm produces, which failed the farmers many times in the recent period. According to him, in the future, farming activities will be controlled by big farmers with ample amount of money to invest in sophistications. He has regular contact with Krishi Bhavan and is a member of co-operative society. He clears his doubts and updates his knowledge regarding farming through Kisan Call centre. He gets around 22,000-24,000 coconuts/year and also obtains an income of Rs. 5-6 lakhs /year from arecanut cultivation.

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Contact: Mr. O.A. Chandrasekharan, Ozhichirinjalil, Kadangode, Thrissur, Mobile: 9048337349.



Mr. Sajeev Antony (43) is a committed farmer as well as a businessman who is running two ayurvedic medicine manufacturing units in Thrissur. With his innate love and passion for farming, he is following the footsteps of his grandfather who was a paddy farmer. Because of his passion for agriculture, he thought of doing something innovative instead of continuing as a traditional paddy farmer in the nine acres of ancestral property. He planted Kuttayadi along with DxT coconut hybrids in his garden. He has also planted 30 Malayan Yellow Dwarf and Chowghat Orange Dwarf varieties. At present, he has more than 450 high yielding coconut palms in his garden and is getting on an average 130-140 nut per year per palm. *Caesalpinia sappan* (Pathimukham) is planted as a live fencing in the garden. He has 350 bearing nutmegs out of which 200 are giving good yield. There are more than 100 mangosteen in his garden in which 30 are yielding. He is cultivating many varieties of banana like Robusta, Nendran, Chempooan, Kadali, Poovan etc. Apart from this he is also cultivating Rambutan, West Indian cherry, Mango, Sapota, Custard apple, Grapes, Orange and different types of guava. Various varieties of medicinal crops are also grown in Sajeev's garden. Sajeev has a poultry farm wherein he maintains various types of fancy breeds, ducks and guinea. He is having pisciculture attached to his farm where he grows more than a dozen varieties of fishes. As water is available in plenty from the nearby canal, he is doing the basin irrigation. The basin is formed by reverse tilling. Sajeev is a strong supporter of organic farming. In his search for eco friendly and farmer friendly alternate systems of farming, he has been attracted to Subhash Palekar's Zero Budget Natural Farming which is increasingly becoming popular among the farming community. Mr. Sajeev is getting an annual income of Rs. 5 lakhs from coconut, Rs. 4 lakhs from banana, Rs. 3 lakhs from other seasonal crops and Rs. 50,000 from nutmeg. Sajeev is selling his vegetables and other seasonal crops to Vegetable and Fruit Promotion Council, Kerala (VFPC). He is a beneficiary of the Replanting and Rejuvenation Programme of CDB. He has received the financial assistance for cutting and removal of disease advanced senile palms. His farm has been serving as a demonstration plot for coconut based farming system. Krishi Bhavan, Kuzhur trained him to make his farm as a model farm.

*Mr. Purushothama Kaimal*


For anyone sick and tired of the polluted city of Kochi, here is a heavenly shelter to take a half an hour fresh breath at “Gurukulam” near Thammanam. More than 1800 medicinal plants and 150 fruit plants under coconut in 1.5 acres of land is a rare and soothing place to learn and relax. Mr. Purushothama Kaimal who left the bank job dedicates his life and land in the heart of the city of Kochi for conserving extinct species of medicinal plants and variety of fruits. He is the winner of State Biodiversity Award during 2014. While enjoying the healthy nature, “Gurukulam” also provides opportunities for students and other visitors to acquaint with rare collection of medicinal plants and fruit crops. Entire family of Mr. Kaimal including his wife, daughter, son and daughter-in-law is engaged in farming. Major source of his income is through the sale of planting materials during exhibitions and for planting in institutions. Kaimal’s entire farm is planted with coconut, medicinal plants, fruits and vegetables. There are a total 90 coconut palms of which 80 are WCT palms in the age group 40-50 years and 10 hybrids which are also bearing. Cultivation is purely organic with application of vermicompost @ 10-20 kg, ash @10kg/year, FYM 50-60 kg/palm/year in three split doses, along with thrashed weeds once in two months @3kg/palm as surface mulch. Spacing of 6.5x 6.5 m for hybrids and 7.5x7.5 m for WCT palms are followed. Drip irrigation is provided for all the palms. Crown cleaning is practiced once a year and leaf axils are filled with sand and naphthalene balls. Bordeaux mixture spraying is done as prophylactic measure against fungal diseases. For domestic purpose, coconut oil is produced during every harvest with 100-150 nuts and remaining nuts are sold locally. For medicinal plants, manuring is carried out through vermicompost and cow dung as two split doses per year along with leaf and crop waste mulching. Annually he produces 4.5 tonnes of vermicompost in his farm. He is getting on an average 60-70 nuts/palm deriving an income of around Rs. 50,000/year. Medicinal plants are mainly sold as planting material during exhibitions and also to schools and other institutions based on demand. He is completely satisfied with the Income from the medicinal plants even though it is not highly remunerative and varies widely from Rs. 1,000 - 10,000 per month. He considers cultivation of medicinal plants as a source of satisfaction and a social cause resulting in biodiversity conservation, protection of environment and his ultimate motto is ‘Healthy human beings and healthy nature’. His garden is the farm school under ATMA where he has trained more than 10,000 students and equal number of farmers. He enriched his information and knowledge on medicinal plants cultivation from ‘Thaliyola -the ancient literature written on palm leaf.’ He cultivates several rare medicinal plants including extinct species. His collection include nakshathra trees according to birth stars, Dasamoola plants, a combination of 10 medicinal plants of which principally roots are employed in compounding of ayurvedic formulations, other plants including Kurunthotti (*Sida cordifolia*), Chittamrith- Giloe (*Tinospora cordifolia*) Adalodakam (*Adhatoda vasica*), Aarogya pacha (*Trichopus zeylanicus*), Mahameda (*Polygonatum verticillatum*), Ayyappana (*Eupatorium triplinerve*), Camphor (*Cinnamomum camphora*), Rudraksham (*Elaeacarpus ganitrus*), Kola tree (*Cola nitida*), Kattarvazha (*Aloe vera*), Chettikoduveli (*Plumbago indica*), Ekanayakam (*Salacia reticulate*) etc. He also maintains rare fruit plants like seedless mango, ambazham (wild mango), jamba and several exotic fruit trees.

Contact: Mr. Purushothama Kaimal, Gurukulam, Thammanam, Kochi, Mobile: 9249715119.



Dr. D. Chandrasekhar Chowta who had ten years of PG teaching and research experience in the field of Cytogenetics and Radiation Biology in University of Bombay and University of Mysore, left the academic job in 1978 and started farming as a profession. He lives in joint family with his three brothers and one sister. He along with his brothers own the 'Chowtara thota' (Chowta's Farm) in Meenja village of Kasaragod. Effective utilization of technologies has been made by Dr. Chowta to make farming a very remunerative occupation. Multiple cropping and integrated farming approaches with emphasis on resource recycling have been adopted in Chowta's Farm. Apart from coconut, his farm comprises various other crops like Paddy, Arecanut, Rubber, Banana, Pepper, Nutmeg, Papaya, Jack, and vegetable crops. He has also integrated a dairy unit with crop management practices. Banana, pepper and fodder grass are cultivated as intercrops in his coconut garden. Cocoa is raised as mixed crop in his five acre arecanut garden. Recently, he has introduced the fruit crop Rambutan as a mixed crop in coconut garden which fetches good income. Mangosteen also planted in his farm. Many farmers from Kasaragod district and other parts of Kerala and Karnataka state regularly visit Chowta's farm to get exposure to the innovative farming practices. Chowta's farm has about 1500 coconut trees comprising of different varieties. About 1000 trees are of West Coast Tall variety. Three hundred and fifty trees are of dwarf varieties like Chowghat Orange Dwarf, Gangabondam, Malayan Yellow Dwarf and Malayan Orange Dwarf. The farm also has 150 trees of hybrid coconut mainly Chandrasankara and Kerasankara. Except for the WCT which are about 50 years old, majority of the trees are about 20 years old. Apart from these, Dr. Chowta has planted 400 coconut seedlings of different hybrid and dwarf varieties which are mixed cropped with Rambutan fruit plants. Since Dr. Chowta adopts scientific crop management practices especially integrated nutrient management, irrigation and water management coconut palms in his farm has high productivity. On an average the WCT trees yield 100 nuts, dwarfs about 100-125 nuts and hybrids about 125 to 150 nuts per palm per year. A very unique feature of coconut farming in Chowta's farm is that about 90 per cent of coconut yield is harvested for marketing as tender coconuts. For the last fifteen years Dr. Chowta is selling tender coconuts mostly at Meeyapadavu, the nearby small town in his village. When the coconut price was low he was able to get higher price for tender nuts sold. He was getting around Rs 10-13 per tender nut when the market price for mature coconut was only Rs 4-5 per nut. He was getting higher price for tender nuts of dwarf varieties like COD, MYD and MOD. Tender nuts of these varieties were sold for Rs. 20 per nut, while the consumers were paying about Rs. 25 per nut. He feels that there is an increasing trend in tendernut consumption, even in rural areas. Even in a rural locality like Meeyapadavu with only two shops selling tender coconut, on an average 300-400 tender coconuts are sold daily. According to him, coconut growers are to be made aware about the need to utilize the marketing opportunities in tender coconut sector which essentially fetch them more income. The innovative 'Friends of Coconut Trees' programme being implemented by Coconut Development Board is sure to help coconut growers by making available the expertise locally for coconut climbing for harvesting as well as other crop management practices, he added. He has taken the initiative to organize coconut growers of his village. He is actively involved in various committees occupying different positions for the development of agriculture in the state. To his credit, he has so many state and national level awards for his innovations in farming.

Contact: Dr. D. Chandrasekhar Chowta, Meeyapadavu, Meenja, Kasaragod, Mobile: 9447193984.



Members of Souhruda Farmers' Club, Kattamkavala, a remote village in West Eleri grama panchayat of Kasaragod are all elated as the 'Karshakamithra' award for the year 2013-14 has been bestowed on Mr. Joji. P. Daniel, an enterprising young farmer who is the co-ordinator of the farmers' club. Joji turned towards farming as his full time occupation at 28 years of age. He took up the responsibility of managing the coconut oil mill and the nine acres farm belongs to his family. Joji has been successful in developing his nine acres land holding into a model farm by adopting scientific cultivation practices. His farm comprises 240 coconut palms, 110 nutmeg plants mixed cropped in coconut garden, cocoa mixed cropped in two acres arecanut garden, besides rubber cultivation in three acres land. He also maintains two cows in his farm which provide sufficient quantity of cowdung for producing organic manure. Joji has adopted various soil and water conservation measures in his coconut garden. Scientific cultivation practices including nutrient management, intercropping, soil and water conservation measures and integrated pest and disease management have enhanced yield of coconut palms in Joji's farm to 130 nuts per tree per year. Joji also supply good quality nutmeg seedlings to farmers for raising as mixed crop in coconut garden for enhancing income. As a keen observer of the struggle of the farming community of his locality, Joji realized the need to organize the farmers and to facilitate utilization of modern farm techniques for enhancing farm income. He took the initiative to organise Souhruda Farmers' Club, Kattamkavala under the NABARD scheme with the support of the nearby branch of Canara Bank at Chittarikkal. With a view to support the coconut growers, a coconut cluster was formed in his locality under the Coconut Development Board (CDB) scheme in the year 2006. It was the first cluster of coconut growers under CDB formed in Kasaragod district. Inspired by the successful functioning of coconut cluster lead by Joji, 20 more coconut clusters were formed in the hilly areas of the district. He also played a key role in sensitizing the district administration and Department of Agriculture to prepare the proposal for the scaling up of bud rot management scheme with technical support of CPCRI and funding from CDB. Souhruda Farmers' Club, under the leadership of Joji was selected as the facilitating agency for implementing the watershed development project funded by NABARD. About 800 farmers were benefitted by the scheme with an outlay of about one crore rupees. Taking into cognizance the problems faced by farmers on marketing aspects, he took initiative on behalf of the farmers club for establishing a farmers' market for vegetables with the support of Vegetable and Fruit Promotion Council Keralam (VFPCCK). Joji received various awards for his achievements in farming; 'Kathir karshakasree award' presented during the Agricultural Fair organized at Vellarikundu during 2013, Best coconut farmer award presented by Regional Agricultural Research Station, Pilicode during 2013 and Best coconut farmer award presented by Parappa block panchayat during 2011 are important among them. Joji is always happy to share his experiences in farming to other farmers. Many farmers from nearby places and other localities visit his farm. Students from College of Agriculture, Padannakkad regularly visit his farm and interact with him. Joji and other members of Farmers Club always are keen to support research, extension and development agencies by facilitating the implementation of various projects aimed at sustainable development of agriculture.

Contact: Mr. Joji. P. Daniel, Kattamkavala, West Eleri, Kasaragod, Mobile: 9447880525.



Mr. P. V. Koran, is a progressive farmer who is 70 years old has successfully demonstrated the viability of adopting an intensive integrated farming in his 0.32 ha coconut farm. He is a respected farmer in the community for his vast experiences and achievements in coconut based integrated farming system. Mr. Koran had his formal education upto seventh class. His family comprises of four members; wife and two sons being the other members. Farming is his primary source of income. There are 56 bearing coconut palms of 23 years age in his farm. By adopting mixed farming methods in which he successfully integrated livestock production with coconut farming and was able to realize a gross income of Rs. 93775 from farming in his 0.32 ha coconut farm. He cultivates different fodder grass species in the interspaces of coconut palms. Pepper, banana, turmeric are the other crops integrated in the coconut garden. Mr. Koran, is doing most of the farming operations in the coconut based system by himself with minimum dependence on hired labour. He derives tremendous support from his wife for successfully carrying out the farming activities. Taking into account his achievements in coconut farming, ICAR-CPCRI felicitated him as one of best cultivators in the district. West Coast Tall variety in coconut is cultivated and the average yield of coconut is 120 nuts per palm per year. He has adopted soil and water conservation measures such as mulching coconut basins, contour bunds and water harvesting pits. He always keeps thick mulch of farm wastes in the basin of coconut palms and regularly applies farm yard manure @50 kg/palm. He maintains a vermicompost production unit using coconut leaves and other farm wastes in his coconut garden. The unique feature of mixed farming in Mr. Koran's coconut garden is the cultivation of different species of fodder grass. He cultivates fodder grass like Congo signal, Para grass and Hybrid Napier in about 50 cents of his coconut garden. The adoption of integrated farming methods has enhanced his income from farming thereby enhancing the economic status of his family. His achievements in integrating livestock production/fodder cultivation with coconut farming have become a model for small and marginal farmers. He also got the best farmer award under the IPGRI funded international project on "Developing sustainable coconut based income generating technologies" implemented by CPCRI in the Pallikkara coconut community. State Dairy Development Department has identified Mr. Koran's fodder cultivation as a model plot for demonstration purpose. His success in fodder cultivation and livestock production has inspired other farmers for taking up mixed farming methods in their coconut gardens.

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*Mr. A. Damodaran Nair*

Kasaragod district in Kerala is famous for healthy and high yielding coconut palms. The untiring effort of the people of this area who loves the soil and farming is the major reason for it. Mr. Damodaran Nair (58) of Periya Village in Kasaragod is a dedicated coconut farmer. He belongs to farming family who solely depends on the income from farming for their sustenance. Since he was born in an agricultural family, he keeps a deep attachment with farming since his childhood itself. Earlier he cultivated rice and cucumber and subsequently converted into coconut farming. He has 128 west coast tall and two hybrids in his two acre farm. He is getting around 100-200 nuts from a palm. His average per tree productivity is 130 nuts per tree. He is selling 15000 nuts in a year. He is adopting scientific management practices. Semi circle basins are made around the palm and chemical fertilizers and organic manures are applied every year. With the onset of monsoon, 4 kg lime, 25 kg goat manure, 20 kg green leaves and 3 kg bone meal are also applied. In August, one kg potash and 1.5kg factomphos is applied. He is spending nearly Rs.180 for a single palm for the fertilizer and manure application. He has bore well in his garden and the water is pumped from the tank and the irrigation is done through hose to each palm @ 300 litres. Harvesting is done thrice in a year wherein the climbers are charging Rs.15 per palm. He gets comparatively better price for his nut as the copra content is higher (he gets 17.5 – 18.0 kg copra from 100 nuts). This is when his neighbours are getting only 13 kg from 100 nuts. He sells his coconut as raw nuts and last year he got around Rs.10 per nut. Nair is also cultivating a variety of intercrops. Banana being the major intercrop, Turmeric and vegetables are also grown. He opines that 35 feet distance must be maintained between the palms for cultivating intercrops. He is maintaining good relationship with the government agencies. He was a beneficiary of the cluster programme of the Coconut Development Board and is a recipient of different incentives for doing farming. He is of the opinion that the governmental agencies must reach out to the farmers and the awareness creation on agriculture among the young generation is essential for ensuring food security. He firmly believes that native varieties can yield best results.

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Contact: Mr. A. Damodaran Nair, Pookalam House, Periya, Kasaragod, Mobile: 9961183545.



Mr. Tomy George had before him many attractive career avenues when he graduated from Trivandrum Engineering College in 1972 with flying colours. But he chose the path of his father and entered into the field of farming. Today he is the owner of 10 acres of land growing coconut, rubber, nutmeg, pepper, arecanut and cocoa along with mangosteen, rambutan etc. His coconut garden is in the midst of the rubber plantations in the district of Kottayam and that adds to its beauty. He has over 120 coconut palms in his garden mainly comprising of West Coast Tall and Malayan Yellow Dwarf varieties. He has a few hybrids too, which he has bought from KAU and Krishi Bhavan. The palms are in the age group of 25-30 and bearing on an average 150 nuts/palm/year. He has established a vermicompost unit with the support of CDB and has been practicing mixed farming. He uses organic manures, neem cake, bone meal and fish meal as nutrient sources. Apart from this, he also applies 1.5-2 kg of chemical fertilizers in 2 to 3 splits. He has installed drip irrigation in his garden. The drip is fitted with a micro sprinkler at the top and so loss of water is totally avoided. Irrigation is provided using drip only during summer months twice a day. Approximately 100 litres of water is supplied per palm per day. He has a pond which is the source of water for irrigation. Fertigation is done through the drip using an imported water soluble fertilizer called 'Nitrofosco'. The nuts are sold at the farm level itself at an average rate of Rs.9-10 per nut. The smaller nuts are graded and separated and converted to copra. He has availed assistance from CDB and installed two copra dryers. Copra is converted to coconut oil which is sold in the local market. He has practiced intercropping in his garden with maximum utilization of space and sunlight. Nutmeg is the major intercrop along with cocoa, arecanut and pepper. There are around 150 nutmeg trees and the sale is done at field level itself. He gets a farm price of Rs. 300 for nutmeg seed and Rs. 1200-1500 for dried mace. He also prepares budded seedlings of nutmeg with increased resistance since he uses rootstocks of wild nutmeg which also has strong root system. He is a very active farmer and is in constant liaison with institutions involved in the development of agriculture. He participates in seminars and workshops and has also represented the farmers on behalf of the state in delegations and conferences. He is of the strong opinion that with good management and high yielding varieties, coconut cultivation can be highly profitable. He insists that appropriate measures have to be undertaken for ensuring the supply of good quality hybrid seedlings to farmers.



*Mr. S. Meenakshi Sundaram*

Mr. S. Meenakshi Sundaram is a post-graduate who mastered the skill of farming from his father Mr. Sivananintha Perumal who is the founder of Farmers' association in Kanyakumari district. When youth of this generation abstain from farming, this progressive farmer used his academic knowledge for the betterment of farming activities. He undertakes farming with a passion and thereby generates happiness not only to himself but for his entire family as well as community. He feels his education has created better understanding of farm technologies and could possibly translate his knowledge to his fellow farmers. He has two sons, and one son assists him in all farming operations. He has 35 years of rich farming experience and still very active and energetic. He owns 2.5 ha land in which he cultivates coconut (West Coast Tall, TxD hybrids) along with intercrops viz., banana, nutmeg, cocoa, heliconia, and lime. His farm has good irrigation network with channel as well as drip mode fitted through fertigation technique. Optimal spacing of more than 7.5 m is followed for coconut in his farm. High density planting of banana (G9) as well as canopy management in mango are few of his well adopted farming techniques. Though Kanyakumari district is well known for *Matti* variety of banana he owns a red variant called *Chemmati*, which is very unique and he owns the privilege of conserving this unique banana variety in his farm. Many a times, this banana variety brought him accolades and also won him awards in exhibitions. Red lady papaya raised as intercrop (160 nos.) earns him a revenue of Rs. 1.4 lakhs. According to him the intercropping practices elevated the coconut yield from 75 nuts/palm/year to 110 nuts/palm/year. Routine analysis of soil for nutrient has been undertaken through state department of agriculture and the recommendations are scrupulously followed. He prefers organic mode of farming and has his own vermicompost pits and productions units. He highlighted the importance of intercropping in coconut as a provider of continuous income, employment that leads to sustainability. He used scientific pest management techniques including use of pheromone traps and prophylactic leaf axil filling of ash + salt as well as *Kolingi* + sand for the management of rhinoceros beetle. He has also highlighted that application of ash insulated the nuts from termite attack when incorporated at the time of sowing. He has realized the importance of apiary in ecosystem services and has a small unit mainly to facilitate the pollination of coconut and other intercrops. He is an inspiring role model for all agricultural students visiting his garden. Tamil Nadu Agricultural University (TNAU) conducts exposure visit for the students to learn and acquaint farming techniques from Mr. Meenakshi Sundaram. He is recipient of wide array of awards viz., best farmer award from district collector, Prasar Bharati award from All India Radio, best farmer award in International Conference on Banana at Trichy, best farmer award honoured by Hon. Deputy Chief Minister of Tamil Nadu, Vaelanmai Chemmal Award from TNAU. He has been a member as well leader of several farmer groups. Some of his assignments were, Convenor of farmer convener's Group (1992), President of district farmer Association (1996), Judge of state crop yield competition (1998-2005), President of national off-season mango growers' association (2009), President of Kurinchi Uzhavar Mandram, President of coconut production committee, Erumbukadu, and President, ATMA, Rajakkamangalam block. With his commitment and dedication he has made farming a lively enterprise and emerged as top class farmer worthy of emulating.

Contact: Mr. S. Meenakshi Sundaram, Erumbukadu, Kanyakumari, Mobile: 9443844752.



Mr. N. Sirumony (66), a postgraduate in science and a retired school teacher rates farming as a divine vocation. He further elaborates that a holistic involvement in farming provides good revenue. As an embracer of Yoga, his farming journey starts at 4.00 am each day and he strictly adheres to the scientific practices advocated by State Department of Agriculture and University. He has learnt farming skills from his father, and interestingly his son, a polytechnic diploma holder is also involved in farming. His wife and daughter-in-law support him in farming activities exemplifying family-farming concept. He owns eight acres of land and seven acres with Tall variety coconut (550). Coconut palms are adequately spaced and intercrops planted in order so that maximum light utilization is accomplished. He is of the opinion that daily inspection of crops will unravel mysteries and farm problems, and thereafter systematic intervention is easily possible. In his daily visit to his farm he hooks off the rhinoceros beetle infesting juvenile palm and heals the injury with sand fortified with neem cake. With this approach he could manage the rhinoceros beetle damage in juvenile palms very effectively. He highlights that raising different intercrops provides regular income and is very crucial in terms of financial stability in case if one crop fails. In his farm besides the main crop, he also cultivates cocoa, banana and pineapple as intercrops, arecanut as border crop and black pepper vines trailed on few arecanut palms. Cocoa pods provide him regular and consistent income once in a month. He is quite conscious about the importance of water and he has laid out drip irrigation to all coconut palms with the support of State Department of Agriculture. He reported investing about one lakh rupees as farm input will fetch you more than four lakh rupees per year. Mr. Sirumony owns two milch animals mostly for cow dung for manuring his farm. According to him, organic farming provides more yields and he therefore uses neem cake, compost and green leaf manure for coconut and other intercrops. Silpaulin based composting techniques were followed in his garden and apply about 50 kg compost per palm. The silpaulin based composting is well practiced in his farm and wherever the manure is needed the unit can be shifted for effective composting. He was the chairman of farmer group of ATMA, served as a group leader in rice farming and an active member in Vembanur water body association. Inculcating farming instinct to his only son is another important aspect that is noteworthy. He has good rapport with the State Department of Agriculture and his farm stands as a role model for coconut-based-intercropping in the district as well as water conservation strategies through drip irrigation system.

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Contact: Mr. N. Sirumony, Viralivilai, Vembanur, Kalkulam, Kanyakumari, Mobile: 9442530483.



*Mr. A. V. Selvaraj*

Mr. A. V. Selvaraj is a hard working farmer practicing organic techniques advocated by famous organic activist, Late Mr. Nammalvar. He is 58 years old and a diploma holder in engineering. He has selected farming as a career on his own interest and now holds more than 18 years of experience. His main source of income is farming and therefore for him every failure is a lesson and such failures are converted into stepping stones for success. Tirupur is known for water scarcity and with his sheer brilliance he has made his farm an oasis in a desert. He has good rapport with all leading farmers and social leaders and hence he shares his experiences in those circles. He own 20 acres of drought hit coconut garden planted with ECT coconut variety of about 40 years old palms. Besides, he also raises fodder sorghum in about four acres exclusively for his cattle. He follows organic techniques and never entertains outside inputs in the form of fertilizers/chemicals. His innovation lies on the excellent water management strategies to mitigate drought as the quantum of water available with him is very meagre to meet the requirement of coconut. He uses all his farm residues for mulching in the palm basin initially, and later he found that deposition of all coconut bio-wastes on the centre point of four palms would efficiently conserve moisture, and coconut roots could survive in a better health than mere mulching on palm basin. He has been popularizing this technique and it is striking that many juvenile palms in the neighbourhood farms succumb to drought whereas no palm in his garden showed any water deficit symptom. The limited water available in his farm is being applied at the centre of the mulched zone (centre of four palms) where feeding roots of four palms converge and meet out their demand quite comfortably. This is an excellent innovation that needs to be translated in drought prone areas. The most important part is that he could also use the husk back in the farm as mulch. It has been observed that the husk had become small wooden blocks that could significantly absorb moisture and deliver to coconut palm. A simple intervention, but a great transformation indeed. He has ten cattle and the dung of which is applied at the mulched zone once in three months. He sells off milk for about Rs. 1000 per day. Few guava plants along the boundaries were high yielding and could be a good option as an intercrop in his farm. The record maintenance in his farm is outstanding with perfect documentation of input-output components. The farm is certified organic by state department of agriculture. He is an excellent teacher and engaged busy in delivering training sessions to farmers as well as students from TNAU. His experience sharing of water conservation techniques and preparation of organic solution based cattle dung is very impressive. His preaching is always with facts and figures and his record keeping ability is well appreciated. From an area of very limited water he has made farming so remunerative and become role model for his fellow farmers. The idea emanated due to stressful demand. He is well recognized for organic farming and low-cost live mulch technology and these live demonstrations are worth more than an award. He is the president of Andhiyur Coconut Producer's Society and in all meeting his water management techniques and organic farming concepts are well popularized and showcased. The zeal and enthusiasm shown by him with his live-mulch concept will be the next generation technology on "Per drop more crop" theme.

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Contact: Mr. A. V. Selvaraj, SVN farms, 1/39 Poolankinaru, Andhiyur, Tirupur, Mobile: 9976807692.



*Dr. R. Balasubramanian*

Dr. R. Balasubramanian (66) is an allopathic doctor by profession with a lot of passion towards farming. His family consists of wife and three children who also devote time for farming activities. He owns 30 acres in which 28 acres are under coconut cultivation with 1750 palms. He has adopted two methods of planting viz., with a spacing of 27 x 27 ft in 16 acres and an innovative method of planting as paired row system planting (52 x 21 ft) in 12 acres. Though his farm is located in low rainfall zone with an annual rainfall of 700 mm, it looks healthy and green as if it comes under high rainfall zone. This was made possible because of his innovation in making trenches between two rows of palms with 3 ft width and 2.5 ft depth filled with coconut leaves, inflorescence wastes and coconut husks. This method is being followed since 20 years by which he is able to maintain palms with good vigour and yield. He never faced a problem of water scarcity in his farm even during critical period for the past twenty years. According to him, trench method of filling crop wastes between coconut palms not only helps in moisture conservation/rain water harvesting but also acts as manure for the palms in the long run. He is strictly following organic farming by recycling of organic wastes, application of cowdung, *panchakavya*, *jeeva amirtham* etc. He is practicing integrated farming system with 10 buffaloes and 12 cows and feeding requirement of animals is met with green grass by natural grazing in his fenced farm. He follows cropping system with citrus in two acres area for the past five years. On an average 160 nuts are realized per palm per year which is sold as copra. Good quality copra is prepared in his farm and recently purchased milling machine for making organic coconut oil. He opened an organic outlet for selling organic products like coconut, millets, pulses etc. through which he is getting remunerative income. Overall, he is satisfied in coconut farming and his farm is a model for other farmers especially for managing palms under water scarcity conditions.

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*Mr. S. Mohana Sundaram*

Mr. S. Mohana Sundaram hails from Thali, Udumalaipet is a graduate who started agriculture as a hobby in his childhood and later taken up as profession. He started farming with an aim to develop his farm as a model farm and also giving employment to people. After completion of graduation he has devoted his life for agriculture with passion and interest. His family including father, wife and his two children actively supports him in farming activities. His two daughters are studying in school with the ambition to become agricultural professionals. He owns 20 acres with coconut (WCT) as the main crop. He has adopted 30x30 ft spacing with an aim to follow mixed cropping system with fodder crop (*Leucanea Leucocephala*). He planted nutmeg and arecanut as mixed crops in the coconut and black pepper vines were trailed on the trunk of the coconut tree. He has a total of 1300 coconut palms, 500 nutmeg and 1100 of arecanut palms in his 20 acres farm. For better water use efficiency he adopted drip irrigation systems in his garden. He adopted integrated nutrient management with 30 kg of farm yard manure, one kg of urea, two kg of super phosphate and two kg of muriate of potash annually per palm. He has also adopted mulching with crop residues for coconut and component crops for conserving soil moisture and reduction of weed growth. He is efficiently recycling the biomass generated in the systems. Overall, there are fewer incidences of pests and diseases in his farm. He gives much emphasis on conserving natural resources keeping in view the sustainability of resources for future generation. In this regard, he has initiated sericulture where he found a novel idea of using branches of mulberry as feeding material instead of plucking mulberry leaves individually which helped in saving labour and money. Mulberry was grown as an intercrop in the coconut garden during juvenile phase of the palms. He also tried jasmine as an intercrop during juvenile phase of palms and later he removed those intercrops due to poor availability of sun light. He is an active member of coconut producer society. He maintains a farm register to manage the entire farm with details of coconut palms including systematic numbering, expenditure details, income details, farming operations etc. which helps him not only to identify elite mother palms to select seed nuts but also to run farming as business. Annually 5000 number of good quality seedlings is supplied to the farmers as a service to farming community for ensuring the performance in the long run.

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Contact: Mr. S. Mohana Sundaram, Thali, Udumalaipet, Tirupur, Mobile: 9942561343.



*Mr. N. U. Raam Mohan*

Mr. N. U. Raam Mohan is an innovative coconut farmer, coconut breeder and a poultry farm owner. He is a mechanical engineer and has a post graduate degree in Enterprise and business growth from University of Glasgow. His father Mr. S. Umapathy has produced a high yielding hybrid called Ramaganga (GBGD x WCT) with the guidance and advice of Mr. O. V. R. Somasundaram. He manages the agri-business along with his brother Mr. Ramprasad. Today there are more than 6000 farmers who have planted Ramaganga in their fields after seeing the performance of it. He owns 150 acres, mainly planted with coconut and acid lime. The coconut varieties include, WCT, Tiptur Tall, Gangabondum, Chowghat Orange Dwarf and Malayan Yellow Dwarf. The breeding facility houses a modern lab where pollen is stored and pollen viability is checked and stored for each batch. The entire farm is managed by agri-professionals. The whole breeding programme and the farm are managed by software developed exclusively for Umapathy farms. The irrigation in the entire farm is done by drip-fertigation through venturi. All the trees are fertigated weekly once. Modern nursery using pencil drip irrigation and barcode for each seedling is done for ensuring the quality planting materials. By using pencil drip irrigation every seedling is given equal opportunity to grow. This helps in rejecting the seedlings which are not meeting the quality standards. This is the first private coconut nursery in India to use barcode for coconut seedlings. By scanning the bar code, one can exactly find out all the details about the seedling, such as mother palm, pollen tree number, pollinator, inspector, harvest date etc. This has significantly improved the quality and transparency in coconut breeding. Best coconut seedlings are produced and they are sold to the farming community. He helps other farmers by conducting regular farm advisory visits to make the farming profitable. Coconut sugar is another attraction in his farm which is produced using neera tapped through ice box technology developed by ICAR- CPCRI, Kasaragod. By using this method, neera is collected in controlled and protected condition which helps to produce pure natural coconut sugar. Coconut sugar is sold in the name of 'farm made foods' in the domestic and international market. He strongly believes in innovations coupled with dedication in farming will make farming remunerative and profitable.

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Contact: Mr. N. U. Raam Mohan, Palladam, Tirupur, Mobile: 9715370707.



Mr. Ravindran, is a very keen farmer practicing organic farming and adopting excellent strategies on water conservation to enhance coconut productivity. Aged 50, he has 11 years of farming experience. Previously he was an entrepreneur running coir business. His wife supports him in all farming activities. He has 3.5 acres of coconut and six acres of cocoa. His coconut garden is well maintained and adequately spaced. He has about 210 ECT palms about 40 years old. He has five animals and uses the dung for the production of *Jeevamirthan*, *Panchakavya*, *Pazhakaraisal* etc. He also uses *Azospirillum* and *Phosphobacteria* for nitrogen and phosphorus source. He is avoiding chemical fertilizers in his farm and the farm is declared organic by state department of agriculture. The most important feature is the adoption of scientific water conservation measures as well as effective biomass recycling. He has dug out soil (1 m width x 0.6 m depth) in between the coconut and dumps all the bio-wastes from coconut into it. This forms an excellent source of water conservation. In addition, he has mulched the palm basin with coconut fronds conserving microbes as well as moisture. Organic recycling is the key for his success and his palms are very healthy and sound. With his limited source of water he judiciously delivers them for palms through drip lines following all water conservation strategies. Palms are irrigated for two hours per day through drip system once in eight days. He has opened small pond in the farm for the collection of water during rainy period. He harvests about 20000-37000 nuts from his garden. He is a fast learner and he has raised nursery for the intercrops such as papaya, custard apple, guava etc. After ploughing, he does sowing of sun hemp in his farm and the green leaf manure *Glyricidia* are planted on the boundaries. He makes out copra and sells them. Husks are retained in his farm as part of biomass recycling. The organic farming practices as well as water conservation strategies reflect his proactive steps towards sustainable farming approach. The role of his wife in organic farming is very much appreciable. She has special talent in handling the animals. Drought withstanding ability of his palms is a noteworthy feature. Judicious use of water is his strength to tide over the crisis of water shortage. Organic farming and water conservation strategies are the important aspects in his garden contributing towards sustainability. He is a member of coconut producers company, Pollachi and Udumalpet and his knowledge and experience in innovative farming techniques are well appreciated.

Contact: Mr. Ravindran, Pollachi, Coimbatore, Mobile: 8122488878.



Mr. K. Senthilkumar

Mr. K. Senthilkumar is a progressive farmer who is curious to learn and adopt new technologies as advised by experts. Aged 53, he has graduated in mathematics. His father is a retired teacher and his mother and wife assists him in farming. He is totally dedicated to farming with new ideas. He is very much keen in value addition and has attended a wide array of training programme to empower himself with the recent advances in the innovative farming. He is a respectable man in the society and occupies the chair of president, coconut producer's federation in Pollachi. In his 13 acres of land, he has 885 coconut palms of ECT variety of about 35 years old. Palms are well spaced and he raises fodder sorghum for his cattle. Boundaries are planted with green leaf manure, *Glyricidia* that are routinely cut and mulched in palm basin. He provides 45-50 litres of water daily through drip lines. Water soluble fertilizers are also gushed through the drip lines augmenting nutrients. The most significant and appreciable technology observed is that, he does not allow any bio-wastes of coconut taken away from the field. Once in a month tractor mounted shredder is hired and all bio-wastes are shredded into small pieces and made as mulch on palm basin. All palm basins in the field have different stages of disintegrated frond waste forming excellent mulch which later gets converted as excellent organic manure. This is one of the very effective modes of water conservation in the field and palm basins are mostly moist on all days. According to him, *in situ* basin composting is very effective in water conservation and bio-wastes serves as organic manure in the course of decomposition. This monthly manuring technology of bio-wastes as advised by ICAR-CPCRI scientists is now paying dividends and he is very much pleased with the technology. He has milch animals targeting for dung as well as a number of poultry birds supporting daily income. He makes his own compost of farm yard manure and poultry manure obtaining bio-mineralizer from TNAU, Coimbatore. On average 1,50,000 nuts are harvested and sold out @ Rs. 7-10/nut. Productivity is about 120-170 nuts/palm/year. He has recently established two beehives in his garden for the ecosystem services especially in pollination of coconut. He raises fodder sorghum as intercrop in coconut garden for the cattle. He is an ardent learner and follows the innovative technology of mulching of bio-wastes which could conserve about 25 per cent water demand of coconut. Learning from his experience many farmers seek opinion about this technology and started implementing in their field leading to horizontal reach out of technology which is the real outcome anticipated. He is still attending several training programmes and his hunger in learning continues. He has obtained small machineries and is in the process of virgin coconut oil extraction. He is ably supported by his wife in this business venture. His bio-waste conversion technology as manure cum mulch deserves a very special award to augment moisture stress and organic manuring. He is the President, coconut producer's society, federation as well as district farmers' advisory committee. He is also a member of Udumalpet coconut company and the bio-waste conversion technology is being popularized and showcased through social recognition. He has excellent rapport with state department of agriculture and they facilitate for different capacity building initiatives.

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Contact: Mr. K. Senthilkumar, Rangasamuthram, Chuleswaran Patti Post, Pollachi, Coimbatore, Mobile: 9442005600.



Mr. G. Senthil Kumar, is an organic farmer with tremendous commitment in farming. He is 43 years old, a graduate in cooperatives who learnt traditional farming from his father. His sister, wife and daughter assist him in farming and they are all completely involved in all farming activities. He is a role model who advocates organic farming not only by preaching but also by practice. The biodiversity enriched farm is a pleasure to watch and can impress anyone with the pleasant ambience. He has 30 acres of land comprising of coconut and allied intercrops for about 25 acres and five acres for fodder grass. In the coconut garden he has 1700-1800 coconut palms aged 30-70 years comprising of ECT, D x T and T x D hybrids. He is of the opinion that D x T palms are more prone to pest attack than other hybrid combinations and T x D palms are tolerant to drought. Though he has sufficient water, he is so conscious about the water usage and has introduced drip system in his farm for irrigating coconut @ 120 litres/day based on availability. A noteworthy aspect is the introduction of intercrops such as medicinal plants, custard apple, bread fruit, banana, tuber crops, vegetables, fodder grass etc., in all interspaces and he has not forgotten to mulch any palm basin with coconut fronds. He felt his farm is quite green with less soil cracking mainly because of intercrops and mulching technique adopted by him. His tactical approach in space utilization and water conservation is a praiseworthy contribution in farming. He maintains four buffaloes and 10 cattle mainly in view of continuous supply of cow dung for different organic formulations based on it. This includes *Jeevamritham*, *Panchakavya*, *Kanajeenamritham* and *Punnakku karaisal*. *Punnakku karaisal* comprises of 2 kg cakes of sesame, groundnut, coconut in synergy with milk (2 litres), cow dung (10 kg) and urine (1 litre) made up to 200 litres. He found that *Punnakku karaisal* admixed with *Jeevamritham* clears away drip lines without any clogging. He shuffles delivery of these organic mixtures in the field and dispenses away with any chemical fertilizers. He uses a very unique product named as Mallu (Mixture of cow's urine and neem cake) as an effective repellent against rhinoceros beetle infesting juvenile palms. He uses pheromone traps for monitoring of red palm weevil and established beehives for encouraging ecosystem services. On an average he realizes nut yield of about 130/palm/year that gives more than Rs. 20 lakhs. He employs four labourers every day by paying Rs. 400/day. He is an inspiring teacher and his farm is a role model for organic and sustainable farming. He expressed that given an opportunity he will magnify farming for all and not shy away from farming as it delivers tremendous happiness to the entire family. He aptly depicts what Saint poet Thiruvalluvar inscribed in Thirukurral 'They live who live to plough and eat, the rest behind them bow and eat'. His farm is certified as organic and his farm products are declared organic. Vanavarayar agricultural college students regularly visit his farm to learn from him is definitely an award winning recognition. He is a member as well leader of several farmer groups including Pollachi agricultural cooperative society and Pollachi coconut marketing society. With his overwhelming interest in organic and sustainable farming, he is morale booster for young farmers.

Contact: Mr. G. Senthil Kumar, Kundagoundanpalayam, Nagamom, Pollachi, Coimbatore, Mobile: 9842051556.



Mr. M. Sivanandham is a retired IAS officer aged 61 who is passionate towards farming for the past 16 years. After his central service, he was totally dedicated himself to farming which is well reflected in his garden with crop cafeteria and coconut as the primary crop. His wife assists him in farming to some extent. He owns 12 acres of land with coconut as main crop intercropped with nutmeg, cocoa, tuber crops, black pepper, star gooseberry, fruit crops such as pomegranate, custard apple, banana etc. He has about 765 palms yielding on an average of about 140-160 nuts/palm/year. From about 1200 cocoa plants, he gets about 2 kg beans /tree fetching a price of Rs. 210/kg. Palms are adequately spaced and belong to WCT. He uses drip mode of irrigation and when water is available from dam he switches to flood irrigation may be for a couple of days once in two years. Otherwise through drip mode, water is delivered once in eight days for about 30 min. The multiple cropping systems especially nutmeg and cocoa is a treat to watch and well maintained. He has recently constructed a solar drier which effectively helps in nutmeg drying in two days with topmost quality and colour. He regularly applies FYM, neem cake @ 2 kg/palm and nutrition on the basis of soil test recommendations. Pruning of cocoa is done once in a year and the wastes are used as mulch for the palms and cocoa trees. The crop-habitat diversification system usually disfavors pest incidence due to stimuol-deterrant diversionary strategy. Most tubers and vegetables for house hold purposes are cultivated in the farm itself. According to him, the major highlight of the multiple cropping system is “continuous employment leads to continuous income and if one crop fails other comes to the rescue”. Crop cafeteria and stimulo-deterrant approach of farming maintains agro-biobioversity and sustainability are the highlights of his farm. As a member of Kalpavrikhsha and Otthukuzhi Coconut producer society, he has started social networking and in coming years would be an ambassador for diversified farming for sustainable income. The involvement and passion exemplified by Mr. Sivanandhan will take him forward for a farming-studded biohappiness-leading life not for him alone but for the community as well.



Mr. P. Balu, a progressive farmer aged 42 and studied upto tenth standard. He is knowledgeable on innovative and intensive farming. He is absolutely committed towards farming as it ensures his livelihood security. His parents and his wife assist him in all farming activities. His father is the inspiring force behind for selecting and sustaining the farming venture. Water is the main constraint in the region, and he has adopted an altogether different approach to mitigate the crisis. He own 30 acres of land (14 acres Tall; 9 acres COD x ECT; 4 acres MOD; 3 acres of fallow dry land). The Tall accession is Arasampatti Tall and all varieties are planted with recommended spacing (Dwarf 22 x 22 ft; Tall 26 x 26 ft; Hybrid 27 x 27 ft). From his experience, he ascertain the fact that the hybrid COD x ECT is the best suited for the region. To combat the water deficit, he has made judicious delivery system of water to his palms through drippers, which was introduced for the first time by him in the region. According to him, petiole and leaf mulching on the palm basin as well as interspaces are very much essential to conserve the moisture, besides providing organic manures in the garden. He applies eighty litres of water for his palm and 24 litres of water for his nutmeg, which is quite sensitive to moisture stress. The most important observation is that he has provided red alluvial soil on palm basin as well as on basins of nutmeg and cocoa. He is of the strong opinion that the soil in plant basin would withstand moisture stress and facilitate the mitigation approach even under limited water supply. The performance of dwarf genotypes (MOD) was not upto the level expected which is mainly due to the moisture stress. However, he could provide sufficient water to hybrids that is yielding more than 450 tender nuts/palm/year. He heaps up layers of ground nut stalks along with gypsum and poultry manure for about a year and then applies to palms (80 kg/palm/year) as well as intercrops, which he assures very successful in enriching the soil nutrients. He maintains three milch animals and the cow dung is channelized through drippers for soil application. In addition, he has also planted few black pepper vines to observe its performance in Seemedu region. From the tall palms the yield is about 150 nuts/palm/year whereas from hybrids it is more than 450 tender nuts/palm/year. He is member of Lions club and has an excellent rapport with Vanavarayar Agricultural Institute as well as TNAU.

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Contact: Mr. P. Balu, Seemedu, Vaikalmeduthottam, MG Puthur, Pollachi, Coimbatore, Mobile: 9442236702.



Mr. Madhu Ramakrishnan is 69 years old and postgraduate in engineering. He is so conscious about biotic balance induced through natural farming. He is exclusively involved in farming for the last forty one years. He has two children, one son and a daughter. Both his wife and son assist him in all farming operations. Experts in the field of organic farming visit his farm for experiential learning. He is renowned resource person on organic farming. He owns 50 acres of land with coconut and intercrops including nutmeg, cocoa, breadfruit, arecanut, black pepper, and jasmine. He has 1650 WCT palms aged 30-50 years. He has a pond for water storage and this stored water is channelized through drip lines throughout his farm. Coir pith is provided on the basin of all palms for retaining moisture for a long period of time. Mulching has been routinely adopted in the farm. Cattle wastes are admixed with irrigation water and dispensed through the drip lines. Vermi composting is being practiced and this manure is used in the entire garden. No external inputs is applied in the farm, and all biomass generated in the farm are organically recycled. Though bio-fertilizers are not used in the farm, *Trichoderma* and *Pseudomonas fluorescens* are used in the disease suppression. The farm is not affected by major pests and diseases, but the elephant attack is a continuing menace which he finds very difficult to control. In an attempt of natural farming, pest incidence is completely suppressed and biodiversity is well conserved. The farm is declared organic by State Department of Agriculture. According to him, solar drying of copra is very economical and less time-consuming. He has a unique oil extraction process with wooden pestle and stone mortar so that high temperature is not generated in the crushing process and good medicinal compounds in coconut kernel are not lost in the extraction process. He declared that his profit got doubled after he entered into the value addition activities. He extracts oil, makes hair oil, shampoo, organic soap and mosquito repellent. Besides, pickles of amla, lemon, and nutmeg are produced in the farm. He harvests more than 130 nuts/palm/year with no external input except for farm yard manure and coir pith compost. He regularly offers invited talks at TNAU, Vanavarayar Agricultural College and several other colleges. He is planning to bring out a book titled 'Coconut and Doctors' highlighting the importance of coconut oil in food and nutritional sector. He is recipient of 'Velanmai Chemmal' Award, Outstanding Agricultural Engineer award, Mother Theresa Gold Medal, and Conservator of Natural farming Award. He is confident that the value added products in coconut, in the coming years will revolutionise the coconut sector and amplify the profit earned by the farmers.

Contact: Mr. Madhu Ramakrishnan, Santhosh farms, Kottur, Malyandipatanam, Pollachi, Coimbatore, Mobile: 9442416546.



Mr. O. V. R. Somasundaram, is a well known progressive and innovative coconut farmer who has made intercropping of nutmeg and cocoa in coconut plantation to perfection and profitability. His space utilization strategy is marvelous and his garden is eye catcher for a beginner who wishes to practice systematic cropping system. He is 69 years old and he is a graduate in botany. His wife supports him in farming related management activities and particularly takes care of the kitchen garden. He is well recognized for his outstanding farming activities and he is a member/special delegate of most of the coconut policy making bodies/forums. He owns 75 acres of land with coconut intercropped with nutmeg and cocoa in the ratio 1:1:2 (coconut: nutmeg: cocoa). Predominantly planted with WCT, he also planted T x D (WCT x COD) and (WCT x MYD) hybrids and the coconut palms are aged about 45 years. He believes that mother palm selection and quality seedlings are the basis of excellent palm health and productivity. A good palm selection is very critical and combinations of feasible and suitable intercrops are very crucial. He revealed that his success as a renowned coconut farmer is mainly because of exploiting the aspect of mother palm selection and crop diversification. He also opined that efficient water management is another important strategy for successful farming. He adopts drip irrigation and nutrients are delivered through drip lines based on soil-test crop response formula. He also gives adequate stress for need based application of micronutrient, which according to him is very crucial. He follows systematic mulching of crop residues and incorporates *Jeeva amirtham* and fish amino acid as organic amendments. Palms and intercrops are adequately spaced and all scientific practices are well practiced. He highlighted that coconut oil is the best multi-purpose oil in the world and he wish to highlight the nutraceutical properties of virgin coconut oil to the global consumers. In this respect, he is planning to set up a large scale virgin coconut oil production and export unit. He has a small kitchen garden raised under drip system for the day to day vegetable requirements. His palms are high yielding hybrids (250 nuts/palm/year) and Tall (180-200 nuts/palm/year). His farm is a model farm and visitors from all over the country as well as from abroad undertakes experiential learning. He has been instrumental in evolving appropriate strategies for the management of coconut eriophyid mite and leaf eating caterpillar outbreak in Tamil Nadu. He has received a wide array of awards which includes Velanmai Chemmal award -2005, certificate of recognition -2011 and best coconut grower award -1991. He is Member of Agricultural Advisory Committee, Doordharshan, Chennai, Member of RAC, IFGTB, Coimbatore, Member of Organic Policy, Former Member of RAC, ICAR-CPCRI and other distinguished forums. His farm model has already won global recognition on crop cafeteria and systematic coconut farming.



Mr. Balakrishnan is a very dynamic farmer who has studied upto pre-university. He is 65 years old and has more than 45 years of experience in coconut farming. Though farming served as livelihood for his family and his children moved away from farming and are settled abroad. He has six very sincere permanent labourers who take care of the entire farming operations as directed by him. Despite his children moved away from this profession, he has not lost any enthusiasm as it was his breadwinner and still it continues to be the major source of income for him. He is presently the Vice President, Coconut growers association, Thanjavur. He owns 32 acres of coconut farm raised with VPM-2 hybrid. Nearly 1250 palms are being maintained in his garden and are spaced as per recommendation. The palms are well nurtured with timely application of organic manures, inorganic fertilizers and irrigated through flooding method. According to his experience, application of goat manure is very important for coconut for sustained yield. He has kept few open spaces in his farm for exclusive vegetable cultivation. Seasonal vegetable production is being carried out in his farm. Integration of fish, vegetable production along with coconut palms has certainly contributed towards the success of his farming. In his opinion, integration of coconut with other subsidiaries are very critical for sustained income ensuring livelihood security. He has motivated his labourers for regular monitoring and sincere maintenance of his palms. Any problems faced by his labourers on farm management will be appraised by him, who in turn will inspect and suggest the remedial measures. If the problem is very severe, University officials will be contacted for timely service. He opined that reasons for sudden wilting of palms should be researched properly and remedial measures need to be given at the earliest. He is a staunch supporter of plastic free theory and no plastic entity is brought into the field. He gets a yield of 40,000-60,000 nuts per harvest with a profit of Rs. 6 lakhs per annum. He feels that coconut price should be above Rs. 10 nut for maintaining the farming as a profitable venture. He voiced his views on organic farming and integrated farming system on various platforms concerned with such issues. He learns from experience as well as from experts on diagnosing his farm problems and follows the most appropriate remedial measures. The profit earned through diversified farming is a role model for other farmers to emulate. Though he has not received any formal award, his vision on organic farming and integrated farming approaches draws many farmers into his farm.

Contact: Mr. Balakrishnan, Thamarai-kottai, Pattukottai, Thanjavur, Mobile: 9965032721.



Mr. Dhanapal is a graduate in mathematics and a dedicated farmer. Aged 44, this sincere learned farmer has tremendous farming experience of about 25 years. It is noteworthy that his entire family members are devoted to farming and his aged mother leads from the front. The commitment of his mother towards timely execution of farming operations is highlighted by the entire family members. He has close association with Coconut Research Station, Veppankulam scientists and regularly updates his farming knowledge through the interactions and discussion. The combined involvement of all family members is the major reason behind the success of his farming venture. According to him, if one loves farming to the core and undertakes with passion and care, he is sure to succeed in this venture. He owns 15 acres of coconut farm raised with ECT variety. He has obtained the planting materials of coconut from Neyveli state farm. Palms are well spaced as per recommendations and the interspaces are occupied by cocoa. The cocoa intercrop is very impressive in the field in combination with coconut. He could obtain cocoa yield of 2 kg per plant realizing an income of Rs 200 plant from cocoa alone. Besides applying the recommended NPK fertilizers, he also applies gypsum, magnesium and boron as per soil test recommendations. The secret of success in crop production is the application of organic manure @ 50 kg/palm. He felt that installation of red palm weevil pheromone trap in the field increased the pest incidence. He had a good culture of azolla and is planning to expand the cultivation of azolla to augment the requirement of organic matter in the field. Incorporation of farm residues in the garden accomplished an effective mode of biomass recycling. Some of the problems highlighted are red palm weevil and basal stem rot in coconut, rodent damage in cocoa and quick wilt in black pepper. From the economic point of view, he invests Rs. 3 lakhs/year that earns him about Rs. 7 lakhs/year from the main and subsidiary crops. The joint family farming strategy is the unique and even his absence for a day or two will be managed by the family team. His emphasis on organic manuring especially Azolla as well as system diversification is well appreciated by all visiting delegates. Though he has not received any formal award, his garden is worth an award for others to follow and emulate. He is an active member in all research-farmer activities of the CRS, Veppankulam and students visiting the institute are provided with expertise on farming activities.

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Contact: Mr. Dhanapal, Silampuvelamkadu, Moothakurichi, Pattukottai, Thanjavur, Mobile: 9865363748.



Mr. K. R. Govindarajan (64), a graduate in agriculture who has more than fifty years of farming experience. His major source of income is coconut and coconut based industries. According to him, coconut based industries are more viable than coconut farming itself. He owns about 10 acres of coconut land and five acres of paddy. He has raised ECT tall in five acres and hybrid (T x D) in another five acres. From about 200 palms he obtains about 22,000 nuts. He follows recommended spacing and uses pipeline for irrigation through flood system. He has a large fish pond in his coconut garden where he breeds two kinds of fishes. The prey fish is a genetically modified tilapia which feeds voraciously on the diet provided by him. The one which fetches him money is the predatory fish that is normally restricted on the lower bed which feeds on the GM tilapia and grows very robust weighing about 2-3 kg. The income generated from the fish farming itself amounts to more than Rs. 4 lakhs. The presence of coco peat block industry in the farm attracted both rhinoceros beetle and red palm weevil, which are being managed through chemical means. He has good quantum of coir pith waste from coco-peat industry, which he converts as coir pith compost using *Pluerotus* sp. According to him, application of coir pith compost and humid acid (1 kg diluted in 20 litres of water) and *Trichoderma* and *Pseudomonas fluorescens* enriched the soil with adequate microbes for the sustainable production of coconut. He follows soil test-based chemical fertilizer application. He gets around 180-200 nuts/palm/year from his hybrid plots, and 120-130 nuts/palm/year from the ECT palms with a production cost of Rs. 150/palm/year. He earns around Rs. 1 lakh/acre as net profit from coconut alone. The coco peat block that is being made in the farm as a small scale industry is remunerative. Most of the coco peat blocks are exported for raising vegetable seedling elsewhere. He has developed a technology of converting pith into compost and this compost is being applied to his entire coconut garden. Turning coconut into an agri-based product is the hallmark success of his programme and worthy to emulate. He feels multi-dimensional income generation strategies is very crucial for sustainable farming. His political affiliation makes him still more popular in disseminating his technology which is business oriented rather than farming oriented. He is not concerned about marketing his products as he has got a special niche segment for them. He is a member of Cauvery Delta Agro-producers Company and Farmers Supermarket Thanjavur.



Mr. Velumoni is an innovative farmer from Pattukottai with excellent knowledge on various facets of farming activities. He is 48 years old and though he has to end up his formal education at the age of 12, his style of interaction quite evidently reflected the wisdom he imbibed through the experience in farming. His experience in farming dates back to 1980 and his parents are still active in farming along with him. He is entirely depended on farming as the sole means for the livelihood of his family. He owns about one ha of land and does farming in leased land for about one hectare especially annuals like vegetables and groundnut. From about 200 coconut palms he obtains about 22,000 nuts. Most of the palms belong to ECT variety obtained from progressive farmers nearby. He follows flood mode of irrigation and is planning to switch over to drip mode. He has followed a unique triangular mode of planting wherein the shade of one palm will fall on the other for a very limited time in a day. Two palms on the single point is another interesting feature in his garden. Not only that, he has raised intercrops along the interspaces harnessing maximum sun light with limited shade effect even from coconut. The crop architecture is well appreciated and experts do visit his garden to understand this unique mode of coconut planting. He favours organic farming specifically highlighting (in his own words) it as “Less income with more life” whereas the inorganic mode generates “More income with less life”. He strictly follows soil test based recommendation and makes micro-nutrient correction as per soil test value. Biomass recycling of on farm residues from coconut is his strength. He takes out big trenches and fills it up with all residues from the field included fronds, spathes etc. According to him, this method of biomass recycling ensure good microbial load in the garden and provide better aeration and improving the organic matter in the soil resulting in high water holding capacity. His irrigation schedule is therefore less frequent due to the higher retention of moisture following effective biomass recycling. Along the borders he had raised the green leaf manure, *Glyricidia* for organic manuring in the field. System diversification is another area of his interest. He has black pepper trained on coconut palms as well as on other trees. Different varieties of banana, cocoa, tamarind and sapota are his favourable intercrops planted and trained effectively to avoid shade effect. The target of continuous income through intercropping as well as vegetables from leased land is very crucial for his sustenance. He is yet to receive any recognition through awards but his innovative spacing technique as well as system diversification is worth more than an award. He is well recognized among the farmers for the management of basal stem rot disease and a leading advisor for system diversification. He distributed seedlings raised from his high yielding palms and in this way establishes a wide network with his fellow coconut farmers.

Contact: Mr. Velumoni, Thamarai-kottai, Pattukottai, Thanjavur, Mobile: 9791647494.



Mr. Gopalakrishnan

Mr. Gopalakrishnan, aged 68 is an innovative coconut farmer. He has more than 40 years of experience in coconut. He owns 7.5 acres of land and has been cultivating banana, pulses such as green gram, black gram as intercrops. He also cultivates fodder sorghum for his cattle (five animals) in two acres. He has 520 ECT palms spaced as per standard recommendation. A deep pit of 90 cm<sup>3</sup> was taken and filled with organic residues before planting the seedlings. He has good water source and therefore he provides water through channel based flood irrigation once in ten days. However, he is quite conscious about optimal water requirements and experimented to prove that pot irrigation at palm basin was found sufficient to withstand drought during summer period. On a good organic base (FYM and Neem cake) macro as well as micronutrients is applied based on soil test. He adopts good mulching technique by using all farm residues especially coconut fronds. He was very successful in raising *Pleurotus* sp. mushroom utilizing coconut wastes and converting into nutrient supplementing food source. On an average he harvests about 1 lakh nuts per year averaging about 190 nuts/palm/year. According to him, pigwash is very useful for the successful growth of coconut palms especially at the juvenile stage. He has made an innovation by slight removal of bark of about 40 years old palm and wrapped the wound with coir pith compost using a bamboo basket. He could observe initiation of roots in two months period and after good root formation, the trunk below the root formation was cut and planted in the soil. He found that the palm could set precocious bearing and the palm is still bearing in his field. In addition, high yielding palms in his garden were identified and seed nuts were collected for progeny multiplication. A small nursery was set up in front of his house. The diversity in crops and innovation in planting is worthy of emulations. As a president of Amanathankottai coconut producer's society, he has taken greater strides to reach out his pattern of farming to others.

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Contact: Mr. Gopalakrishnan, Amanathankottai, Pudukkotai, Mobile: 8754494225.



*Mr. N. Kathiresa Prabhu*

Mr. N. Kathiresa Prabhu is a large scale farmer in Kottur and a graduate in electrical engineering. He has more than 43 years of experience in farming and his livelihood security solely depended on farming. He daily visits his farm and assigns duties to the permanent labourers. He supervises the farming operations with utmost dedication and ensures the timely completion of assigned works. According to him, even a slight delay in farming operation will lead to tremendous setback in farm output and therefore insists upon timely farming operation. He owns 350 acres of land comprising of 5000 palms, 200 tamarind trees, 900 mango trees, 1500 silk cotton and three acres of mulberry. West Coast Tall palms are more than 40 years old yielding 70,000-80,000 nuts per each harvest. He has more than 80 cattle which give 12,000 litres of milk weekly. Milk is sold out @ Rs. 24/litre. Due to the water scarcity he has laid drip lines irrigating 50 litres once in four days. He regularly undertakes soil test and based on the expert recommendation nutrients are applied. The farm yard manure produced is recycled into the farm. The multi-enterprise system (tamarind, mango & silk cotton) fetches him continuous income and provides continuous employment to workers in the farm. According to him, soil testing is the key aspect and nutrients should be delivered only on soil test basis so as to avoid any excess or deficit. The most enterprising activity in his farm is the sericulture and moriculture components. With continuous supply of mulberry leaves from his farm, silkworm dfls are obtained from nearby sericulture unit. In a period of 29 days one cycle is completed and 150 kg cocoon sold out from a mere investment of Rs. 400 for about 500-600 dfl. This is being traditionally cultivated for more than 17 years in the farm. Infrastructure is very limited but is a learning experience for other farmers, students and other prospective entrepreneurs. He has about 50 labourers to assist him in all farming operations. His farm is a learning experience for integrated and enterprising farming through milch animals and sericulture. He shares his experiences to other farmers and also to agricultural students. He has constructed a small room for the students to stay and learn the entire process of sericulture for a period of 15 days. He has excellent relationship with Horticultural College and Research Institute, Periyakulam and visits frequently.

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Contact: Mr. N. Kathiresa Prabhu, ADJ Farms, Kottur, Theni, Mobile: 9842172590.



Mr. Rasool Mohideen is a progressive farmer in coconut based cropping system in Dindigul. He owns 60 acres in which coconut is grown in 35 acres with spacing of 25 x 25 ft to accommodate more number of intercrops. In his farm, coconut (2850 nos.), arecanut (4000 nos.), nutmeg (250 nos.) and black pepper (3000 nos.) are accommodated following cropping system approach. He strongly believes that inclusion of mixed crops for enhancing the productivity and profitability from unit area using locally available resources. According to him, nutmeg and black pepper are ideal intercrops in coconut garden as they are perennial and suits to coconut eco system. These crops are maintained with minimum investment for realizing additional income regularly over the years. Soil fertility is maintained by effective recycling of the biomass generated within the farm by mulching, composting, husk burial techniques etc. He adopts integrated nutrient management with more emphasis on application of organic manures coupled with judicious use of chemical fertilizers. Knowing the importance of water, he has been following the drip irrigation in entire farm. He is able to manage the farm with fewer incidences of pest and diseases in coconut and component crops. He is producing elite and quality coconut seedlings and on an average he sells 20,000 coconut seedlings in a year by which he earns an additional income which is invested again in the business. Productivity of coconut realized from his farm is 120 nuts per palm per year which is sold as copra for higher price. He has started mobilizing farmers for starting a small scale agri-business in coconut in a cluster mode. He has attributed his success in coconut farming to intercrops and involvement of family. His two sons and one daughter are showing keen interest in farming and wholeheartedly support him. He never faced a problem of price fluctuation in coconut since he has intercrops through which he has been able to sustain the farm income.



Mr. R. Pavalarajan

Mr. R. Pavalarajan a famous horticulturist doing farming since 1974 which helped him to gain enormous experiences and to reap monetary benefits. He is passionate towards doing experiments especially in plant geometry, cultivation of intercrops, intercropping operations etc. He owns 40 acres and varieties like WCT, T x D, Chowghat Orange Dwarf, Malayan Yellow Dwarf, Chowghat Green Dwarf, Laccadive micro are grown. He has adopted paired row system of planting (15 x 15 ft) and leaving a spacing of 40 ft between two paired rows of planting to accommodate 140 trees per acre which is almost double the recommended spacing. This system was followed to accommodate more number of intercrops, easy intercropping operations and harvesting. Subsequently he found that palms planted in southern side performed better than the palms which were planted in northern side because of poor availability of sun light. Yield of 16000 nuts were realized initially started to decline over the years to 12000 nuts. Based on the results, he changed his planting system again in paired row system (18ft x 18 ft) leaving a spacing of 36 ft between two paired rows to accommodate 100 trees per acre in the year 2003. In this system he could realize 12,000 –13,000 nuts per acre on a sustainable basis. In the year 2005 he started another system of planting in 33 acres with a spacing of 21ft x 28ft wherein he accommodated 80 trees per acre. Yield of 10000 nuts was realized from this system of planting in a year. Overall, he strongly recommends paired row system (18ft x 18 ft) with spacing of 36 ft between rows for including intercrops. For doing all these experiments he had support from his parents, scientists and friends. He knows the importance of water for enhancing the productivity of coconut for which he started irrigating coconut palms at the restricted root zone in basin without wasting water. This helps him to provide sufficient water to ensure a good harvest and remaining available land he grows short duration crops. Inputs viz., organic manure @ 10 kg, urea @ 2 kg, super phosphate @ 3 kg and muriate of potash @ 3 kg are applied in four equal splits per palm per year. Neem cake is also applied @ 1 kg per palm in an alternate year. Tank silt is applied @ 100 kg per palm per year to enrich soil fertility. Mulching is practiced with the shredded materials of coconut leaves and other crop wastes to conserve soil and water. Pests and diseases are managed with prophylactic measures. Biocontrol agent, *Pseudomonas fluorescens* is locally isolated in his own laboratory and cultured for the use in coconut farming. He also supplies *Pseudomonas* to the neighbouring farmers for doing experiments. Banana is grown as intercrop in his coconut garden and his experience says banana as a best intercrop in Dindigul area. He disseminates his farming ideas/experiences through social media including personal website. He strongly believes that innovations is the key to success which warrants efforts from researchers, farmers and other stakeholders for better farming in perennial crops like coconut.

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Contact: Mr. R. Pavalarajan, Planter, Main Road, Pattiveeranpatti, Dindigul, Mobile: 9442267345.



*Mr. Gurulingaiah, K. P.*

Mr. Gurulingaiah, K. P., aged 32 years, young and energetic MBA graduate is doing coconut based agri business. His family consists of six members including his parents, wife and two children. He has 10 years of experience in farming. His main occupation is farming, and production and marketing of virgin coconut oil (VCO) through his own company called Swadeshi Disha. He has Tiptur tall variety of coconut in 23 acres, Mohitnagar and Thirthahalli varieties of arecanut in 13 acres, Banana in 10 acres, 400 teak trees and 50 black pepper vines in his total 25 acres of farm. He produces superior quality planting materials of coconut from his own garden by selecting elite palms as mother palms. He is an early adopter of technology, his father adopted drip irrigation in their garden as early as 1991. In his farm 95 per cent of irrigation is done through drip system. To conserve the soil and water in his farm he has made bunds, and practices mulching. He follows organic farming and applies only organic manures in his garden. For coconut he is applying FYM @ 40 kg/palm/year and for arecanut he is applying FYM @ 20 kg/ palm/ year. Mite, stem bleeding and *Ganoderma wilt* are some of the pests and diseases observed in his garden. According to him, pest and disease incidence was reduced after following organic farming. He adds value to coconuts by producing and selling Virgin Coconut Oil through his own company called Swadeshi Disha wherein about 40-50 litres of VCO is produced daily from 500 coconuts which is sold at a price of Rs. 350 per liter. According to him, the nuts harvested during October to February months yield more VCO. He harvests around 2 lakh coconuts from his 23 acres coconut garden and gets income of Rs.16 lakhs. He gets around Rs. 5 to 6 lakhs from 35 quintals of processed arecanut. He also gets 25 t of banana from his garden. He has regular contact with Krishi Vigyan Kendra, Kandali, Hassan and Horticultural Research Station, Arsikere for updating himself with the latest technologies.

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Contact: Mr. Gurulingaiah, K.P., Upparakalenahalli, Madanahalli, Javagal, Arsikere, Hassan, Mobile: 9886226292.



*Mr. H. K. Manjunath*

Mr. H. K. Manjunath aged 58 studied upto PUC. His family includes home maker wife and MBA graduated son, working at Bengaluru. He has 33 years of experience in agriculture. He left the state government job to start farming for which he was criticized by his family members, but when he developed his farm by adopting innovative technologies, people appreciated his courage and achievements in agriculture. He has been growing fruits and spice crops along with coconut in a sustainable and profitable manner. He is actively involved in agriculture including dairy along with farm laborers. Mr. Manjunath owns 16 acres of farm land. He is having 300 coconut trees of Tiptur Tall variety, 300 mango trees of different varieties like, Alphonso, Mallika, Badami, 100 sapota trees of Kalipatti and Cricket ball varieties and 500 nutmeg plants of local variety. These three crops are grown at a spacing of 18 x 18 ft. He also has 30 tamarind trees. Besides these perennial crops, banana was also cultivated as intercrop. About 2500 arecanut palms of Mangala, Sumangala, Mohitnagar and local varieties are mixed cropped in coconut garden with spacing of 9 x 9 ft. He has small nursery in his farm and he mainly produces and sells superior quality planting materials of coconut and arecanut which is in high demand. He has 4 bore wells in his farm for irrigation purpose. Irrigation is done through drip and sprinkler system. Eighty percentage of his farm irrigated through drip system and 20 per cent through sprinkler. To conserve the soil and water in his farm, he is doing mulching, intercropping and cross ploughing. He is recycling the biomass available from his farm by mulching and allowed to compost in the field itself. He applies only organic manures to his farm. He is applying green manures, compost and neem cake to all the crops. He harvests 30,000 coconuts from his 300 coconut palms annually. He gets around Rs. 1.5 lakhs from mango, sapota and tamarind; and from banana Rs. 3.5 to 4.5 lakhs. From his 2500 arecanut trees, he obtained 200-250 quintals of fresh nuts and sold at the rate of Rs. 3000 per quintal. In his nursery every year he is producing around 6 to 7 thousand coconut seedlings and 22 to 23 thousand arecanut seedlings selling at a rate of Rs. 250 and Rs. 30 per seedling, respectively. Daily around 20 litres of milk is sold from his dairy unit. Farm produce is mainly marketed through APMC, Arsikere, doorstep local merchants and milk through Milk Producer's Cooperative Society. He is the pioneer in initiating a dairy unit at Hobli level. He has adopted drip irrigation in his farm 24 years ago. He received many awards/recognitions for his achievements in agriculture. Krishi Pandit Award, District Level Rajyotsava Award, and District Level Progressive Farmer Award in 2010, Krishi Mela Award instituted by UAS, Bengaluru in 2011 and Best Horticultural Farmer Award by UAHS, Bagalkot in 2014 are a few to mention. He has very good contact with research and extension agencies like Horticultural Research Station, Arsikere, Krishi Vigyan Kendra, Hassan, University of Agricultural Sciences, Bengaluru etc. to get updated with latest developments in farm technologies. He was the Director and President and presently Member of KMF dairy (MPCS), Former Director and present member of Coconut Producers Federation under CDB, Member of District Level Parisara Premi Federation. He experiments new technologies in his farm and disseminate to other farmers. He grows different varieties of arecanut, drumstick and mango to experiment the performance of these crops as intercrop in coconut. He is a regular resource person in trainings, seminars, workshop etc. on coconut cultivation.

Contact: Mr. H. K. Manjunath, Maladevihalli, Sankihalli, Javagal Hobli, Arsikere, Hassan Mobile: 9986884490.

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Growing crops in accordance to the demand in the market is very essential to ensure higher returns from farming. Mr. Bijjall, G. is one such farmer who is growing variety of fruit crops such as Mango, Sapota and Banana along with coconut. He is 38 years old and a graduate in arts. Mr. Bijjall owns 55 acres farm with coconut in 34 acres. He has 1300 Tiptur Tall variety of coconut grown at a spacing of 32ft x 32ft. He is growing Kalippatti and Cricket Ball varieties of sapota, planted at a spacing of 32ft x 32ft in 19 acres as intercrop with coconut. Mango varieties like Neelam, Badami and Raspuri are intercropped in sapota cropping system. He also has Grand-9 variety of banana as sole crop in 2.5 acres. He is following drip irrigation system. Moreover, he has constructed bunds all along the border to conserve water and soil. Mulching is followed in coconut garden to conserve water and to avoid leaching of nutrients. For coconut he is applying ammonium sulphate @ 0.5 kg per palm, zinc sulphate and coconut special @ 200g per palm, single super phosphate @ 1 kg per palm, muriate of potash @ 0.75 kg per palm. In the case of banana he applies urea, muriate of potash and single super phosphate. The crop residues of coconut are mulched to the basin of the palm and the crop wastes are ploughed back to the soil after the harvest. He also grows green manure crops like sunhemp and daincha and ploughed back to soil before they flower. He harvests 1, 90,000 coconuts which gives him a return of Rs.17,10,000. He gets Rs.12 lakhs and Rs.10 lakhs as returns from sapota and banana, respectively. The crop diversity provides cushion effect from the price fluctuations of the market. He markets his farm produce mostly through local dealers or onfarm marketing. Comprehensive drip irrigation system to all the crops and proper nutrient management are the noteworthy features of his farming. According to him, in cropping systems attention to individual crops and management of key inputs in every crop is essential for the sustained yield of main and component crops. Being young and enthusiastic, Mr. Bijjall gathers knowledge on farming from his fellow progressive farmers, subject matter specialists of Krishi Vigyan Kendra, Mysuru, ICAR-Indian Institute of Horticultural Research (IIHR), Bengaluru, and media. He is member of Basaveshwara Coconut Producer's Society and Mysuru Taluk Farm Produce Marketing Co-operative Society.

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Mr. Mohana, hails from Kendalli village of Mandya believes that crop diversification is the key strategy to sustain farming in the present regime of price fluctuations and market related risks. His farm is situated 109 km from Bengaluru which is the hub for his produces and started to grow fruit crops. In his 40 acres of land, he grows crops like, coconut, guava, mango, papaya, banana and brinjal. Mr. Mohan is 62 years old studied upto SSLC and has 30 years of experience in farming. He has 500 local variety of coconut in 10 acres of land at spacing of 9 m X 9 m. He has Allahabad Safed variety of guava in two acres at spacing of 6 m X 6 m which is attractive with good yield. Mango varieties like Totapuri, Malgoa and Raspuri are also grown in 20 acres at spacing of 7.5 m x 9 m. Engrossed by the demand for Red lady variety of papaya, he planted them in 10 acres at a spacing of 2.1 m x 2.4 m. About 300 Elakki variety of banana are grown at a spacing of 2.1 m x 2.1 m. Brinjal is grown in one acre. He has adopted mango-guava, mango-sapota and mango-papaya cropping systems. Banana is grown as an intercrop with mango which is in juvenile stage. He is also maintaining three cows and 10 sheep. He has adopted drip irrigation system in his farm. He has five bore wells as sources of irrigation water. Trenches are formed in the interspaces and bunds are constructed on the boundary as a measure of soil and water conservation. The coconut palms are applied with farm yard manure @ 12 t per acre, one kg potash per palm, one kg salt per palm and bio-compost @ two kg per palm. Soil test is done once in three years. Crop residue and soil are put in alternate layers and covered with soil and allowed to compost. Horse gram is grown in the interspaces of coconut and is incorporated into the soil. The nut and fruits are sold from his farm-gate or directly to the market in Bengaluru. He harvests 35, 000 coconuts from 500 palms and gets an income of Rs. 3 lakhs. Mango yields about 2.5 t which are sold at Rs. 40/kg. He also harvests 4 t of guava which is sold at 40 per kg. He gets an income of Rs. 15 lakhs from his farm land. He has good knowledge of the market and reiterates 'crop diversification is the need of the hour'.

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Contact: Mr. Mohana, Kendalli, Nagamangala, Mandya, Mobile: 9448246262.



Mr. Mahadevayya, 63 years of age, a successful farmer maintains coconut based cropping system. He has 10 acres of irrigated land with coconut and arecanut as main crops. Cocoa is planted as mixed crop in the coconut garden. Total, he grows 300 Tiptur Tall coconut palms at spacing of 9x9 m and arecanut of Hirehalli Tall variety between each row of coconut. Four hundred fifty cocoa plants has been planted in the inter space of garden. Besides these perennial crops, banana is also cultivated as intercrop in a small scale. Water source to the garden is bore well and Hemavathi river water, supplied by Thumkur water supply unit. He irrigates the crops during summer months through water channels made in the garden. As a source of fertilizer, he applies poultry manure to the palms at the rate of 100 kg/palm annually. Coconut leaves and husks are used for mulching the basins. Only slash weeding is followed to control weeds. In Mahadevayya's farm, pest and disease incidence is very low. He has an excellent uniform population of high yielding Tiptur Tall coconut palms. On an average, Mr. Mahadevayya is able to harvest 200 nuts per palm annually. The selected nuts produced in his farm are taken by Coconut Development Board for seedling production for the past four years and remaining nuts are used for ball copra preparation and sale in Tumkur local market. Average yield obtained from arecanut is 4 kg dry kernel per palm. From cocoa, the average yield is about 1 kg dry beans per tree. In case of banana, he gets a bunch yield of 35 kg per plant. Mr. Mahadevayya earns an annual income of Rs. 10 to 12 lakhs by following Coconut based farming. He is supported in the venture by his wife, son and daughter in law, who share his passion for agriculture. The scarcity of agriculture labour is a major bottle neck, feels Mr. Mahadevayya. He has drastically reduced the area under intercrops in his coconut garden, due to labour shortage.

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Contact: Mr. Mahadevayya, Honnenahalli, Tumkur, Mobile: 9448711193.



*Mr. Vijaya Kumar*

Mr. Vijaya Kumar from Honnenahalli village grows fodder, spice and fruit crops in interspaces of coconut in his seven acres of land. His coconut plantation comprises of 300 Tiptur Tall palms, planted at a spacing of 30x30ft. About 600 arecanut palms of Hirehalli local is planted in between coconut rows at 10x10 ft spacing. He has utilized interspaces available in the garden by planting cocoa, nutmeg, banana, papaya and guava as intercrops. He is the first farmer in the area to successfully cultivate nutmeg as an intercrop in coconut plantation. On an average, coconut palm yields around 180 nuts which are mainly sold as ball copra. From arecanut, he gets a yield of 2.5 to 3 kg dry kernel per palm. Whereas from cocoa, he gets nearly 1 to 1.5 kg dry beans per tree. He produces 1.5q nutmeg and sells in the local market at the rate of Rs. 300 to 400 per kg. He grows around 800 elakki banana which yields more than 35 kg bunch a plant. Papaya and guava are sources of additional income along with other major crops. He is rearing malanad gidda variety cows and the milk produced is sold in KMF dairy and cow dung is utilized for composting. He has a biodigester unit in his garden, where farm wastes are deposited along with cow dung and water. After complete decomposition, liquid extract from the unit is stored in a separate tank adjacent to the bio-digest unit. Compost produced is applied to the palms and the liquid extract is supplied to the garden along with irrigation water. Fallen leaves are used as mulch in the crop basin. He irrigates the garden once in 10 days during summer months by sprinkler irrigation. Mr. Vijaya kumar, produces planting material of coconut and arecanut in his garden and sells each coconut seedling at the rate of Rs.100. He also produces seedlings of other fruit crops in his garden for sale as well as for sharing with his fellow agriculturists. On an average, he earns Rs. 14 to 15 lakhs annually from agriculture. According to him, if he was following coconut monocropping, the income from his farm would have been very less of what he is earning now from integrated farming system.

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Contact: Mr. Vijaya Kumar, Honnenahalli village, Tumkur, Mobile: 9844730593.



Mr. Neelakanta Murthy is a post graduate in agriculture from University of Agricultural Sciences, Bangaluru. After completion of studies, he joined Canara Bank as Assistant Manager. However, he was not satisfied with the nature of work as he realized that his real interest was in agriculture. So, he has resigned the job and purchased 20 acres land in Nandihalli village in Tumkur. Out of this, he has planted coconut and arecanut in 8 acres, along with Coffee as an intercrop. Remaining area is with, number of fruit crops, spice crops, medicinal trees, medicinal and aromatic plants and forest trees. He grows 400 Tiptur Tall coconut plams at 25 feet spacing and Hirehalli local variety of arecanut at 9 feet spacing in between coconut rows. On an average, each coconut palm yields 150 nuts annually and from arecanut, he gets annual yield of 3 to 4 quintal. After every 4 rows of coconut, fodder grass was grown in trenches for feeding dairy cattle. Other than these crops, he grows more than 400 plant species including Mango, Banana, Amla, Jamun, lemon, jack fruit, Bread fruit, Butter fruit, Drum stick, Curry leaf, Nutmeg, Turmeric, Asparagous, Aloe vera, Chitramula, Brahmi, Madhunashini, Edward rose, Lemon grass, Vetiver, Teak, Cassurina, Mahagony, Sima ruba, Sandal wood and Red Sandal wood etc. Mr. murthy purchased this land during 1993. That time, he has not faced any water problem to establish plantation. But, since last few years, his farm faced severe drought. So he established 20 rain water harvest units to irrigate the farm during summer season. He adopts auto starter sprinkler irrigation system to irrigate the crops. He provides only organic fertilizers like FYM and vermicompost to the crops and dry leaves as mulch in the crop basin. So far, pest and diseases are not a serious problem. Mr. Murthy has vermicompost and compost preparation unit in his farm and he is able to sell nearly 2 tons of Vermicompost annually. He owns agro based industry, named ODEKAR products. He is producing arecanut leaf plates of different size and shapes and marketing to local markets in Karnataka as well as in Tamil Nadu. Selected, good quality plates were packed using para film sheet for tapping the premium price in the market. He prepares Virgin coconut oil using coconuts from farm. Using medicinal and aromatic plants available in farm, he produces many products like natural soap, shampoo, hair oil, face pack, tooth powder, pain relieving oil, moisturizing cream, lip balm, Ayurvedic churna, Amla candy etc. He employed many of the local people in his agro based industry. Recently, he has applied for patenting his trade mark ODEKAR. On an average, he is earning Rs. 10 to 12 lakhs from agriculture and more than 10 lakhs from his agro based products. He is supported in his venture by his wife Mrs. Anitha, who also has a passion for development of value added products. In fact, it is a family venture with active participation of his son, who is an engineering graduate and his daughter in law. Mr. Murthy, organizes many training programmes to the farmers and local people for better utilization of farm and forest produce and to produce many organic products in collaboration with Karnataka State Forest Department. He has attended many training programmes at CFTRI, Mysore, related to the production of value added products. He is the Tumkur district director for State Savayava Krushi Parivara, one of the state level organic federations. He is in continuous touch with many government institutes including UAS, Bengaluru, ICAR- IIHR, Bangalore and ICAR-CPCRI Kasaragod. He is actively involved in social work under ODEKAR foundation for the social development of his village. He has bagged many awards for his work and holds “Nandihalliya Udyamasheela Dampathigalu” title from villagers.

Contact: Mr. Neelakanta Murthy, Nandihalli, Tumkur, Mobile: 9448741129.



*Mr. H. J. Padmaraju*

To become financially successful, farmers need to involve personally in farming and plan to cultivate the right crops that suit the soil type and current market trend. Only then his economic condition can improve. Mr. H. J. Padmaraju, a small farmer having 2.3 acres land, profitably grows coconut, arecanut as major crops with cocoa, black pepper and banana as intercrops. This coconut farmer has planted 85 Tiptur Tall coconut at 10x10 m spacing in the year 1993. These coconut palms are yielding in the range of 150 to 200 nuts with copra of 220 to 320 g per nut. In interspaces of garden he has planted cocoa, gets 2 kg dry beans per plant and grown Black pepper vines purchased from Spice board, Mudigere trailed on coconut and arecanut palms. On an average, black pepper yields 4 to 5 kg berries per vine. Mr. Padmaraju planted 550 Hirehalli local arecanut between each row of coconut and yields 10q chali annually. Similarly, he grows elakki banana and gets upto Rs.75/kg in local market. He is also producing coconut seedlings from selected 30 mother palms in his garden. Annually, he is producing more than 800 coconut seedlings which he sells at the rate of Rs. 175 per seedling. The planting material is much sought after by farmers, who are booking their requirements more than a year in advance. He is very careful in selection of seed nuts. Mr. Padmaraju emphasized that he collects seed nuts only from selected high yielding mother palms, which produce at least around 300 g copra. He maintains nursery all around the year, efficiently utilizes the harvested seed nuts from each harvest. From his 2.3 acres land he is able to earn more than Rs. 3.5 lakhs as annual income. He stresses that in his farm all the crops are grown organically, applying FYM as a source of organic manure. He grows Glyricidia as a natural fence all around the garden and uses the leaves and shoots as green manure and for mulching coconut basins. The plantation is irrigated only during summer months using water from bore well in his farm. Apart from agriculture, he is a journalist and writes articles related to agriculture in news papers. He has a passion for documenting information on agriculture and allied subjects. For his agriculture and social work Mr. Padmaraju was awarded Dashamanothsava prashasthi from Centre for Agriculture Media.

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Contact: Mr. H.J. Padmaraju, Thovinakere, Tumkur, Mobile: 9945323787.



*Mr. T. R. Vijayakumar*

Mr. T. R. Vijayakumar is a well known progressive farmer and a graduate in fisheries. He has a farm land of 100 acres with coconut and arecanut as the main crops. He is cultivating a number of horticultural crops as intercrops in coconut and arecanut plantation. Mr. Vijayakumar has 3000 coconut trees including new plantations of Benalium, Tiptur Tall, Gangabondam, Gangapani and COD varieties in an area of 2.5 acres each. All the palms are spaced at a distance of 25x25 feet. He has established coconut nuclear seed garden in 10 acres with the assistance of the Coconut Development Board. Out of 3000 coconut palms, 750 palms are being used for tender nut production. Nuts from remaining palms are used to produce ball copra. On an average, each palm yields 150 nuts per year. He has collected 20 varieties of coconut from different parts of the country including Andamans and planted in his farm. In 4 acres land, he has planted coconut seedlings in an experimental manner with two seedlings planted in a single pit with one each of COD and Gangabondam but with normal spacing of 25x25 ft between pits. Arecanut variety Hirehalli Tall is cultivated in 16 acres, planted at 9x9 ft spacing and yields 2.5 to 3 kg chali/palm. Farmer utilizes all the interspaces by growing crops like cocoa, black pepper, vanilla, elakki banana, orange, lemon, papaya, sapota, mango, guava, jackfruit, amla, bale, wood apple, custard apple, jamun, karonda, drum stick, jasmine and bird of paradise. Cocoa grown under coconut and arecanut shade yields 1.5 to 2 kg pods/tree/year. Black pepper is used as a mixed crop on some coconut palms and on all arecanut palms. He has tried many crop combinations such as coconut and beneshan mango, coconut and balaji variety lime, coconut and guava on larger scale. "Among the combinations we have tried, coconut with lime is more profitable" says Mr. Vijayakumar. He has a collection of more than 10 varieties of mango, jackfruit and lime in his farm and also grows silver oak trees all around the farm as border crop, which is valued for timber. The garden is manured with composted poultry manure and cow dung at the rate of 100 kg/palm two times a year. The fallen leaves of coconut and arecanut are used as mulch in the basin. Water source to the farm is bore wells. Irrigation to the plantation is done by sprinkler irrigation system during summer season. Mr. Vijayakumar has a poultry unit in an area of 20 acres as a joint venture with Godrej Company and produces 30 to 40 thousand eggs a year which are taken by company. He has established 12 sheds to rear chickens and maintains the entire unit. The poultry droppings were used as a source of organic manure in his plantation. During his daily visit to his farm, he collects fruits and provides it for sale in local market. This gives him regular income for meeting the daily expenditure. "The income generated from the intercrops is more than sufficient to meet the cost of maintenance of the cropping system. The farmer should not allow any produce to be wasted" adds Mr. Vijayakumar. Yearly, he is earning more than rupees one crore from agriculture. His opinion is, with proper maintenance and more involvement, it is possible to earn Rs. 2 to 3 crores income every year.

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Contact: Mr. T. R. Vijayakumar Thovinakere, Tumkur, Mobile: 9844460909.



Hard work, dedication and innovative thinking to make use of available resources for getting maximum benefit is practiced by few farmers. Mr. Rajesh Naik converted 120 acres of barren land into a fruitful, self sufficient organic farm popularly known as ODUR farm 25 years back. This land was barren with lateritic rock structure, without even a single tree and water sources. But now, the situation is entirely different, with a man made 2 acres wide and 60 feet deep lake filled with water all through the year and lush green vegetation surrounding the lake. Odur farm is organically managed, cultivating coconut in 40 acres, arecanut in 20 acres and having intercrops of fodder grass, banana as well as 4000 black pepper vines. The farm also has more than 20 varieties of Mango, Cashew nut, Turmeric, Jackfruit, Sapota, Papaya, Guava, Lemon, many underutilized and exotic fruit trees, as well as commercial cultivation of vegetables. The farmer has got 2000 TxD coconut palms procured from CPCRI, Kasaragod, yielding 100 to 250 nuts per palm which are mostly used for the production of copra and coconut oil. Recently, he has started extracting neera from 40 palms and also produces coconut sugar. He prefers to import hydraulic climbing machines to harvest coconuts as well as tap neera in order to overcome labour problem. Local arecanut palms are grown in 10 acres and 4000 palms of mangala have been recently planted in another 10 acres. He grows 4000 black pepper vines using coconut and arecanut palms as standard. Besides, these plantation crops, he grows bhendi in grow bags and capsicum in thermocole containers, under shade. Cowpea and ridge gourd are also grown on supporting trailers. The fruits produced in farm, are not commercially sold and also attract birds and animals to increase the fauna population in the farm. Mr. Naik began his farming activities by establishing a dairy farm. Presently, his dairy farm has around 150 cows of different breeds including HF, Jersey, Ghir and Dakshina Kannada local. Daily production is 650 to 700 litres of milk, with 1000 litres during peak season which is regularly taken up by the Karnataka Milk Federation. He has a grass cutting machine that provides the ample supply of chopped green grass to the cattle. “We grow the Bajra Napier fodder grass under coconut plantation and cut once in 25 days to feed the cattle” informs Mr. Rajesh, “and along with grass, daily we feed mixture of rice, ragi and maize flour with groundnut husk powder and ground nut cake which is mixed in correct proportion to ensure quality concentrate feed for the cattle”. The cow dung and urine along with the wash water are collected in tank, to generate methane, which is used to run a 60 KV generator that provides electricity to run the whole farm. After generating methane, left over slurry is pumped to plantations, at the rate of 25 litres a palm. Daily, around one lakh litres slurry is generated in the dairy farm. He uses cow urine with neem cake to generate organic pesticides to take care of the pests and diseases in the farm. Poultry droppings are composted in the farm to produce poultry manure and applied to the palms @ 5 to 6 kg per palm per year. Entire plantation is provided with drip bubble irrigation facility and irrigation is provided during February to June months. On an average, Mr. Rajesh is earning Rs. 50 to 60 lakhs each year without much input from outside. His farm serves as a study centre for the students of different schools and colleges in and around Mangalore.

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Contact: Mr. Rajesh Naik, Ganjimata, Mangalore, Dakshina Kannada, Mobile: 9845083470.



Growing diverse crops based on the demand in the market is very essential to get higher return from the farm land. Mr. G. Ramesh is one such farmer who is growing variety of crops especially fruits, vegetables and flower crops with coconut. He is 46 years old and a graduate in sericulture. He lives with his wife, son and two brothers in Bengaluru and commutes daily to the farm land. Mr. Ramesh maintains 20 acres farm with coconut in 10 acres. He has about 400 Tiptur Tall variety of coconut, of which 250 are yielding palms. He is following coconut-mango-maize cropping system in 3 acres, in which coconut is planted at 9m x 9m spacing, mango at 7.5m x 7.5m, and maize in the interspaces. Coconut-sapota-papaya-mango system is also followed in 2 acres in which coconut is spaced at 9m x 30m, mango at 7.5m x 7.5m, sapota at the centre of four mango trees and papaya at 2m x 2.1m spacing in the interspaces. He is also practicing coconut-mango-sapota-marigold system. He also has coconut-mango-sapota-ginger system in 2 acres, coconut-mango-sapota-chrysanthemum intercropping system in 0.75 acre and coconut-mango-sapota-tomato system in 0.75 acre in which coconut, mango and sapota are grown in the similar spacing as mentioned above, and ginger, chrysanthemum and tomato are grown in the interspaces. According to him, coconut-fruit cropping system involving mango, sapota and papaya is more profitable. He is growing Taiwan Red Lady variety of papaya, Badami variety of mango, Cricket Ball variety of sapota and local variety of ginger. He has also grown 300 numbers each of teak and silver oak. Two bore wells, two check dams, a well-structured pond and one water storage tank support him in irrigating the crops. He is following drip irrigation to coconut, mango, sapota and tomato and micro sprinkler irrigation system to ginger. The check dams are used to rear fishes, especially common carp apart from storing water during monsoon to irrigate the crops. He believes and practices in retaining every drop of water in his farm. Coconut palms are very well supplied with nutrients. Poultry manure, farm yard manure and tank silt are mixed equally for composting and then applied to the palms @ 10 kg per palm and also to the fruit crops. He also applies 10:20:20 @ 5kg per palm and zinc sulfate @ 10g per palm. The crop residues of coconut are mulched to the basin of the palm and the crop wastes of annuals are ploughed back to the soil after their harvest. In his farm, mite in coconut, fruit fly in mango and fruit borer in tomato needs attention. For the management of fruit fly he has installed fruit fly traps and also sprays buttermilk-neem oil which he finds effective. He has two milking cows. The cattle are fed with green fodder and maize grown in the farm apart from the cattle feed concentrate. The milk yield is about 10-15 litres per day. He has constructed spacious shed for rearing 15 Shirogi goats, 50 sheep and 2 Bannur rams. Mr. Ramesh gets good price for his produce since he directly sells to the merchants in Bengaluru. He harvests 20,000-25,000 coconuts from 250 palms and gets income of Rs. 1.5-2.0 lakhs per annum. He also gets 2.5-3.0 lakhs from mango, 4-5 lakhs from ginger, 0.8-1 lakhs from sapota, 4-5 lakhs from papaya, 1.0-1.2 lakhs from flowers and 30,000 from tomato. According to him, the income from the coconut based integrated cropping/ farming is about Rs.2.2 lakhs per ha per annum which is 58 per cent higher than the coconut monocropping system. He is the recipient of 'Best Farmer of Ramanagara district' award during 2015-16. Water storage system, check dams, irrigation method and diversified crop husbandry are the keys for his success.

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Contact: Mr. G. Ramesh, Anchepalya, Narasandra, Kudur, Magadi, Ramanagara, Mobile: 9844163848.



*Mr. Vivekananda Chakravarthy*

Mr. Vivekananda Chakravarthy, an innovative farmer who holds MBA degree but loves farming than doing a private job. He is just 26 years old, who believes in cropping and farming system as an approach to increase the income. According to Mr. Chakravarthy, adopting coconut based cropping system is the effective strategy to overcome the price fluctuation for coconut and to augment higher income from his small garden. Growing variety of crops based on the market demand in intercropping/ farming system approach is the main force behind his success. His six acres farm land has intercrops especially vegetables and banana to effectively utilize the natural resources available in the interspaces of his coconut garden in an elicited manner. He maintains 6 acres farm with 180 coconut trees of local variety grown in 3.5 acres at a spacing of 9m x 9m. He has also grown Elakki variety of banana in 1.5 acres at a spacing of 2.1m x 2.1m, a popular variety of turmeric - Prathibha in 0.5 acre at a spacing of 30cm x 50cm, onion in 0.5 acre, and tomato in 0.75 acre at 45cm x 60cm spacing, bhendi in 0.1 acre at a spacing of 30cm x 120cm and chilli in 0.5 acre at 60cm x 120cm. He follows coconut-turmeric, coconut-chilli and coconut-bhendi cropping system, thereby effectively utilizes interspaces of coconut. He grows banana, onion and tomato as monocrops with coconut as a border crop. He has one bore well which is adequate to irrigate his farm, since he is following drip irrigation system to all the crops. Moreover, he has formed bunds all along the border to conserve water and soil. Mulching is a common technique followed in coconut to conserve water and to avoid leaching of nutrients. Mr. Chakravarthy has three Holstein-Friesians in his dairy unit. So he gets 30 t of fresh dung in a year. He believes and practices integrated nutrient management system. He applies farm yard manure @ 20 kg per palm and 1.5 t per acre for banana. In addition green manure crops like Daincha and Sun hemp are grown by him and are ploughed back before they flower. He also gives Muriate of potash @3 kg and DAP @1 kg per palm during the onset of monsoon. For banana, he applies 200g of MOP per plant. He follows fertigation system for tomato, turmeric, bhendi, and chilli through which MOP, urea and 10:19:19 are applied, regularly. Mr. Chakravarthy is fairly innovative. He applies cow urine through drip irrigation system in which he gets maximum yield. The incidence of pests and diseases is lesser in coconut and vegetables, which he attributes to the proper water and nutrient management. However, mite, black headed caterpillar and rhinoceros beetle infestation in coconut, panama wilt in banana, and leaf curl in tomato prevalent in the farm. The cattle are fed with green grass and maize grown in the farm. The milk yield is about 40 litres per day from three milch cows. He harvests 15,000-17,000 mature nuts and 2,000 tender nuts which gives a return of Rs.850 per palm. He also harvests 12 t banana, 4 t tomato, 2 t chilli, 1 t bhendi, 2 t of onion, and 6 t of turmeric. He grows majority of the popular vegetables having good local market. This crop diversity makes him safer from the price fluctuations. Farm produce is mostly marketed through local dealers or on farm marketing. Net income from the coconut based integrated farming is about Rs. 1.8 lakhs per ha per annum which is 44 per cent higher than the coconut monocropping. Majority of the farm operations are carried out by himself and his family members, which eventually reduces cost of production.

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Contact: Mr. Vivekananda Chakravarthy, Venkaiyyana Chatra, Aradanahalli, Chamarajanagara, Mobile: 9743538501.



*Mrs. Prabha Nagaraj*

The woman is the backbone of agricultural work force but worldwide her hard work has mostly been unpaid. Her enlightenment will change the face of rural India. Mrs. Prabha Nagaraj is one such female farmer who loved soil and achieved success in it by adopting cropping/farming system approach. She is 70 years old studied upto 9th standard, with 40 years of experience in coconut farming. Engrossed by the opportunities and benefits of coconut based cropping systems, she grew crops like sapota, arecanut and red gram under coconut. She has 30 acres of farm land in which local variety of coconut is grown at spacing of 9x9m. She has adopted coconut-arecanut, coconut-sapota, and coconut-red gram cropping systems in 5, 4.5 and 0.25 acres, respectively. Thirthahalli local variety of arecanut is grown in the middle of two coconut palms in a row. She has also planted 100 sapota plants in the middle of two coconut palms in between two rows at spacing of 9x9 m. Red gram is grown in between two rows of coconut palms. She has also grown banana in 1.5 acres at 2 x 2m spacing. Coconut seeds are harvested from elite mother palms and raised in nursery. She raises about 6,000 coconut seedlings every year and this year she has sold seedlings at a price of Rs. 80 per seedling. She takes much care to ensure quality of seedling, right from selection of nuts to selling of seedlings. Mrs. Prabha has 5 bore wells and two open wells to irrigate 30 acres coconut garden. She is following drip irrigation to coconut, arecanut and sapota. Bund formation along the borders of each plot and mulching the basin of coconut with coconut leaves has been done by her to conserve water and soil. She practices integrated nutrient management. Nutrients like neem cake @ 5 kg, FYM @ 10 kg, MOP @ 2kg and salt @ 2 kg are given to coconut palms. Wide basins are opened every year and the nutrients are applied and then covered with soil and then mulched. To feed nutrients to banana she has adopted ventury system of fertigation through which she applies 19:19:19 and muriate of potash. Green manure crops like Sesbania, Daincha and Horse gram are sown during the onset of monsoon and ploughed back to the soil before they flower. "Mite, stem bleeding and barren nuts are of concern in coconut" says Mrs. Nagaraj. To manage stem bleeding she has scooped the infected portion and smeared with coal tar. She is growing fodder grasses under coconut for feeding three each of heifer and milking cows. The milk yield is about 25-30 litres per day. Cattle feed concentrates and paddy straw are also given to the cattle. The farmer sells majority of her agricultural commodities directly from her farm-gate. She harvests about 70,000 nuts in a year from 1000 palms and earns income of Rs.5.6 lakhs. The annual return from dairy, arecanut, sapota and banana is Rs. 1.4, 0.33, 0.25 and 2 lakhs respectively. She propagates the success of cropping system to farming community.

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Contact: Mrs. Prabha Nagaraj, Ayenahalli, Kadakola, Varuna Hobli, Mysuru, Mobile: 9480211779.



Mr. P. N. Chinnaswamy believes in high yielding varieties and quality planting material of coconut to get higher productivity. Riveted by the yield potential of D x T hybrids, he planted 450 hybrids and 250 COD varieties in his farm. He is 67 years old, studied upto SSLC, but has 40 years of experience in farming. Mr. Chinnaswamy lives with his wife, son, daughter in law and grandchildren. He is the Honorary President of Raitha Sangha (Farmers' group), ex-president and presently, member of coconut growers association and member of HOPCOM, Chamarajanagara and President of Milk producers cooperative society, Basavapura. In his 35 acres of land, coconut is grown in 20 acres, arecanut in 6 acres, banana in 3 acres, turmeric in 5 acres, tomato in 2 acres, cocoa in 1.5 acres and black pepper is grown in 3 acres. It is worthwhile to note that he has successfully grown cocoa and black pepper which are predominantly the crops of humid tropics, in a place where humidity is lesser and rainfall is low. He visits gardens of progressive farmers of different regions and research institutes to learn new things in farming. He has varieties like WCT, D x T and Chowghat Orange Dwarf. He follows coconut-arecanut mixed cropping system in 1.5 acres, coconut-cocoa system in 1.5 acres, coconut-black pepper in 3 acres and coconut-turmeric intercropping system in 5 acres. He also has 2 each of local and Holstein-Friesians. Introduction of cocoa to his farm and post harvest processing signifies his experimentation in cropping system in a place where such system is uncommon is noteworthy. Mangala variety of arecanut was procured from CPCRI, RS, Vittal and was planted at 2.4 m x 2.4 m spacing. Mr. Chinnaswamy is growing CO-1 variety of turmeric as intercrop with coconut which is in juvenile stage. Black pepper is trailed on coconut palms. Mr. Chinnaswamy has 7 bore wells and a water tank constructed with the aid of Horticulture department. He is following drip irrigation to coconut, banana, turmeric, black pepper and cocoa. Bund formation along the borders of each plot, trenches in the interspace and mulching the basin of coconut with coconut leaves has been practiced to conserve water and soil, and also to check leaching of nutrients. He has grown COD variety of coconut in sloppy land by following contour system, wherein huge pits are made and the excess soil is mounted against the slope which enables storage of water during monsoon and checks run-off loss of irrigated water. Coconut palms are applied with organic and inorganic nutrients. Wide basin is made around the palm and the nutrients are applied 1.5-2 m away from the bole. Mr. Chinnaswamy applies 15 kg of farm yard manure per palm and 180-200 t of tank silt per acre. He prepares *Jeeva amirtha* once in a month by using cowdung, cow urine, butter milk and tender nut which is applied to all crops. He also applies urea (0.5 kg), DAP (0.5 kg per palm) and MOP (1 kg per palm) to coconut. The crop residues are kept in the interspaces and incorporated into the soil by ploughing. Black headed caterpillars is quite predominant among different pests like mites, rhinoceros beetle and stem weevil. For its management, he releases *Goniozus nephantidis* and follows root feeding of monocrotophos. He owns two indigenous and two Holstein-Friesians and the milk yield is about 30-35 litres per day. The cattle are fed with green grass and maize grown in the farm apart from the cattle feed concentrate. He harvests 0.8-1 lakh coconuts and 20,000 tender nuts from 1000 palms which are in different ages, and gets an income of Rs. 11 lakhs. He also harvests 250 q (fresh weight) of arecanut, 3 q of cocoa dry beans, 100 q of turmeric and 7 t of Elakki variety of banana. According to him, the net income from the coconut-arecanut, coconut-cocoa and coconut-turmeric cropping system is Rs. 3, 1.5 and 2.6 lakhs, respectively which is 200 % higher than the coconut monocropping system.

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*Mr. V. Malleswara Rao*

Mr. V. Malleswara Rao (60) residing at velpacharala village is famous among farmers and other stakeholders of horticulture for his innovations in adoption of coconut based cropping system. He is a graduate in commerce and has forty years of farming experience in coconut cultivation. His devotion and commitment in farming made him to try for other remunerative crops like, cocoa as intercrop in 12 acres of cocoanut garden and arecanut and black pepper as border crops. He is also cultivating paddy in 5 acres land and Eucalyptus in 30 acres. Coconut is of 22 years old and the variety is East Coast Tall with a population of 60 palms/acre. He is well aware of the importance of water and its management for maintaining the soil and crop health. Microjet irrigation is followed in his garden for water management for the coconut, cocoa and border crops like arecanut and black pepper. Recycling of crop wastes is done with the help of mulching especially coconut and cocoa pruned mass. Nutrient management is the most critical factor in attaining good yields from any crop, he says. Farm yard manure is applied at the rate of 25 kg/palm/year. Neem cake @1 kg/palm/year, chemical fertilizers @ 1 kg urea, 2 kg SSP and 3 kg MOP/palm/year applied in the radius of 5-6 m from the palm basin. Micronutrients is applied based on the soil test based recommendations. There is no major pest/disease problems in his garden as he is taking precautionary measures for the health of the palms. Depending on the market, he is harvesting coconuts for tendernut as well as matured nuts. On an average he is able to get 160 nuts/palm/year from his 12 acres garden. Tendernuts from his garden are sent to cities like Vijayawada, Hyderabad for fetching good price. The idea of growing cocoa as an intercrop in coconut garden came in right time for Mr. Rao as coconut has been facing price fluctuation since many years. Cocoa is a remunerative crop in coconut garden as it is giving additional income, easy to manage, enriching soil fertility through its residues, employment throughout the year etc., he added. He is maintaining 1800 cocoa plants which is of 16 years old planted in 9 acres of coconut with a 9 x 9 m spacing in a single hedge system. He follows scientific pruning for which he got training from CPCRI, RS, Vittal. He is following proper irrigation and nutrient management by which he is able to get 2 kg dry beans/tree/year which fetch an additional income of Rs. 220/tree/year. Few pests like, leaf eating caterpillar, rats, squirrels and diseases like, pod rot and canker were reported. They were well managed under economic threshold level by integrated approaches. Arecanut and black pepper were also well maintained along the borders of coconut which gave considerable yield and income. He is fully devoted to farming and keeps trying for new things in farming. He has very good contact with research institutes, department of horticulture, Mondelez India foods pvt ltd., mass media etc. to update new technologies in farming. He is a role model among farmers in his village for his active involvement in farming. Overall, he is happy in doing farming involving various crops and he says, cropping system approach is the need of the hour.

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*Mr. D. Vijaya Sarathi*

Mr. D. Vijaya Sarathi (62) hails from a traditional agriculture based family. His 40 acres land in kavvakunta village is a model plot for coconut based cropping system for many farmers in southern India. Mr. Sarathi, though a high school pass out, had passion for agriculture and tries new things in his farm and also gives business perspective for his farming activities. He decided to grow multiple crops in his coconut garden to utilize free space and also to manage resources effectively. He attended many seminars, meetings and conferences on horticulture. He had also attended World Agri Tech in the year 1996 in Israel where he had the opportunity to closely watch the drip irrigation systems for growing horticultural crops. He decided to convert his entire farm under drip system to save water. Cocoa was introduced in the year 1993 and he also planted 1500 arecanut palms on an experimental basis. After seeing the results of arecanut growth and yield he planted arecanut in his entire farm in 1997. He also felt that arecanut is a good host for pepper creepers which resulted in introduction of pepper. Today, apart from coconut, his 40 acres farm contains coffee (1000 plants/acre), cocoa (225 plants/acre), black pepper (600/acre) and arecanut (550 palms/acre). He availed loans from banks for developing multistoried cropping as it required lot of investment initially. Arecanut varieties like mangala, sreemangala and mohitnagar are grown in his farm with a spacing of 6 ft between palms and 11 ft between rows in order to accommodate creepers like black pepper and vanilla. The harvesting is from January – May every year and the nuts are dried for making chali which is sold at Hyderabad for good price. A black pepper variety Karimunda was introduced as an intercrop in coconut and arecanut garden as it is suitable for shaded condition. The yield ranges from 2-4 kg dry pepper from 5th year onwards. He produces pepper nursery by using cuttings of the well grown creepers and sells to the needy growers. The final produce like green pepper and dry pepper are being sold to metropolitan cities for good price. Cocoa F1 hybrid seedlings were planted as an intercrop in coconut garden. The residues of cocoa are used as mulch as it enhances soil fertility. The maximum yield is obtained during January - June every year. Arabica coffee plants were purchased from Narsipatinam coffee research station and introduced in his garden as an intercrop. The height of the plant is restricted to 3-4 ft so as not to disturb other crops grown in the garden. All these were possible because of his innovativeness coupled with risk taking ability. Besides, he learnt advanced techniques from published reports from CPCRI. He has four borewells for water supply and the entire farm is drip irrigated. He has a drying yard for processing arecanut, cocoa and black pepper. About forty workers are employed on day to day basis for carrying out different farm operations. He produces vermicompost using all the wastes available in his farm. He is having livestock for meeting the organic manure requirement. He maintains a nursery for the supply of quality elite planting materials to the farmers. He also started a cooperative society through which he helps many farmers in giving timely information on cultivation, pest and disease management and post harvest processing. Lot of farmers are showing keen interest for visiting his garden and also for adopting cropping system. For managing pests and diseases he used only neem based insecticides. He also opined that lot parasites and predators are available in the farm which will take care of pests. At the time of crisis with respect to coconut price, this type of cropping system will definitely help farmers in achieving higher productivity and profitability, he says. He earns on an average more than 1.5 crores from his 40 acres land apart from providing employment to so many families. His innovations brought many researchers, innovative farmers, policy makers including Chief Minister of Andhra Pradesh to his farm. His ambition is to see this type of cropping system cover more and more area in the future. To his credit, he has so many awards for his innovations in multistoried cropping system.

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Mr. J. Rajan Babu, a progressive and award winning farmer is famous among farmers and other stakeholders of horticulture for his innovations in adoption of coconut based cropping/farming system. He is fifty six years old and high school pass out having thirty five years of farming experience in coconut cultivation. His devotion and commitment in farming made him to try other remunerative crops like, cocoa as intercrop in 30 acres of coconut garden and arecanut, teak and sapota as border crops. He also maintains fish pond in his farm which fetches good income. The water from pond is used for irrigation purpose. Coconut is of 20 years, 15 years and 8 years old and predominant variety is East Coast Tall with a population of 70 palms/acre. He is well aware of the importance of water and its management for maintaining the soil and crop health. Microjet irrigation is followed in his garden for water management. Recycling of crop wastes is done with the help of mulching especially coconut and cocoa pruned mass. Nutrient management is the most critical factor in attaining good yields from any crop, he says. Farm yard manure is applied at the rate of 10-15 kg/palm/year. Neem cake @1-2 kg/palm/year, chemical fertilizers @ 1 kg urea, 2 kg SSP and 2 kg MOP/palm/year applied in the radius of 5-6 ft from the palm basin. Micronutrients are also applied as per soil test based recommendations. No major pest and diseases problems in his garden as he is taking precautionary measures for the health of the palms. Depending on the market, he is harvesting coconuts for tendernut as well as matured nuts. On an average he is able to get 180 nuts/palm/year from his 30 acres garden. Cocoa is a remunerative crop in coconut garden as it is giving additional income, easy to manage, enriching soil fertility through its crop residues and provides employment throughout the year etc., he added. He is maintaining 6000 cocoa plants which is of 16 years old planted in 30 acres of coconut with a 9 x 9 m spacing in a single hedge system. He follows scientific pruning for which he got training from Mondelez India foods Ltd. He is practicing optimum irrigation and nutrient management by which he is able to get 2.5 to 3 kg dry beans/tree/year which fetch an additional income of Rs. 220/tree/year. Few pests like, bark eating caterpillar, leaf eating caterpillar, rats, squirrels and diseases like, pod rot and canker were reported. They were well managed under economic threshold level by integrated approaches. Arecanut and teak were also well maintained along the borders of coconut which gave considerable yield and income. He has very good contact with CPCRI, department of horticulture, Mondelez India foods pvt ltd., mass media etc. to update new technologies in farming. He is a role model among farmers in his village for his active involvement in farming. He has won awards for his innovations in farming from research institutes, developmental organizations and farmers' organizations.



Mr. A. Gopinath Reddy (48) is an agri entrepreneur doing coconut based business ventures with his 16.8 ha area at Singarayapalem, West Godavari. He cultivates West Coast Tall (3.2 ha), East Coast Tall (9.6 ha), T x D hybrids (4 ha) with a population of 2520 in an age group of 28-30 years. Cocoa was introduced during 1994-97 planted with a spacing of 9 x 9 m in a single hedge system covering a population of 8400 trees. Entire garden is drip irrigated. Livestock is an important component for maintaining soil health, he added. Organic manure @ 20 kg and 10 kg is applied twice in a year for coconut and cocoa respectively. Besides, cow dung slurry is mixed with irrigation water and supplied. Chemical fertilizers viz., urea 1 kg, SSP 2 kg and MOP 3 kg is applied to the radius of 5-6 m in the coconut basin. Cocoa is supplied with 600 g of urea, 600 g SSP and 900 g MOP per year. Cocoa pruning is done twice in a year for obtaining higher yields. The major harvesting season is during March to June wherein he gets around 70 to 80 % of the produce and hence off season cherelles are removed physically as size of the pod and quality is inferior in comparison to major harvesting season. This practice is called as thinning which helps in getting bigger pods with good quality during the major harvest season. Mulching is done with the help of crop residues and cocoa wastes. Insecticides are used based on the intensity and economic damage of the crop. Average yield of coconut is 185 nuts per tree per year which is marketed as tendernut/copra. Cocoa yield is about 2- 2.5 kg dry beans/tree/year and its marketing is done through Mondelez India foods pvt ltd. He follows ideal post harvesting practices like fermentation, drying, packing and marketing for fetching good price for the produce. Though he is an engineer by profession he treated farming as business for the last 26 years. His mantra for farming is less input and maximum output. He had widely travelled to various parts of country where coconut is successfully grown with different technologies/enterprises. Besides, his passion for learning new things made him a successful entrepreneur in coconut based business ventures.



Mr. Sathyanarayana Moorthy, G. (44), an organic farmer successfully cultivates coconut in his 8 acres land. He holds a Polytechnic degree and has twenty years of farming experience. East Coast Tall (ECT) is grown with a population of 480 palms with a spacing of 9 x 9 m to accommodate more number of intercrops. Cocoa is cultivated as an inter crop with a population of 1150 (6 years old) and 620 (20 years old). Total farm is drip irrigated. For the last seven years the farmer is using only organic inputs for nutrient, pest and disease management. He is maintaining 10 animals for managing his 8 acres farm. The animals are fed with fodder grass (Co-3) which is grown as an intercrop in coconut garden. Organic manures viz., Jeeva amirtham, Farm yard manure (10 kg), poultry manure (5 kg), goat manure (5 kg) are applied twice a year. Biofertilizers like Azospirillum, Phosphobacteria, VAM and K solubilizer are used for nutrient management. Biocontrol agents viz., Pseudomonas and Trichoderma viride are used for the control of diseases. Cow dung slurry is mixed with irrigation and applied to coconut and cocoa once in a week for building the microbial load in the soil and also for enriching the soil fertility. Neem based insecticides are used for the control of leaf eating insects and other pests in cocoa. Crown cleaning in coconut is an important practice which is followed twice a year along with harvesting of nuts. Cocoa pruning is done once in a year in the month of July after the peak harvest during March – June. Pruned cocoa mass and other crop wastes are used as mulching materials for coconut and cocoa which are helpful in conserving soil and water. On an average he gets about 140 nuts per tree per year which is marketed as tendernut as well as mature nuts depending on the demand. High yield from cocoa is obtained @ 3- 4 kg dry beans per tree per year which is marketed through Mondelez India foods pvt ltd. Expenditure for coconut and cocoa per acre is Rs. 40000 and the gross income realized from coconut alone is Rs. 30000 and from cocoa it is Rs. 120000. He is very much convinced that organic farming leads to steady yield with fewer incidences of pests and diseases. He has very good contact with progressive farmers, research institutes, department of horticulture and other developmental agencies working on coconut and cocoa. He started organizing organic farmers' network for the betterment of farming community in the long run.



*Mr. D. Sathyanarayana Raju*

Mr. D. Sathyanarayana Raju, an award winning progressive farmer hails from Kothapet, East Godavari. He is very famous for his innovativeness in coconut based cropping system. Coconut is grown in 16 acres of his total farm (20 acres). Besides, other crops like banana, papaya, turmeric and ginger are also grown in his farm. Coconut is grown with a spacing of 9 m x 9 m to accommodate 60 palms/acre. East Coast Tall is the only variety which is grown in his entire farm. He follows integrated nutrient management based on soil test. He believes in organic recycling and mix of chemical fertilizers for soil health and for obtaining maximum yield. He maintains 3 ongole breeds by which he prepares jeeva amirtham (cow dung + cow urine) and vermicompost. Organic inputs like, farm yard manure, castor cake, neem cake *Azospirillum* and *Trichoderma viride* etc are used judiciously. Banana varieties like G9, tissue culture robusta, chakarakeli are grown as intercrops in 6 acres of coconut garden. The entire farm is drip irrigated. Fertilizers are applied through drip fertigation which helps in saving labour and inputs like water and fertilizers. The produce is being marketed in metro cities which fetches better price. Papaya variety 'East West' gives an average yield of 50-80 fruits per plant. The variety is famous for vegetable purpose so that it is transported to longer distance. Turmeric, Ginger, Elephant foot yam, cucurbits, greens, black gram are also grown in coconut garden. All the empty spaces are utilized properly by having intercrops in rotation. Each space in the garden is utilized effectively with systematic plan by rotating crops of varying duration. His 35 years old coconut tree yield ranges from 150 – 180 nuts/tree/year which are marketed through traders. He gives adequate importance to intercrops as they fetch additional income in quick time. Overall he relies on diversification for enhancing productivity and profitability. He has 30 years of farming experience and he is occupying important positions in different organizations namely, SFAC member in ATMA and President, Banana producer society. He has very good contact with HRS, Ambajipeta, Department of Horticulture and other developmental organizations. To his credit, he has received so many awards like, Best farmer in horticulture by Kakinada and Yanam district authorities, BYR Raju foundation award for horticulture, Best banana farmer award by Kakinada, Best farmer award by State government. His success stories appear in leading TV channels, newspapers, AIR and other farm magazines for the benefit of farming community. He is a resource person for various transfer of technology programmes like training programmes, meetings, group discussions, debate, Quiz competition etc. for encouraging farm youth and farm women to take up horticulture as a business venture.

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Mr. U. Bhaskara Rao (71) is a professional agriculturist graduated in Agriculture from Orissa University of Agriculture and Technology, Bhubaneswar. After superannuating from service in the Department of Agriculture as AO, he started his career in horticulture. Coconut is grown in 11 acres and other cafeteria of crops include cocoa, banana, mango, sweet orange, cinnamon, papaya, allspice, arecanut, vegetables, etc. His scientific knowledge and service in the department helped him to adopt modern scientific practices in his garden. Varieties in coconut include East Coast Tall, Godavari Ganga, Malayan Yellow Dwarf, Chowghat Orange Dwarf etc of different age groups. Fertilizers and organic manures are applied as per soil test based recommendations. Coconut is supplied with 1 kg urea, 2 kg SSP and 2.5 kg MOP per palm per year. Besides these, micronutrients are applied @ 50 g Borax and 200 g Mg So<sub>4</sub>. Application of organic sources of nutrients like farm yard manure, neem cake and *in situ* recycling of crop wastes are also practiced to maintain soil health. He installed solar power unit for pumping borewell water and the entire farm is drip irrigated. Few types of machinery which are handy for doing agricultural operations at his farm are, minitractor, rotavator, intercultivator and coconut dehusking machine. For conserving soil and water he follows husk burial technique which he learnt from CPCRI. Husk burial helps not only in conserving soil and water but also in supplying the nutrients in the long run. Few pests like Rhinoceros beetle, red palm weevil, rats, wild civet cat cause menace in his garden which are controlled using integrated pest management practices. To manage the price fluctuation of coconut he constructed a storage godown where he keeps all coconuts for copra which fetch good price in the market. He also sells tendernut during summer months which fetch good price in the market. On an average he gets about 150-160 nuts per tree per year. Cocoa is of 9 years old and the average yield of 2 kg dry beans/tree/year is obtained. Cocoa pod husk and leaf residues are decomposed using microbes. Cafeteria of crops: Banana (Red Banana & Chakrakeli), Mango (Banganaballi, Punasa local), Papaya (Red lady), arecanut (Mangala) are grown in his farm. Diversification is the key to manage pests and diseases and also to get stable income throughout the year, he says. He has very good contact with research institutes and developmental organizations like CPCRI, YSR Horticultural University, Department of Horticulture, Krishi Vigyan Kendras etc. He occupies important positions in different organizations/societies like, Vice president, Bharathiya Kisan Sangh, President, coconut producer federation.



Mr. M. Mukteswar Rao (68), retired employee of SBI turned into a coconut entrepreneur is now very famous among farmers and other stakeholders for coconut nursery. Coconut is grown in 45 acres and the varieties cultivated are East Coast Tall, gangabondum, Tx D hybrids, Dx T hybrids and dwarf varieties. Spacing followed is 9 m x 9 m to accommodate 60 palms/acre. Age of the palms is 30 years. Other crops grown are cocoa (15 acres), mango (5 acres), fodder grass (1 acre), teak (1000 nos.) and Jack (50 nos.). Besides, he produces 1 lakh good quality coconut seedlings which are distributed to the farmers of Andhra Pradesh and Telangana at nominal rate. He learnt hybridization techniques with the help of CPCRI. He maintains farm register for the details on mother palms, intercultural operations, application of inputs, pollination, pest and diseases, yield etc for monitoring the inflow and outflow from the system. Irrigation methods followed are, drip, sprinkler and flood irrigation depending on the intercrops and land slope. Fertilizers and organic manures are applied as per soil test based recommendations. Coconut is supplied with 1 kg urea, 2 kg single super phosphate and 3 kg muriate of potash per palm per year. He maintains 15 nos. of Ongole breeds for meeting the organic manure requirements. Organic sources of nutrients like farm yard manure, neem cake and *in situ* recycled crop residues are also applied for enriching the soil fertility. He installed solar power unit for pumping borewell water and the entire farm has irrigation facilities. Few types of machinery which are handy for doing agricultural operations at his farm are, minitractor, rotavator, intercultivator, coconut dehusking machine, etc. Few pests like rhinoceros beetle, red palm weevil, rats, wild civet cat cause menace in his garden which are managed by integrated practices. To manage the price fluctuation of coconut he constructed a storage godown where he keeps all coconuts for copra which fetch remunerative price. He also sells tendernut during summer months which fetch good price in the market. On an average, he gets about 200-250 nuts per tree per year. Primarily nuts are used as seed nuts and the rest are sold as copra. Expenditure is about Rs. 20000/ acre and the income is about Rs. 40000/ acre. His main income is through sale of seedlings @ Rs. 60-70 by which he earns around Rs. 60 lakhs per year. Cocoa is of five years old which gives an average yield of 1 kg dry beans/ tree/year which is marketed to Mondelez India foods pvt ltd. He has very good contact with research institutes for developing a good number of hybrids in Andhra Pradesh. He is presently the secretary of coconut producer federation. To his credit, he has won so many awards at state level for his contribution in the field of horticulture.

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*Mr. C. D. Chaudhary*

Mr. C. D. Chaudhary (71) is a progressive farmer belongs to Dwarapudi village, East Godavari growing two important plantation crops viz., coconut and arecanut. He is having 50 years of farming experience. Total area of the farm is 40 acres in which coconut and arecanut are grown. East Coast Tall of coconut and Mohitnagar of arecanut were planted during 2002 with a spacing of 12 m x 9 m for coconut and 2.7 m x 2.7 m for arecanut. Though coconut and arecanut are not recommended in the same garden because of competition for sunlight, water, air etc. he decided to cultivate both the crops simultaneously for experimental purpose and also keeping in view of the perennial nature of the both crops. For the last fourteen years, he is able to manage both crops without any major problems. He follows organic farming based on Mr. Palekar's principles for which he is maintaining 4 Ongole cows. Mulching is practiced using coconut and arecanut wastes. Jeeva amirtham and cow dung slurry are applied to maintain the soil fertility. Entire farm is drip irrigated with solar pump facilities. Few pests and diseases in coconut and arecanut are managed with the help of neem and copper based fungicides. Harvesting of coconut is done once in four months. On an average, he gets 150 nuts per tree per year which is marketed as tendernut as well as matured nuts depending on the demand in the market through traders. With respect to arecanut, harvesting is done during November – May and he gets 1.5 kg dry kernel per palm per year which is processed by sun drying for 40 days and proper packing. The price of arecanut ranges from Rs. 200- 240 per kg of dry kernel which is sold to traders in Orissa. He is successfully cultivating coconut and arecanut in his 40 acres land. He has good contact with research institutes like CPCRI and Dr. YSR Horticultural University. He is an active member in coconut producer society and takes lot of initiatives to strengthen coconut sector in his locality.

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Contact: Mr. Chilikuri Dorayya Chaudhary, Vemulapalli, Dwarapudi, Mandapet, East Godavari, Mobile: 9849798649.



Mr. M. Ramana (45), an award winning farmer hails from traditional agricultural family doing farming since 30 years after completing eighth class. He has coconut (6 acres), lemon as intercrop in coconut (1 acre), banana as intercrop in coconut (1.5 acres), teak in borders and rice (4 acres). Besides, Mango, Amla, red sandalwood and Tapioca are also grown in his farm. East Coast Tall, T x D hybrids and dwarf varieties are grown which are 21 years old with a spacing of 8 m x 8 m. Fertilizers and organic manures are applied twice in a year for managing the health of the soil. Organic manures like farm yard manure @ 20 kg, goat manure @ 5 kg, castor cake @ 1 kg are applied around the basin of the coconut. Fertilizers like 1 kg urea, 2 kg single super phosphate and 2.5 kg muriate of potash are applied to the radius of 5- 6 feet from the basin once in a year. He believes in integrated nutrient management for managing the soil and crop health for obtaining higher yield. Drip, sprinkler and flood irrigation methods are followed depending the water availability and intercrops grown. Mulching is practiced using crop wastes for conserving soil moisture and also to reduce weed growth. Few pests like red palm weevil, rhinoceros beetle and rats and diseases like stem bleeding and *Ganoderma* wilt are managed with integrated pest management practices. Yield of 160-180 nuts is obtained from one tree in a year which is marketed through traders and contractors. Lemon is grown as an intercrop in 1 acre area which gives an additional income of 2.2 lakhs every year. Backyard poultry unit is maintained with 70 country birds which also gives an additional income for him. Manure from poultry farm is also applied to the palms after composting. His wife and son are actively involved in farming activities. He is one of the beneficiaries of demonstration plot on improved varieties in cocoa established by CPCRI. He is a member in ATMA and actively involved in various meetings related to agriculture. He visited various agricultural farms on study tour. To his credit, he has won 4 awards for his contributions in horticulture.

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Contact: Mr. Mallipamu Ramana, S.Narasapuram, Payakarapeta, Vishakapatnam, Mobile: 7799630066.



*Mr. M. Sathyanarayana Raju*

Mr. M. Sathyanarayana Raju (50), an organic farmer successfully manages his 40 acres farm at Sreeramapuram village, Vishakapatnam. Graduate in commerce doing farming since 30 years. Coconut and cocoa (14 acres), Sugarcane (10 acres), Banana (3 acres), papaya (3 acres), paddy (2 acres), vegetables (4 acres) and fodder grass (4 acres) are grown in his farm. Jack, Mango, Lemon and Sapota are also finding a place in his garden. Coconut varieties like East Coast Tall, Gangabondum and D x T Hybrids are grown which are in the age group of 25, 15 and 8 years respectively. Cocoa is grown as intercrop in 14 acres and is in the age group of 10 and 5 years. Banana varieties Chakarakeli and Amruthapani are grown in coconut garden. He is a strong follower of Mr. Palekar's principles and an organic farming activist. Minimum disturbance of soil and recycling of crop wastes is key factor for his success of organic farming. Major inputs used for nutrient management are, Jeeva amirtham and Gana Jeeva amirtham. Jeeva amirtham is prepared using 180 litres of water, 10 kg cow dung, 10 litres of cow urine, 1 kg jiggery, 1 kg pulse powder and 0.5 kg soil. After thorough mixing and stirring two times a day mixture is kept for two days before using it for the crops along with irrigation water. Gana jeeva amirtham is prepared using 200 kg cow dung and 20 litres of jeeva amirtham. According to him, one cow can manage 30 acres farm for practicing organic farming. Solar power unit is used for pumping irrigation water. Pests and diseases are managed using neem leaf extract and botanical pesticides. Natural enemies are conserved in his farm and take care of pests in major crops. Mulching with pulses, banana wastes, cocoa pruned mass, crop residues are done for conserving soil and water. Harvesting is done once in four months and coconut yield is around 160-180 nuts per palm per year. Cocoa yield is 1.5 kg dry beans per tree per year. Besides, he is getting good income from papaya, sugarcane, banana, vegetables etc. His success in farming is mainly due to involvement of family members in all farming activities. He has started his own organic shop 'Sree Venkateswara natural farming products' at Tuni which attracts lot of customers. He is a member in Agri information India and has very good contact with CPCRI. He subscribes farm magazines, listens radio and television programmes related to agriculture and updates his knowledge on doing smart agriculture. He is a resource person in many training programmes, meetings and research programmes on organic farming. His success stories on organic farming are published in leading TV channels, newspapers and farm magazines.

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Contact: Mr. Mandapati Sathyanarayana Raju, Sreeramapuram, Payakarapet mandal, Vishakapatnam, Mobile: 8977244416.



Mr. A. Laxminarasimharaju (50) is a progressive farmer cultivating coconut, cocoa, oil palm, banana, lemon, papaya, orange, tuber crops, cashew, mango and vegetables. Coconut is grown in 6 acres and other crops in 5 acres. Spacing of coconut is 9 m x 9 m and cocoa is intercropped in 2.5 acres. He knows the importance of critical factors like sun light, water, air, etc. for the growth and development of main crop and intercrops. Accordingly, he does farm planning introducing crops with different duration so as to suit the system for enhancing the total productivity. His farm has diversified crops ranging from vegetables, fruits, greens, plantation crops etc. Organic manures and chemical fertilizers are applied twice a year for enriching nutrient status of the soil. Organic manures like farm yard manure @ 20 kg, vermicompost @ 5 kg, neem cake @ 1 kg are applied per palm per year. Chemical fertilizers viz., urea @ 1.5 kg, single super phosphate @ 2 kg and muriate of potash @ 2 kg is applied in two equal doses per palm per year. Coconut husk burial is practiced to manage water stress during summer months. Entire farm is drip irrigated as he faces water shortage during summer months. Few pests and diseases are managed with botanicals and copper based fungicides. Harvesting of coconut is done four times a year. Average yield from coconut is 160 nuts per palm per year which is marketed as tendernut, mature nuts and copra depending on the market rate. Lemon (Local), Papaya (Red lady) and Banana (Chakarakeli & Mukri) are grown and the produce is sold for good price which is an additional income from the system. Cocoa was introduced in his coconut garden with one ha area as a participatory demonstration plot on improved varieties of cocoa established by CPCRI. Cropping system is the only answer for managing price fluctuation of coconut, he says. He is earning good income from all the intercrops and he is able to get steady income throughout the year. Mr. Raju is a hard working farmer and a role model for the youngsters and other farmers in his village. He has good contact with CPCRI, agricultural university and Department of Horticulture to update his knowledge on farming.



*Mr. Balkrishna Ganesh Bapat*

Mr. Bapat is a farmer involved in nursery and value addition business. He has been in the profession for 35 years with the support of his mother, wife and son. He is a socially active farmer. He is President, ATMA, Shriwardhan; Member, District Committee, NHM; Ex Sarpanch, Diveagar; Member, Arecanut Cooperative marketing society; Secretary, Maharashtra Rajya paridosic prapta shetkari vichar manch and Trustee, Ganesh Temple & Sidhanath temple. He has 300 coconut palms of the variety Banavali in 1.5 ha and arecanut intercropped with coconut. In addition, he has cashew and mango in 7 ha and nutmeg, cinnamon, black pepper and banana as other intercrops. Mr. Bapat follows organic cultivation giving cowdung and farmyard manure as nutrients for plants. He recycles the biomass from the system by vermicomposting. *In situ* composting is also followed for recycling biomass. Value addition by processing farm produces and raising seedlings in nurseries for sales are his major activities that helps him to sustain agriculture. He converts coconut into copra and sells to local market. Tender coconut water jelly (without using jelatine) is his innovative product. Another preparation is coconut chutney, which he distributes in local markets. He disseminates the knowledge on processing techniques through ATMA and other seminar classes. In his opinion, the coconut value added products are not properly positioned in the minds of the consumers. He strongly believes that the coconut products have excellent potential if proper awareness on the nutraceutical properties of the products is created. Mr. Bapat has received many awards and recognitions viz., Raigad best agri industry award in 1998, Vasanta Rao Smriti pratishthan award, Pusad Udyan Pandit State award in 2004, Konkan Bhushan in 2008, Nirmal Gram Puraskar in 2008, Paryavaran Vikas Ratna in 2011, Yaswant Panchayat Raj Abhiyan in 2011, Best Sarpanch Award in 2011 Raigad Krishi Nist Award in 2016.

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Contact: Mr. Balkrishna Ganesh Bapat, Diveagar, Shriwardhan, Raigad, Mobile: 9421160393.



*Mr. Dilip Narayan Patil*

Mr. Dilip Narayan Patil has combined agriculture with tourism successfully. His farm is a model for agro-eco-tourism enterprises. His wife along with their son and daughter assist in the venture. Mr. Patil has 1.7 acres farm where he cultivates coconut, arecanut, black pepper, banana and nutmeg. He has 175 bearing coconut palms of the variety banavali. Irrigation is through channel network constructed inside the farm. He uses both organic and inorganic fertilizers in his field. Mr. Patil has both animal and fish components in his farm. He has four buffaloes and a pond for fish culture. Though the size of holding is small, the optimal farm intensification is a striking feature of his farming. Moreover, the layout and maintenance of the farm is eye catching and almost a tranquil ambience is maintained in his farm. Mr Patil holds many responsibilities like Vice-President, Krushak Kalyanakari samasta, Chaul; Member, Shriphal Utpadak Sangh, Chaul; Member, Coconut Cluster ( Shivkalyan Farmer's club) and Member, Krishi Vidnyan sanstha. His farm is recognized by Coconut Development Board for training programmes. His innovative ways of marketing agricultre/ farming brings many tourists to the farm. He has three cottages and a restaurant. Thus an excellent forward linkage is established wherein the downstream farm activities and the ambience have been quite effectively linked to the business enterprise. This pattern of integration of farm activities to the commercial enterprise can be emulated as a model for the small/marginal holders. He is also planning to modernise the restaurant to high tech cafeteria to attract more tourists into his farm. Mr. Patil has good linkage with AICRP on palms, Agriculture department and CDB. He has received Shetinishth Shetkari award for Raigad.

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Contact: Mr. Dilip Narayan Patil, Revdanda, Therunda Pata, Chaul Post, Alibag, Raigad, Mobile: 9421171164.



*Mr. Tupe Janardan Dnyandoe*

Ahmadnagar in Maharashtra is not a traditional coconut growing area. But, this fact did not deter Mr. Tupe from planting coconut in his field at Chanda, Nevasa, Ahmadnagar. The enterprising farmer took up scientific cultivation of coconut that resulted in handsome dividends. Mr. Tupe helped by his family consisting of wife, son and two daughters cultivating coconut for eight years. Mr. Tupe has coconut in 2.5 ha land as monocrop. In the initial three years, he had soyabean, onion and red gram as intercrops. He has nearly 500 bearing coconut palms. He used chandra sankara, COD and CGD varieties for cultivation. He irrigates the palms through drip system. He has open well and bore well as source of water. All the biomass from the palms is converted into compost in his field. He has dug out trenches in field for burying the biomass. In addition, he applies FYM as well as chemical fertilizers and micronutrients to his palms. The fertilizer application in his field is purely in accordance with the soil test results, which he undertakes regularly. He is growing sunhemp as cover crop to control weeds and to improve the nitrogen content in the soil. Mr. Tupe harvests tender nuts which he sells in the local market. He strongly believes that, if adequate emphasis is given on tender coconut production in a business mode, huge profits can be earned, since the growth rate in consumption of tender coconuts is increasing in the recent times. Yield of coconut was good till last two years, and then the yield has reduced because of drought. According to him, this is a temporary phenomenon and since he has taken all care with respect to soil and water conservation, he is sure to sustain the coconut farming. He has built good rapport with officials from Coconut Development Board, AICRP on palms and agriculture department. He encourages other farmers to take up coconut cultivation in the area.

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Contact: Mr. Tupe Janardan Dnyandoe, Chanda, Nevasa, Ahmadnagar, Mobile: 9881465015.



Mr. Anant Nana Raut, aged 85, is doing farming for the last 70 years. In the year 1962, under his leadership, planting materials of spices from Kerala had been brought to Thane district and distributed to the farmers to popularize and spread spice cultivation in Maharashtra. Thus, he is the pioneer in popularizing spices farming in Thane region of Maharashtra. He was advisory committee member, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli. Even today, Mr. Raut looks after his farm at Mahim, Palghar. He is still socially active and is the President, coconut producers' society, Thane district. Mr. Raut cultivates coconut in 2.4 ha land with arecanut and banana as intercrops. He has a few trees of Sapota, Cinnamon and Nutmeg in his farm in addition to about 500 bearing coconut palms of Banavali variety. The garden is under organic cultivation at present. He markets tender nut by giving contract to local traders. He is planning to purchase two hectares of land nearby for planting tendercoconut varieties exclusively. According to him the surging demand for the tender coconuts in urban centres can be viewed as a great opportunity and the farmers should respond to such dynamic trend to stay in the farming activities in profitable manner. He is a man of vision and simplicity and his enthusiasm towards farming even at the age of 85 is indeed worthy of appreciation. Mr. Raut has good association with AICRP on Palms, Agricultural University (KVV), Coconut Development Board, and Agriculture Department of Maharashtra. Mr. Raut received many awards for his efforts to popularize plantation crops in Maharashtra. The Maharashtra Government honored him with Shetkari Mitra Puraskar in 1997. He received LS Patel Award from ASPER Company in 1998. He received best coconut farmer award from CDB in 2010.

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Contact: Mr. Anant Nana Raut, Mahim, Palghar, Thane, Mobile: 9260572122.



*Mr. Ramand B. Shirodkar*

Mr. Ramand B. Shirodkar is on a mission to improve the living standards of farmers. He is retired as Manager, Krishi & Gramin Vikas Bank, Savantawadi in Sindhudurgh. He knows the problems of farmers that motivated him to work for their cause. With MA in Economics and a diploma in Agriculture, he is both academically and technically well equipped to understand the financial and technical issues faced by the farmers. He is actively involved in many societies to help farmers. As President of Shyadri Bambu and Vanaupas Marketing Sangh, he assumes the facilitating role for farmers of the area to market their products. He is office bearer of many societies and organizations that facilitate farmers in good agriculture practices. He is the General Secretary of Organic Farmer's Federation, Sindudhurgh district, a body that coordinates organic cultivation in the district. He is also holding offices of the Director of Village Co-operative Society, Ovaliye; Chairman of Utkarsh Nariyal Ulpadak Sangh (coconut cluster), Ovaliye; Treasurer, District Coconut Grower's Federation, Sindudhurgh and President of ATMA, Savantwadi. Mr. Shirodkar is a coconut farmer who also cultivates other crops like mango, arecanut, cashew, sapota, banana and paddy. He has 180 bearing coconut palms. He practices organic cultivation and recycling of biomass by vermicomposting. He uses manually operated pump for irrigation to save power. Mr. Shirodkar is active in agriculture as well as in social relations. He is instrumental in forming the coconut clusters which has reached 45 registered clusters and still counting. He arranges coconut seminars for farmers regularly, where organic cultivation and other relevant topics are discussed. Recipient of Guardian Minister (Home Ministry) appreciation letter for good work in Agriculture sector, Mr. Ramand B Shirodkar is a farmer guide and guardian of sustainable agriculture.

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Contact: Mr. Ramand B Shirodkar, Savantawadi, Sindhudurgh, Mobile: 9422448959.

*Mrs. Pradnya Prabeep Parab*

Farmer turned entrepreneur, Mrs. Pradnya Prabeep Parab is a role model for many in Vengurla area. She is at the helm of Mahila Katthya Kamagar Audyogik Cooperative Society Ltd., Madkhol Road, Vengurla. The society engaged in production of value added products from coconut husk, provides employment for many women workers. Mrs. Parab aged 50 and holder of BA degree, manages the industry and her family constituting husband and two children in equal acumen. She also holds the responsibilities of Director, District Bank, Sindhudurgh; Charter President, Inner wheel; Chairman, Navayug Zilha Mahila Vikas Sahakari Society; Chairman, Sagarshwar Mahila Pariadan Sahakari Society; Chairman, MK self employment Society Ltd.; Vice Chairman, MK Coir foundation, Sindhudurgh and Director, Zilha Sahakari Society, Sindhudurgh. Mrs. Parab cultivates 150 coconut palms in 0.8ha land and use the entire husk for value addition. The varieties cultivated include hybrids, dwarf and banaivali tall. Drip irrigation is practiced along with organic manure like FYM, green leaves and goat manure. Coir dust from the coir factory is used for making vermicompost. The coir factory managed by Mrs. Parab utilizes Women Self Help Groups for the manufacture of value added products from husk fibre. They produce mattings, coir ropes, yarns, etc. and supplies to local as well as away markets. The quality of coir products manufactured by Mrs. Parab is on par with the international quality standards of the coir products. Constant support from various agencies like coconut development board (CDB), state agriculture department, AICRP on Palms, coir board and district industry centre encourages her and keeps the factory afloat. Mrs. Parab believes that, in the present dynamic agrarian regime, we need to integrate the production node of the agriculture effectively with the manufacturing, industrial and value added marketing nodes. Mrs. Parab has received many prestigious awards like successful industrialist, Aditya birla kolkar award in 2008, Sahyadri krishi samman in 2010 and Jijamata krishi bhusan in 2012.

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Contact: Mrs. Pradnya Prabeep Parab, Madkhol road, Vengurla, Mobile: 9422064682.



Dr. Anil Vittal Joshi, who was an ayurvedic doctor, turned to agriculture after an active medical profession. Dr. Joshi had a very successful medical practice, which he left to concentrate on farming. He lives with his wife, two sons and two grand children. Dr. Joshi is socially very active and holds the posts of President, Coconut grower's association of Ratnagiri; Director, APMC and Director, District cooperative bank, Ratnagiri. He cultivates mango in 50 ha and coconut in 2 ha. He has 500 bearing coconut palms and nutmeg, black pepper, arecanut, sapota and garcinia as intercrops. West Coast Tall and TxD (Kerasankara) hybrids are the coconut varieties cultivated. Open well is the source of irrigation. He has laid out drip irrigation in the entire farm area for efficient water utilization. He applies farm yard manure (50kg/palm), micronutrient (ormichem 1600g/palm in two splits and chemical fertilizer in two splits). He practices in situ biomass recycling within coconut basin. He harvests 40,000 nuts per annum and sells to local traders. Though the major crop is mango, he says with adequate planning and added care coconut can be the most profitable crop in the area. According to him, selling raw coconut will never elevate the position of the farmer in the value chain, and for upgradation we need to carry out processing and value addition. Dr. Joshi is aware of importance of animal component in integrated farming and has a few buffaloes in his farm. He has got a shredding machine, which is used for shredding feed as well as for shredding biomass for using as mulch. He has good rapport with CDB, agriculture department and AICRP on palms. Dr. Joshi was awarded Jain Irrigation Award, Agri Hitech and District best farmer award for Ratnagiri district.

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Contact: Dr. Anil Vittal Joshi, Narvan, Guhaghar, Ratnagiri, Mobile: 9422382474.



*Dr. Chandrakant J Mokal*

Dr. Mokal, former MLA of Dapoli, ayurvedic doctor by profession and is a passionate farmer. His wife gives him encouraging support for farming. His son and daughter are homeopathy doctors and runs homeopathic medical college. He owns the ferry boat service on Konkan coastal road and a hospital (Allopathy and Panchakarma). Dr. Mokal occupies many positions like Chairman, Suvarnadurga Shipping & Marine Services Pvt Ltd. Chairman, Vidya Vaibhav Shikshan Mandal, Chairman, Harne Paj Bandav Vikas sahakari samasta and was executive member, Agriculture University (Dr. B. S. K. K. V., Dapoli). He cultivates coconut in three ha, cashew in four ha and mango in 20 ha. In coconut garden, arecanut, cinnamon, black pepper and nutmeg are intercrops. He has 600 bearing coconut palms of Banavali variety. Dr. Mokal practices biomass recycling by allowing in situ composting. He has perennial source of water. A well is constructed to collect the water and after filling water overflows to a stream. He had laid out drip irrigation system in his farm for the efficient and effective utilization of water. He extracts virgin coconut oil in traditional method for the panchakarma and other ayurvedic treatments in his hospital. According to him, virgin coconut oil is on par with 'Amruth' mentioned in the Hindu Puranas, which has excellent medicinal properties. He is optimistic that the day will come, the people around the world will realize the value of this presently neglected oil of wealth and the entire script of the coconut farmers will be re-written. He markets the value added agricultural products through his shop on the road side in his own plot. He is planning to open a cafeteria in his garden in future to promote the agro-eco-tourism. His garden is frequently visited by students of agriculture and he has good rapport with university and department.

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Contact: Dr Chandrakant J Mokal, Chandrama, Mokalbag, Dapoli, Mobile: 9975171245.



Mr. Pravas Naik, though by profession an electrical engineer who is multifaceted, doing various activities in the field of hospitality, construction and electrical contracts, has a passion in farming following the lines of his father. In fact, the farming activity was started by his father way back in 1966. Mr. Pravas Naik, who is now 66 years old, is determined to show the farming venture is profitable to his peer groups and younger generations by introducing mixed farming, integrated farming, lac cultivation, various improved agro techniques, neera tapping, value addition of neera into sugar and innovative marketing strategies such as opening shops for introducing organically produced agricultural produces and introducing neera/sugar to tourism oriented hospitality sector. He is supported by his son, two brothers and their sons. In his sprawling 80 ha farm which is organically managed with 4000 coconut trees of local Banauli Tall variety are present, of which 3200 are bearing. He has introduced cocoa (1000 trees), pepper (200 nos.), banana, CO4 variety grass and turmeric as intercrops in coconut. Apart from coconut, cashew (500 trees), arecanut (400 trees), paddy (1.5 acres), rubber, cut flowers and lac are also cultivated under organic management. There are 15 indigenous cows and poultry birds in the farm which support the cow dung requirement for his farm. According to him when everybody goes for crossbred cows, he wants to demonstrate that Indian breeds are also equally good. Vermicomposting is also practiced by using shredded farm wastes which meets the requirement of his farm. He has placed 50 beehive boxes inside his farm. He has adopted an innovative way of germination/sprouting chamber using fogger system for the production of sprouted maize seeds as cattle feed. He is also raising fruits (Jackfruit, Papaya, and Pineapple), vegetables (cabbage and cauliflower) and other crops such as tuber crops, cinnamon, nutmeg and kokum. One perennial stream is flowing through his farm. He has constructed one check dam across the stream to augment the irrigation to his field by sprinkler and drip system. Since organic farming is practiced, only farm residues, composts, fish bone meal and neem cake are supplied as inputs. No major pest and disease incidence was encountered in coconut and other crops by adopting “prevention is better than cure” approach using regular feeding of “Amritpani” (Judicious mixture of cow dung, cow urine and jaggery). Due to monkey menace for coconut across the perennial stream, he introduced neera tapping using CPCRI technology from 90 trees. Now, the problem of monkey menace is redressed and he gets better income by selling CPCRI Neera to hotels and tourists. He also converts Neera to sugar and sells at Rs. 500 per kg. About 6 lakhs coconut is produced from his field every year under the average productivity of 170 nuts/tree/year. About 5000 kg lac, 800 kg pepper and 25000 kg cashew are also produced. He earns Rs. 1.5 lakhs/ha from his farm by adopting various improved measures. He is maintaining good and frequent contact with various Government agricultural development agencies. He is producing coconut seedlings of D x T and dwarf varieties and supplying seedling/planting materials to Government Agricultural Department. He is also Vice-president of Coconut Farmers’ Association. He has represented Government of Goa on various issues faced by coconut farmers. He has received best farmer award from Government of Goa for organic cultivation. He is of firm belief that coconut based integrated farming and value addition is an effective panacea for present day woe of coconut farmers.

Contact: Mr. Pravas Naik, Nanu House, Varde Valaulikar Road, Margao, Phone: 91-832-2715553, 2715565.



Mr. Ajit Malkarnekar, a post graduate in political science from Germany, is 62 years old and was a follower of Baba Amte at Nagpur during his younger days. His association with Baba Amte attracted him towards organic based agriculture. He started his farming profession during 1986. He developed his 20 acre land into coconut and arecanut garden. Later, introduced pepper (600 trees), sapota and banana as intercrops and pineapple as border crops. Five local breed cows and five hybrid buffaloes were added in order to enhance organic cultivation. All agricultural crop residues and cow dung are scientifically utilized in bio-gas and vermi compost production. He is practicing complete organic cultivation and have close contact with global organic certifying agencies like ECPSAT and DMATA. He irrigates land through sprinkler system. Adoption of mixed and integrated farming fetches higher income of about Rs. 1.75 lakhs/ha, double of what he could earn had he followed mono cropping. As of now, to exploit the tourism potential, he introduced Agro-eco tourism by constructing five cottages inside the farm. During the stay, tourists are provided with an exposure to various agro farming activities such as nursery development, weeding, vermi composting, harvesting, etc. He gets additional income through Agro-eco tourism. He sells a sizeable harvested produces to the tourists and farm visitors. He believes that the coconut has a symbolic link with the tourism and this should be exploited through appropriate integration of production node of the sector with marketing through the agro-eco-tourism link. Further, according to him, Goa and Ratnagiri area of Maharashtra are the best coconut growing tracts to exploit the business linkages of coconut production sector. He is also in good contact with agricultural department through which he seeks suggestions and guidance for farm development. He is also the member of Coconut Farmers Association.



Mr. Chinmay had to engage in farming after sudden demise of his father during final year of B.Com at the age of 20. Now, he is 40 years old, after going through many ups and downs in farming. He is actively supported by his mother and wife in farming activities. He has developed 25 acres farm with 700 coconuts and 8000 local variety arecanut trees. Nutmeg, vanilla, cinnamon and pepper are major intercrops and pineapple is the border crop. Besides this, cashew is also planted in his farm. He is practicing organic cultivation by using neem cake, green manures and cow dung. Sprinkler is used for irrigating crops twice a week. He applies Trichoderma and Pseudomonas to the crops for managing diseases. He has good linkage with Department of Agriculture, Govt. of Goa in soil sample testing, procuring seedlings, seeking guidance for farm improvement. He is also in good contact with ICAR – Central Coastal Agricultural Research Institute, Goa and Indian Institute of Spices Research, Kozhikode by attending training and interface meetings. He could get the yield of 120nuts/tree/year from coconut and 2.5 kg dried nuts/palm/year from arecanut. He is also practicing apiculture and post harvest processing activities like drying of all farm harvested produces, coconut oil extraction, pineapple jam, jackfruit papad making, etc. He is having one agricultural-waste-fired dryer for drying coconut, arecanut, nutmeg, pepper, cinnamon and jackfruit bulb. Recently, he constructed ten cottages for Agro-Eco tourism. Local and foreign tourists regularly visit and stay in his farm cottages. He has introduced one successful innovative learning camp programme 'Life on Farm' for school students to demonstrate planting, manuring, harvesting and post harvesting activities. He is regularly undertaking traditional cooking classes and yoga/meditation courses for Agro-Eco tourists and farm visitors. He exchanges knowledge with local peer groups on various farming activities. He is able to sell most of his farm produces to the tourists and visitors of his farm at reasonable price. Through all the above initiatives, he gets more than Rs. 1 lakh/acre. He feels proud that he is able to give permanent employment for 15 families and he has not claimed any subsidy from government agencies. Due to the above holistic measures, he received 'Certificate of merit' by Government of Goa in 2001, 'Krishi Bhushan' in 2008 by Government of Goa and 'Krishi Ratna' by Sri Institute of Agricultural Science and Technology in 2016. He is also a member of Coconut farmers' association by representing Government agencies for various issues and causes. He is a role model for younger generation in farming profession.

Contact: Mr. Chinmay P. Tanshikar, Netravalli, Sanguem, Mobile: 9421184114.



Seventy nine years old Mr. Srihari Khorade is of the firm belief that farming is the greatest and benevolent profession in comparison with any other vocation. After completion of SSLC, he started truck business till the age of 24, subsequently he had changed the profession and with great passion taken up farming as the source of his livelihood. Presently, he has around 2500 coconut trees and 180 mango trees. Besides this, he is also having cashew, rubber and kokum plantations. Turmeric, ginger, banana and pepper are intercrops of coconut, which gives sustainable and supplemental income. He opines that these intercrops support him during unexpected price crash in coconut. Due to the intercrops, he could earn 50% more than the regular income of Rs. 1.2 lakhs/ha from coconut based farming. He also believes that the proper selection of intercrops in coconut garden will not only bring you economic advantage but also ensures food and nutritional security especially for women and children. He irrigates the crops from wells by sprinkler, hose and tube irrigation. He said, though sprinkler irrigation uses comparatively more water than drip irrigation, it provides an adequate micro climate for the cropping system, which according to him is very essential for better yield. He practices complete organic cultivation since 2011 and did not face any major pest and disease problems recently. He has good linkage with agricultural and horticultural department and development agencies of Goa State. Due to his active scientific involvement in farming, he received SPLM Patel memorial Best Farmer award in 1997 instituted by Government of Goa and first prize during All India Cashew Show in 1999. He extends his benevolent helping hand to all his peer farmers by giving valuable suggestions and guidance. He is also the member of Coconut Farmers' Association.



Mr. Ashish, a graduate in science started farming during 1987 in the inherited land from his father. After his 30 years of illustrious efforts, he could develop the 70 acres farm land into coconut and arecanut garden with 4000 local variety coconut trees and 1500 local variety arecanut trees. Among 4000 coconut trees, 3200 are yielding at present. He uses organic based manures most of the times and occasionally applies Bordeaux mixtures as a preventive crop protection measure. He developed 10 m long bamboo pole tied with spray tubes powered by 2 HP diesel engine for spraying of arecanut and coconut trees. The sprinkler irrigation is practiced using perennial water stream adjacent to his farm land. He gives irrigation once in three days. Nutmeg, pepper, banana and pineapple are the main intercrops of both coconut and arecanut. Besides this, he also cultivates seasonal vegetables. He practices mulching using agricultural wastes around arecanut and coconut. Every year, nearly 3.80 lakhs coconuts are harvested at an average annual productivity of 120 nuts/tree. 10 per cent additional yield of both main and intercrops is realized by introducing mixed farming. He also undertakes processing and value addition of his farm produces in order to stand against the unpredicted price crash of raw farm produces. He is producing different value added products from jackfruit and mango. He is also having agricultural waste fired dryers for drying coconut, arecanut and pepper. He maintains good linkages with ICAR-KVK, Goa and Department of Agriculture mainly for hybrid coconut seedlings and other planting materials. He regularly participates in trainings and meetings conducted by various agriculture based development agencies. He is always open to his peer farmers to show and demonstrate his innovative farming practices. He is also a member of Coconut Farmers' Association. He also undertakes Agro- Eco tourism by opening his farm to tourists and visitors. Through all the above measures, he could enhance his income at the level of Rs.1.5 lakhs/acre and livelihood by giving good education to his both kids. He could also be able to give employment and accommodation to 25 farm labour families.



Mr. Koushik Ghosh is a successful coconut farmer aged 27 years and educated upto 12th standard. He is involved in farming from his childhood and he owns 8.5 acres land. His whole family is attached in farming. His main crop is mango. He has 2 large ponds covering 2 acres. Coconut is mainly planted in the bank of the pond and surrounding area of his residential complex. He is practicing coconut based farming system by effectively utilizing pond bank, roadside and backyard of his residence. Mr. Ghosh grows 300 coconut palms, out of which, about 200 are in bearing stage within the age of 16-35 years. Remaining palms are of 3-6 years old. Major varieties are East Coast Tall, Local Tall, and dwarf varieties. Different types of intercrops like banana, turmeric, ginger, papaya and arecanut (1000 nos.) are grown in the inter-space of the coconut. Though the whole garden is rain fed, irrigation is provided during summer. Mr Ghosh applies 500 g Urea, 2000 g SSP and 500 g MoP yearly per coconut palm. He used to spray micronutrient mixtures @ 0.1% twice in a year. In case of intercrops, he is not applying any fertilizers except for arecanut. For arecanut, 500 g nutrient mixtures of urea, SSP and MoP are supplied. He used to apply the nutrient after basin opening and cover the basin by paddy straw for water conservation and further decomposition of paddy straw. Coconut leaf is not used or recycled as coconut stick is sold in the market. During summer, he applies pond silt, which is enriched with organic matter and different types of nutrients. Pest and disease problems are very less in his farm. Mr. Ghosh gets 130 coconuts per palm per year. As the demand for tender nut is very high, major share in harvest goes to tendernut. Mature nuts are used only for own consumption. By selling tender nut, Mr. Ghosh earns about Rs. 90,000 from 180 coconut palms with a net return of Rs. 80,000 per year. The farmer initiated neera collection from 20 palms with the help of CPCRI. He is getting 1 litre neera per day per palm. From a single inflorescence, he could collect neera for 20 days. Accordingly, he can harvest 20 litre neera per palm per month. 6-8 inflorescences are tapped for neera collection per year. Mr. Ghosh stated that for one litre of neera, Rs. 40 is spent towards the cost of labour, ice, bottle, electricity and it is sold for Rs. 70 per litre. Hence, a net profit of Rs. 30 is expected per day per palm resulting in a net return of Rs. 3600/palm/year. At present Mr. Ghosh is earning Rs. 1.52 lakhs from his 200 palms. Due to price fluctuation of tender nut, Mr. Ghosh is planning to collect neera from all bearing palms. Mr. Ghosh modified the neera collection box to reduce the cost to Rs. 600 from 2800. For neera marketing, he has developed a marketing channel through sweet shops at Hoogly and Durgapur of Burdwan district with the help of officials of West Bengal State Government. He has good linkage with Department of Agriculture, Coconut Development Board and BCKV, Kalyani for updating his knowledge on farming.

Contact: Mr. Koushik Ghosh, Bakulia, Balagarh, Hoogly, Mobile: 9831524440.



Mr. Asit Ghosh, coconut farmer turned into entrepreneur planning to start neera tapping for increasing the farm income. He is 60 years old, educated upto eighth class. He has 30 years experience in agriculture. He owns a total of 16 acres land. About 3 acres of land is covered by pond wherein he practices pisciculture. About 300 coconut palms were planted on the bank of the pond at a spacing of 12 feet. He has also planted different intercrops in between two coconut plants to get higher return from the system. All the palms are of East Coast Tall type which is of 16 -20 years old. Different types of intercrops like Moringa, dragon fruit, banana, papaya, chilli, brinjal, citrus, jackfruit, pine apple and guava have been planted in the interspaces of coconut palms. Fish and coconut is mainly maintained for commercial purpose. Other intercrops are mainly used for domestic consumption. Mr. Ghosh started neera tapping from 6 palms with an average yield of 2 litres /palm/day and could fetch 100/litre. He applies 1 kg Muriate of Potash and common salt @500 g/palm in the basin. He also applies silt during summer season as a substitute for organic matter. Besides these, 100 g borax per palm per year is also supplied. Mulching of basin with coconut leaf and other dry leaf from his plantation is a common practice. As the palms are on the bank of pond, water availability during summer is not a problem, resulting in reduced cost for irrigation. Rhinoceros beetle is one of the important problems in his garden. Phorate 10 g granules were placed on leaf axil against rhinoceros beetle attack. He is earning more than Rs. 2 lakhs from pisciculture. Besides this, he could harvest about 100-125 nuts per palm per year from coconut. Usually, tender nut is harvested as there is less demand for mature nuts. Local buyers used to harvest tender nut and pay Rs. 8 per nut. Annually, he spends Rs. 50,000 for maintaining 300 palms and earns Rs. 2.4 lakhs with a net return of Rs. 1.9 lakhs. Mr. Ghosh has started coconut farming and neera collection with an aim to disseminate the technology to rural unemployed youth so that they can become self reliant. A considerable number of youth is associated with Mr. Ghosh in pisciculture. Simultaneously, they are also trained in coconut cultivation and neera collection technology. Mr Ghosh is the active member of Lion's Club, ex-chairman and member of Fulia Marketing Cooperative Society. He is also an influential figure among the farming community for his effort on agriculture.



Mr. Nagen Barman is a well known progressive farmer in North Bengal region. He is 86 years old. In last 10 years, he started integration of agricultural activities with animal husbandry and pisciculture for better utilization of natural resources and maximization of profit. Mr. Barman is having a total land of 9 acres, out of which, 1 acre is under pond and 4 acres is low land where paddy cultivation is practiced. In rest of the 4 acres of land, he has coconut, arecanut, bay leaf and other inter/mixed crops. He cultivates coconut varieties like East Coast Tall, Assam Tall and Hazari. He procured the seedlings from ICAR-CPCRI, Research centre, Mohitnagar and local market. All the palms are spaced at a distance of 22 x 22 ft. The garden is manured regularly. He applies 10 kg vermicompost, 2 kg rock phosphate, 1 kg Muriate of potash, 100 g Agromin, 50g borax and 100g carbofuran. Half of the urea, Rock phosphate, MoP, full quantity of vermicompost, borax and carbofuran are applied in pre monsoon and rest of the fertilizers is applied in post monsoon season. Besides these, he uses coconut leaf after stick removal, water hyacinth and paddy straw as mulching materials in the basin. Leaves of arecanut and coconut are also used for vermicomposting. To avoid red ant attack to worms, he uses turmeric powder. The garden is irrigated during summer season. Mr. Barman utilizes all the interspaces by growing crops or raising seedlings of different horticultural crops. Intercrops like papaya, citrus, Elephant foot yam, strawberry, Aswagandha, Bay leaf, etc. are grown under the plantation. Nurseries of bay leaf, arecanut, coconut, black pepper, different medicinal crops are also being maintained. Black pepper is planted as mixed crop on coconut and arecanut trees. So far, pests or diseases are not serious in his garden. But as a safety measure, he use to keep naphthalene balls (6 nos.) in the crown against rhinoceros beetle. He sprays cow urine mixture (1 litre cow urine and 4 litres water) against eriophyid mite. Carbofuran is used in the basin against root grub. Mr. Barman rears 10 numbers of milch cows (Holstein, Jersey and Desi cow) and 8 buffaloes. Buffaloes are used for ploughing purpose as well as for milk purpose. Cow dung and urine is used for vermicomposting and agricultural use. He gets 60 litres of milk which is sold in the local market. On an average, Mr. Barman harvests 100-120 numbers of tendernut/palm/year. Some nuts are also allowed to be matured for seednut purpose. From his 75 numbers of coconut palms, Mr. Barman earns an amount of Rs. 80,000 per year. From coconut nursery, he earns more than Rs. 50,000 whereas he could earn Rs. 10,000 from sale of vermicompost and earth worms. Other intercrops like elephant foot yam, citrus, strawberry and mixed crop like black pepper helps him to get an amount of Rs. 40,000 per year. From the system, he could earn a total amount of Rs. 1.8 lakhs per year. All the family members, particularly his two sons, daughters in law are engaged in farming. In addition, few contract labourers are engaged for raising nursery. He was awarded 'Best farmer award for organic farming'. Being a member of Bharatiya Kisan Sangha, as a resource person in seminars and trainings, he shares his experience with the other farmers. He conducts talks in AIR, Siliguri, Kisan channel, Doordarsan Kendra, Jalpaiguri.

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Contact: Mr. Nagen Barman, Dangapara, Jalpaiguri Engineering College, Kotowali, Jalpaiguri, Mobile: 9153217135.



Mr. Saroj Mistri (62) belongs to Sundarban area which was heavily affected by the devastating storm 'Aila' in 2009. The cultivable land was inundated by salt water making farming a difficult task. Mr. Mistri survived the storm as his 120 nos. of coconut palms were not affected by the storm. He has forty years of experience in coconut farming and fish culture. All the family members are engaged in farming as there is labour shortage due to migration of the youth to cities in search of better avenues. Mr. Mistri has a total land of 12 acres, out of which, 5 acres land is under a pond. Coconut palms are planted on the bank of the pond. Most of the palms around 45 years old. He has extended coconut area by planting 55 additional palms in 2011. Seedlings were purchased from local market and raised in his farm. The palms were spaced at a distance of 20 feet in single line. Different intercrops like arecanut, moringa, turmeric and seasonal vegetables like basella, cow pea, brinjal, colocasia, Elephant foot yam, knolkhol, spinach, cabbage, cauliflower, etc. are grown as per season. Vegetables are mainly grown for domestic consumption. About 400 arecanut palms are grown as mixed crops in interspaces of coconut. Small scale poultry rearing alongwith a few ducks is also done for domestic purpose. Besides he maintains two milching cows and two bulls for ploughing purpose. Mr. Mistri practices regular nutrient application in the form of urea @500 g, SSP @650 g, MoP @ 500 g and micronutrient mixtures @ 100 g per palm and organic matter is also recycled. He also applies semi decomposed paddy straw in the basin for water conservation and nutrient recycling. In addition, pond silt is also applied to the basin. Coconut leaf, after stick removal, is used for fuel purpose or as mulch. Mr. Mistri uses phorate 10 G on crown to avoid rhinoceros beetle infestation. For mite control, neem oil 0.3% is sprayed during summer months. As the place is far away from city, Mr. Mistri harvests tender nuts only for domestic use and for local market fetching him very low price of Rs. 4/nut. Hence, he harvests mature nuts and which is used mainly for raising seedlings, preparation of sweets and rest is sold in local market @ Rs. 10/nut. On an average, 130 nuts per palm per year (80 matured and 50 tender nut) are harvested. The net return per palm per year is Rs. 1000. From pisciculture, he could earn Rs. 1 lakh. He is an active member of Bhan Prachar Parishad of Ramakrishna Mission. He is also the President of Hemnagar Sri Ramkrishna Seva Niketan.

Contact: Mr. Saroj Mistri, Hemnagar, Hagachh, Hingalganj Block, N 24 Parganas, Mobile: 9002344776.



Mr. Naryan Mandal (46), has recently shifted his focus from beekeeping to coconut farming, due to the fact that coconut based integrated farming is more profitable in recent years. He has a total of 25 years farming experiences, of which most of the years, he involved in beekeeping. Due to the price fluctuation and problem of honey marketing, he focused on development of integrated farming system in his existing coconut garden. He has studied upto 12th standard. He lives in a joint family, having 10 members including his parents. From his childhood, he is attached to farming with his elder brother. Presently, he is a member of Ganga farmers' club and the Vice president of Pingaleswar coconut welfare, coconut producer society. Presently, he is maintaining around 4 acres farm land, out of which, coconut palms occupies a space of 1.2 acres with mangoes. Apart from coconut plantation, he also cultivates paddy in his one acre land, followed by jute and mustard in summer and rainy season, whereas he grows marigold and onion during winter season in a sustainable and profitable manner. Mr. Mandal has about 200 coconut palms, out of which about 175 are in bearing stage. The prevalent varieties include East Coast Tall, Local Tall, and some are yellow types. Approximately 15-20 feet spacing between coconut palms are adopted. As inter/mixed crops, he has black pepper, mango, banana, arecanut (500 numbers) utilizing the inter-spaces of coconut. He used his pond and tube well for watering the plantation and other component crops. Though the whole garden is under rainfed condition, during summer spell, irrigation is provided. He is aware of recommended nutrient management of coconut for which he applies 1000 g Urea, 2000 g SSP and 2000 g MoP, 500 g MgSO<sub>4</sub> and 100 g boron per palm per year. He used to spray micronutrient mixtures @ 0.1% twice a year after soil testing. After fertilizer application, he used to cover the basin by paddy straw for water conservation and further decomposition of paddy straw within the basin. He also provides vermicompost/ organic manures from his own unit. He cleans crown, does basin cleaning and weeding on regular basis. Due to eriophyid mite attack in coconut, he incurs considerable economic loss in recent years. Spraying of biopesticides at the rate of 2% neem oil - garlic emulsion (20ml neem oil + 20g garlic + 5g bar soap in 1 litre water) on the bunches from last year onwards, and observed better effects. Mr. Mandal could harvest approximately 250 tender nuts per palm, annually. He sells those nuts at the rate of Rs. 10/nut. Presently, he spends around Rs. 50,000 per annum towards inputs. By selling tender nut, he is earning about Rs. 2.3 lakhs with a net profit of Rs. 1.8 lakhs per annum. In addition, he earns Rs. 50,000 per annum from apiculture. He has good linkage with Department of Agriculture, Coconut Development Board and BCKV, Kalyani for updating his knowledge on farming.

Contact: Mr. Naryan Mandal, Pingaleswar, Jadurhati, North 24 parganas, Baduria, Mobile: 9732758088.



*Mr. Hemanta Kumar Kar*

Mr. Hemanta Kumar Kar, hailing from a remote village of Darabachha is a progressive farmer who always tried to introduce the latest technologies into coconut based farming system. He is 56 years of age, has graduation in Law and is survived by his family comprising wife and two sons, who help him in managing the farming activities. He is much passionate about farming and innovate ways and means of utilizing the space and resources in his farm. Within the farm of 6 hectares, 2 ha area is under coconut, whereas paddy, vegetables and pulses occupy rest of the area. Out of 400 coconut palms, WCT occupies one third and Shaktigopal Tall (ECT) is planted in two third of area under coconut. Palms are in various age groups ranging from 6 to 25 years. He applies chemical fertilizers as per recommendation along with vermicompost and tank silt. Traditional practices like application of paddy husk and pulse husk for mulching, tank silt and common salt for improving soil properties are regularly practiced. Mr. Kar grows arecanut, papaya, pulses, lemon, banana, pine apple, tapioca and other tuber crops like yam in addition to coconut and paddy, the major crops. A large pond, the source of irrigation, is utilized for fish production as well. He also rears Emu (10 nos.) and looking for improving its commercial possibilities. He sells tender coconut in Paradweep market which is around 30 kms away from his farm. Dry coconut is sold in Kendrapara. In addition to this, he prepares virgin coconut oil and coconut sweets in small scale for the local market. According to him, a collective effort is needed by coconut producers for scaling up the production of value added products. From the 350 bearing palms, on an average, 80 nuts per palm is realized and @ Rs. 8 per nut, he gets around Rs. 1.7 lakhs net income. With increasing share of income from tendernuts and value added products, the picture is expected to be rosy in the near future. Mr. Kar has received various awards/recognition for his achievements in farming. In 2011, he was bestowed with the prestigious 'Rajyastharyiya Karshak Samman' award. He was also recognised as 'Best Integrated farmer' by Orissa state government and received the award from the Chief Minister in the year 2010. He also won 'Samman patra' by Gujarat government during 'Vibrant Gujarat' Global Agri samitee in 2013 and 'innovative farmer award' by IIRR, Hyderabad in 2015. He maintains regular contact with research and extension agencies like Department of Horticulture; OUAT Bhubaneshwar, and CDB to keep abreast with latest developments in farm technologies. At present, he is a representative in Orissa state farm advisory committee, Member of district procurement committee, Kendrapara and President of Baladevjee Coconut producer's society. He worked as member of TAC, CDB state centre, Bhubaneshwar and member of governing board of ATMA, Kendrapara. He is always happy to share his experiences and expertise with other farmers.

Contact: Mr. Hemanta Kumar Kar, Darabachha, Marshaghai, Kendrapara, Mobile: 9938475604.



Mr. Pravakar Mohanty is a resident of Ashtaranga village, wherein soil salinity is a major constraint in crop production. He is 50 years of age, with almost 20 years of farming experience. He is survived by a family comprising wife and three children. He owns 60 acres of land out of which 20 acres, around his household, is low lying and used for cultivating paddy and gram. About 40 acres of saline land where the salt water intrusion is regular, shrimp farming is done in large scale. Around 35 large ponds are maintained for two seasons with 1 lakh shrimp seedlings per pond per season. On an average, he could earn a net profit of Rs. 10 lakhs per pond per annum with an investment of 10 lakhs each. As a hard working farmer himself, Mr. Mohanty probed the options of growing coconut on the bunds of the ponds, unutilized for long, and as per the directions of State horticultural department, planted 4000 dwarf coconut seedlings along the bunds at a spacing of 5m. The seedlings were supplied by Horticulture office, Konark. At present, around 400 palms started bearing and he could harvest about 4000 tender nuts which fetched on an average Rs. 10 per nut. The additional expenditure for coconut farming is very negligible as labour cost involved is very minimum. NPK application is done as per recommendation. Irrigation is not required, further reducing the input cost. Mr. Mohanty expects that within next 3-4 years, a net income of 20 lakhs per annum could be garnered from coconut alone. With around Rs. 5 lakhs from paddy and pulses, he sets an example for many others to emulate, where hardwork and willingness to take up new initiatives would make farming profitable. Mr. Mohanty keeps regular contact with the Orissa state department of horticulture, coconut development board and department of fisheries. As an innovative farmer, his initiatives like introducing dwarf coconut into unutilized saline areas would inspire other farmers in the area to come forward and follow his path.



*Mr. Rajanikantha Parida*

Mr. Rajanikantha Parida, hails from the village of Gomundi in Brahmagiri area of Puri which is the major coconut producing region in the state of Odisha. He is 48 years of age, with almost 35 years of farming experience and is survived by his wife and two children. He owns 10 acres of land, out of which coconut is planted in 7 acres. At present, he has 500 palms of local varieties of 35 years of age, planted in recommended spacing of 7.5m x 7.5m. He applies chemical fertilizers @ 250 g urea, one kg each of DAP and MoP in two split doses, during June and September along with the 50 kg compost and 3 kg neem cake per tree per annum. A vermicomposting unit is functional with the aid from Coconut development board. Bud rot disease and mite infestation is managed with integrated measures. In addition to coconut, Mr. Parida cultivates banana (100 Nos.), Cashew (200) and Mango (80Nos.). Rest of the area is utilized by planting Acacia (2000 Nos.). Two cows are maintained for milk and compost purpose. According to him, mixed cropping gives him the flexibility to experiment without worrying too much about the price and yield of a particular crop. The only source of irrigation is bore well and channel irrigation is followed, thrice a week. For water conservation, coconut husk is buried in trenches in between the rows at a depth of 3ft. Major share of labour is met by engaging a tribal migrant family in addition to his own labour costing Rs. 12,000 per month. Climbing charges and tractor charges @ Rs. 40,000 per annum along with Rs. 20,000 for manures and fertilizers adds the total annual expenditure to Rs. 2 lakhs. Coconut yield is around 70 nuts per palm, thus fetches 3.5 lakhs. Further, income from banana (Banthala var.) is Rs. 15,000 @ Rs. 150 per plant whereas mango (Amrapali var.) and cashew (@ 5kg per tree yield and @ Rs. 100/kg) fetch Rs. 80,000 and 1 lakh, respectively. Major value addition is copra making for home use where further scaling up is planned at CPS level with the help of CDB. Mr. Parida maintains regular contact with research and extension agencies like Department of Horticulture; OUAT Bhubaneswar and CDB to keep abreast with latest developments in farm technologies. At present, he is the president of Maa Banadurga coconut producer Society. Mr. Parida has undergone trainings on coconut climbing organized by CDB. He was invited by CDB for the coconut day celebrations on 2<sup>nd</sup> September 2016 in Bhubaneswar. As the leader of the coconut producers in the region, he maintains good rapport with all the stakeholders and takes initiatives to have collective efforts in operations and marketing for the betterment of coconut farming in the area.

Contact: Mr. Rajanikantha Parida, Gomundi, Brahmagiri, Puri-752011, Mobile: 9437177126.



Mr. Aboo Salam, hails from Agatti, aged 65, is a retired teacher and involved in farming from very young age. He has nearly 40 years of farming experience. Now farming is the main source of income to his family. His vast knowledge in the field of agriculture has made him to adopt innovative farming. His wife assists him in some of the farming operations. He has a good societal link and learns farm advancements through his friends. He has 22.5 cents of land with 25 bearing coconut trees. Coconut is the main crop and family is involved in copra business. He collected seed nuts of Laccadive Micro and Laccadive Tall varieties from the Department of Agriculture for planting in his garden. Since spacing between the palms is not followed in this island, most of the palms are overcrowded. Hose irrigation is practiced in the farm during summer months. Besides mulching, poultry manure and cow dung are applied to the palm basins at an interval of six months. Coconut husk burial technique is also followed for moisture conservation. He harvests 24,000 - 30,000 nuts per year from the productive palms. Copra making, preparation of coconut oil and virgin coconut oil is also prepared at home. He collects copra from nearby farmers and along with his own product sells the produce in the mainland. During 2015, he could sell around 16 t of copra. Along with coconut he also grows papaya and vegetables as intercrops. He rears goats and local poultry birds in the homestead. He has recently attended the *Buyer-Seller meet* organized at Kochi during the first week of March 2016. He has plans to make use of the coconut haustorium as well as coconut shell. He is so dedicated and knows everything in his farm with a personal touch. He is the General Secretary of Agatti Island Kera Karshaka Sangham. He was involved in preparing the bye-law for coconut producer's society sponsored by the Coconut Development Board. He maintains linkages with the Department of Agriculture and Department of Fisheries, Agatti and Coconut Development Board.



Mr. Kazim Koya aged 70, a tenth pass out, initially worked as a bank officer. After retiring from the job, he started coconut cultivation. He has nearly 15 years of farming experience. His vast knowledge in coconut cultivation made him to adopt innovative farming techniques. His wife assists him in all farming operations. He is blessed with three children. His family is associated with copra making and oil extraction activities in Kalpeni Island. He owns 2.6 ha of land; 600 bearing and 300 young coconut trees. He used selected coconut seedlings from his own garden. He grows Laccadive Tall and Laccadive micro varieties, the two popular cultivars in this region. According to him, mulching with green leaf manures and coconut leaf in the basin as well as interspaces are very much essential to tide over water shortage, besides providing organic manures in the garden. From the 600 productive palms, the output is about 36,000-45,000 nuts/year whereas from hybrids it is more than 250 tender nuts/palm/year. He has adopted some of the innovative value addition techniques like neera tapping in addition to copra and coconut oil preparation. Neera tapping of 200 palms has been done during 2015 with an average production of 1-1.5 l/day. He owns a coconut expeller mill to produce coconut oil. Dry copra is marketed through NAFED @ Rs. 5950/quintal. He highlighted the limitations in the island conditions to upgrade in the agricultural value chain due to the inherent geographical disadvantage and weak domestic market. He urged that a comprehensive agrarian package for the sectoral development of the island is the need of the hour. He is a simple personality but has vast knowledge and updated to the core with perfection.



Mr. Muhammed Koya, aged 63, studied upto 8<sup>th</sup> standard. He has 45 years of experience in farming. His vast knowledge in the field of agriculture has made him to follow mixed as well as organic farming practices. His wife and five children assist him in all farming operations. He owns 5 ha land. Coconut is the main crop and banana is grown in some pockets of the farm area. Laccadive Tall and Laccadive Micro are the main coconut cultivars grown in the area. He used to select the planting materials from his own garden. Presently, he has nearly 1500 productive palms and 300 young palms in the field. Since particular spacing practices were not followed in the island, most of the gardens in the island are overcrowded. He adopts hose irrigation in the farm. According to him, coconut leaf mulching in the palm basin as well as interspaces are very much essential to tide over water shortage especially in summer, besides providing organic manures in the garden. Once in six months, he applies poultry manure and cow dung to the palm basins. No major pest and disease is observed in his farm. He strongly believes in following organic farming practices and he is also an active member of organic farming society. Mr. Koya also maintains the record of field activities. He maintains two milch animals and goats. Dung and manure obtained from these animals are used for soil enrichment. He used to harvest 60,000 nuts per year from 1500 productive palms i.e. on an average 40 nuts per palm. He is mainly involved in dry copra business. Copra drying activities are taken up in the well maintained drying yard near sea shore. He also procures the copra from more than 600 neighboring farmers. He sells nearly 135 tons of dry copra through a private agent in Kozhikode, Kerala at an average price of Rs. 95 per kg. Coconut shell is also sold in the mainland with an average price of Rs. 1.5/kg. He is open minded and shares his experience with a smile to all who approaches him.



Mr. Arabinda Medhi (40) is a graduate in arts having 25 years of farming experience in coconut cultivation. He is mainly involved in coconut farming and fishery. He has got 55 coconut trees, aged 25 years, planted in 0.20 ha. Arecanut (35 nos), Mango (20 nos.), Litchi (4 nos.) and Jackfruit (3 nos.) are also grown in his farm. Coconut variety is Asom Local Tall and source of planting material is Rishav coconut nursery, Hajo. Spacing adopted is 20 ft x 20 ft. During dry period of October to February, irrigation is provided with hose from nearby pond. During 2009-11, he was included as beneficiary in the scheme wherein free fertilizer distribution was facilitated by Coconut Development Board (CDB) for Urea, SSP, MOP, MgSO<sub>4</sub> and Borax along with other farmers. Since then, he has been following the practices of fertilizer application. Composting and recycling of farm biomass and other waste is not practiced by him, but mulching of coconut dry leaves at the basin of the palms are done. Fruit trees like mango, amla, litchi and jackfruit are planted along with coconut palms, but not in systematic manner. During the initial years of planting, bud rot was observed. Since he could not adopt any control measures, some of the palms were dead. Later on, there was no major pest and disease incidence. Gross return from coconut is Rs. 57,750 after spending Rs. 11,000 for inputs and labour. Nuts are harvested twice a year. After harvesting, the nuts are sold in the local markets or to a contractor who collects directly from garden. The nut is sold for Rs. 15. In addition, he earns a major share of income from pisciculture and fruit trees. He has good linkage with ICAR-CPCRI Research Centre, Kahikuchi and Coconut Development Board, Guwahati centre.

Contact: Mr. Arabinda Medhi, Village Hajo, Panipara, Kamrup, Mobile: 8403963996.



Mr. Bibhuti Medhi (38), a plus two pass out, has 21 years of farming experience in coconut cultivation. In addition to coconut farming, he earns from fishery as well. He is the President of PTA, Hajo Government Primary school. Mr. Medhi planted coconut in 0.3 ha (number of palms is 85 and palms are 30 years old), 60 nos. of arecanut and 10 mango trees. Coconut variety is Asom Local Tall and source of planting material is Rishav coconut nursery, Hajo. Spacing adopted is 20x 20 ft. Hose irrigation is practiced during dry season. Coconut Development Board (CDB) has supplied Urea, SSP, MOP, Mg SO<sub>4</sub> and Borax for 2 years under a scheme for free fertilizer supply during 2009-2011. He continued the practice of fertilizer application from then on. Recycling of biomass through vermicompost is not continued, but basin mulching with dry coconut leaves is practiced during winter and dry season. Systematic multicropping system is not practiced but betel vine are planted along with arecanut palms for home consumption and sale. No major disease or pest was observed. Occasionally, he raises arecanut nursery for local sales. Red ants are very common in the bunch and top of coconut palms. Though the ants do not affect the nuts, it causes difficulty to the climber during harvesting. To manage this problem, he applies common salt @ 0.5 kg per palm at top and bunches of palm during rainy season. Though, the practices may directly be related to farm productivity, it proves very effective in repelling ants and other insects during harvesting. Overall, from 85 palms he could generate a gross income of Rs. 89,250 with annual cost of Rs. 15,000. Harvesting is done twice in a year. After harvesting, the nuts are sold directly in local markets @ Rs. 15 per nut. Many farmers from nearby village visit his farm to gain expertise from him. He maintains a good rapport with officials of Coconut Development Board, Guwahati.

Contact: Mr. Bibhuti Medhi, Village Hajo, Panipara, Kamrup, Mobile: 8876984101.



Mr. Pankaj Das (45) is a plus two pass out having 30 years of farming experience in coconut cultivation. He is mainly involved in coconut farming, coconut nursery and fishery. He has got coconut in 0.65 ha (180 palms & 30 years old), coconut nursery in 0.20 ha, arecanut (25 palms) and aonla (27 trees). Asom Local Tall is the coconut variety grown in his farm. Majority of the nuts harvested are used as seed nuts and nursery is raised at the onset of monsoon. Spacing adopted is 20 feet between trees planted on the bunds of the fishing ponds. He made a ring at 1.2-1.5 m away from base of the palm and gives irrigation manually from his pond with a hose at an interval of 12-15 days during dry season from November to February. He was also beneficiary of Coconut Development Board (CDB) scheme on free nutrient supply to farmers in the form of Urea, SSP, MOP, MgSO<sub>4</sub> and Borax for 2 years during 2009-11. Mr. Das started production of Vermicomposting from the farm waste, especially using coconut leaves by the initiative of CPCRI RC, Kahikuchi since 2010. It was discontinued due to shortage of labour. In addition, the fruit crops like amla, litchi and jackfruit are also planted along with the coconut palms. A field trial for IPM practices against coconut mite was implemented during 2012-14 as recommended by CPCRI RC, Kahikuchi. However, the result was not found encouraging. Water hyacinth (*Eichhornia crassipes*), an aquatic plant commonly found in swampy areas and ponds is a common weed in his ponds. He collects the weeds from the ponds and uses it as mulch at the base of the coconut palm during dry season. He also collects the weed and composts it to apply along with fertilizers. With this method, he believes, the requirement of organic manure could be met. His major income is from the fish farming. Including the revenue from sale of coconut seedlings, gross income is Rs. 3.82 lakhs whereas the annual expenditure is Rs. 63,900. Harvesting is done twice a year. Seed nut required for the nursery is separated and the rest is sold in bulk to the local market or to the contractor as direct procurement from the farm. The nut is sold for Rs. 15. He is a certified farmer of CPCRI RC, Kahikuchi and CDB, Guwahati for coconut nursery. He runs the nursery named 'Rishav Coconut nursery' which serve as the source of quality seedlings in the area. He supplies seedling to many farmers, State departments and CDB. He is in close contact with CPCRI RC, Kahikuchi. Field trials on IDM had been conducted in his field by CPCRI RC, Kahikuchi. Apart from CPCRI, he is in contact with CDB, Guwahati, where he could be part of the scheme like free fertilizer distribution. He is also in contact with officials of State Agriculture and Horticulture Departments to whom he could supply coconut seedlings. He is secretary in Sankardev sangha, Panipara. Mr. Das received Best coconut farmer award by CDB in 2010. He was honoured for his achievements for adoption of IPM in coconut during Kisan mela in 2014 held at CPCRI, Kahikuchi. He had undergone training course of five days on improved method of pisciculture conducted by Fish Farmers' Development Agency, Kamrup, one month training course on mushroom cultivation and two days farmers' training on 'Promotion of seed spices production in Asom' under North Eastern Hill Region Programme.

Contact: Mr. Pankaj Das, Village Hajo, Panipara, Kamrup, Mobile: 8876066280.



Late Mr. Bhasker Hiraji Save from Deheri Village, Umbergaon Taluk, Valsad, Gujarat was a visionary and proponent of organic agriculture way back from 1965. Mr. Masanobu Fukuoka, father of natural farming visited his farm during 1997 and appreciated the efforts of Mr. Bhasker H Save for organic cultivation. Shri Naresh Bhasker Save, son of Shri Bhasker Hiraji Save followed the teachings of his father and continued the tradition of organic cultivation. Today he is a respected farmer and gets invitation from many organizations for delivering lecture on organic agriculture. The Kalpavruksha farm established by Mr. Bhasker H Save is a learning centre for farmers where trainings are organized regularly and the farm is open to farmers on all Saturdays. The whole family of Shri Naresh Bhasker Save consisting his wife, brother, sister-in-law, two daughters and brother's son are all involved in teaching the concept of organic cultivation to farmers. Mr. Naresh is the present Director of Bhasker Save Training centre and Prakrithik Krishi Training Centre. The farm has coconut in 2 ha with 305 bearing and 25 young palms. Arecanut, sapota, banana, custard apple, avocado and yams are intercropped in coconut garden. West Coast Tall is the variety cultivated and according to Mr. Save, the initial seed was collected from sea shore. Need based irrigation through channels is followed with crotons plants as soil moisture indicators (drooping leaves indicate moisture stress). He adopts zero tillage and no weeding, weeds are controlled by shade management and growing cover crops. The farm is under fully organic cultivation with no external inputs for the last 50 years. The nutrient supply is only through recycling of biomass. The entire biomass from all the crops except economically useful parts is returned to the farm. The field is rich in earthworms and according to him, the biomass gets composed within six months. Pest and disease control is also done by biological methods taking advantage of natural food chain. Value addition to the farm produce is an integral part of Mr. Save's philosophy of organic cultivation, where the products are also organic. He produces and markets herbal hair oil as 100 per cent chemical free. He has coconut nursery supplying quality seedlings to farmers and other nurseries. Mr. Save is a known farmer and a trainer for many organizations like coconut development board, KVKs, agriculture departments, AICRP on palms and educational institutions. Efforts made for disseminating organic coconut based production technologies among farmers and awareness creation on organic cultivation are well recognized. The Save family received many awards like, Limca Book of Records for Person of the year award in 1993, Appreciation from Masanobu Fukuoka, Japan in 1997, Jamanlal Bajaj Award in 2000, Sardar Patel Best Farmer award in 2002, Best coconut farmer award by CDB in 2006, Krishi Vikash Samman Patr in 2008, One World Award by Rapunzel IFOAM, Germany in 2010, Award from Govt. of Gujarat in 2014 and Certificate of appreciation from World Agriculture festival, Nasik in 2016.

Contact: Mr. Naresh Bhasker Save, Deheri, Umbergaon, Valsad, Mobile: 9427477904.



*Mr. Harshad Regunad Bhandari*

Mr. Harshad Regunad Bhandari, a young enterprising farmer along with his two brothers turned to coconut cultivation 20 years back. Now he has coconut cultivation in 17 ha land with palms of various ages, wherein 400 palms above 40 years, 300 palms above 20 years and 300 juvenile palms of around 5 years. Intercrops like brinjal, cowpea, cucumber and okra are cultivated in young garden. Coconut varieties are West Coast Tall, Chowghat Orange Dwarf and Gudanjali. The garden is under organic cultivation. He uses farm yard manure, poultry manure and vermicompost for providing nutrients to the palms. In situ composting by digging pits and putting biomass supplement the external application. Mr. Bhandari has seven ponds in his coconut garden for fish culture providing additional income and for harvesting rain water. According to him, integration of pisciculture with perinnee cropping systems like coconut can strengthen the viability of the system especially which will act as a shock absorber in the unfortunate event of market failure and price crash. On the other hand, he cautions that the pisciculture is a challenging task which demands great care and management practices. He further added that the shrimp export, in the recent times has proven profitable and it would be an excellent option in the coconut garden by following the international food safety norms. For Mr. Bhandari, coconut cultivation is mainly for tender nut. He sells the tender nuts in local markets at the rate of Rs. 12 per nut. Mr. Bhandari opined that the research and extension activities should provide more emphasis on tender coconut promotion among farmers by ensuring the availability of adequate good quality and regionally suitable varieties/hybrids for tender coconut cultivation along with the package of practices. He also highlighted the importance of scientific lay out of the coconut garden ensuring the right kind of proportion of tall, dwarfs and tendernut varieties in the newly established gardens.

Contact: Mr. Harshad Regunad Bhandari, Saronda, Umbergoan, Valsad, Mobile: 9879142770.



Mr. N. K. Unnin runs Malabar Co-operative Coconut Farming Society at Kurmadera village of South Andaman. His efforts include the successful conservation of diverse coconut types in the farm, mother palm selection, seed production and supply to other needy farmers, production of quality nuts with high copra content. The farm has diverse, very high yielding palms in an area adjoining to sea coast. He has also successfully incorporated different tree crops, tuber crops and medicinal plants. The palm provides and promotes coconut based eco-tourism thereby become a role model for many other farms in the locality. He carefully nourishes the quality mother palms of Andaman Ordinary, Andaman Giant and Andaman Dwarf coconut populations which is a visual treat to the visitors. The 6300 palms in the garden are over 55 years of age, spreading in an area of 60 ha, high yielding with an average yield of over 80 nuts per palm per year, free from pests and diseases. The farm is organically maintained with recycling of wastes and integration of cattle. Among the palms, 4000 high yielding Andaman Ordinary Tall palms and about 120 Andaman Giant Tall palms needs special mention as it is the only location one can see the palms of these types in such a large number. Besides, the palms of Andaman Green Dwarf, Andaman Yellow Dwarf and Andaman Orange dwarf are also conserved in the farm with a view to further utilize them for tender nut purpose. Apart from supply of seed nuts, the society sends all the nuts for further copra processing, oil extraction and also supplies the nuts to processing industries dealing with desiccated coconut powder. Through his efforts, the coconut farmers in the region are benefited much on the livelihood security through conservation and utilization of coconut genetic resources with integrated farming and enhanced profitability through adoption of processing for value addition in coconut.

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Contact: Mr. N. K. Unnin, Malabar cooperative coconut farmers society, Kurmadera, South Andaman, Mobile: 9434272007.



*Mrs. Kamachi Chellammal*

Mrs. Kamachi Chellammal who hails from the remote village in South Andaman, always reposed good faith in coconut based cropping system for sustainable livelihood. She is 60 years of age and studied upto class six. She has been maintaining coconut based cropping system by effectively utilizing interspaces in her garden for growing different inter/mixed crops and integrating animal husbandry, fisheries and apiculture in a sustainable and profitable manner. Smt. Chellammal has got 3.5 ha of land in which she maintains 2 ha coconut plantation with 465 palms of Andaman Ordinary Tall variety under rainfed condition. The coconut palms are 40-45 years of age and planted at a spacing of 6.5 m x 6.5 m. Interspaces are effectively utilized by a judicious selection of compatible intercrops like pineapple, banana, elephant foot yam, groundnut, chillies, sweet potato, tapioca, vegetables, etc. *Glyricidia* is grown as live fence, the leaves and twigs are periodically cut and heaped in the field covered with banana leaves which helps for partial decomposition. If there is enough moisture in the soil, she adds green manure at the rate of 25 to 30 kg per annum. Different forms of organic manures like compost and farmyard manure are used by the farmers and she does not apply any chemical fertilizer. Clove and nutmeg are planted as mixed crops at the centre of four palms and black pepper is trailed on the coconut and arecanut palms. Besides these perennial crops, banana, elephant foot yam, ginger, turmeric, broad dhanian, pineapple, papaya, cassava, sweet potato and vegetables like brinjal, chillies and leafy vegetable are cultivated as intercrops. She also grows tube rose, gladiolus and marigold in a protected structure. The animal husbandry component of his farm includes two cows, six goats, ducks (60 nos.) and backyard poultry birds (50 nos.), 2 fish ponds in which Indian major carps (Rohu, Catla & Mrigal) are reared. In addition, she maintains 15 honey bee boxes to enhance pollination and earn additional income by sale of honey. Irrigation is done through drip system. A unique feature of agrotechniques adopted by her is the use of coconut leaves and husks as mulching in the plantation. Pest and disease incidence is very low in coconut except rhinoceros beetle incidence. She adopts IPM strategy, in which pheromones play a vital role in controlling the pest population. According to her, it is a simple method in which Jute cloth or thread is stuck to the exterior side of the bucket to provide grip to the attracted beetles, which climb on them and enter into the trap. Beetles attracted by the RB-lure fall into the water in the bucket and get drown. Her innovative indigenous technique of controlling rodent and squirrel is praise worthy. She harvests 27,550 coconuts per annum and spends around 2 lakhs towards the cost of cultivation for different components earns 1.65 lakhs from coconut alone while from round the year cultivation of broad dhanian fetches her Rs 2.5 lakhs per annum. The other promising intercrops are ginger (1.12 lakhs), chillies (Rs. 76,800), banana (Rs. 52,000), Papaya (Rs. 54,000), Tapioca and elephant foot yam (Rs 30,000 each). Daily, she could sell 6 litres of milk @ Rs. 40 per litre. From fish ponds, she earns Rs. 40,000 annually. Net income from the coconut based integrated farm is about Rs. 7.75 lakhs per ha per annum. Effective utilization of family labour is one of the key factors for success in farming. She has received various awards/recognition like, Certificate of Merit in the State level exhibition in 1999, best farmer award in Kisan Mela organized by ICAR-CIARI in 2012, first prize for Flower, fruit and vegetable show organized during the State level Island tourism festival (2013-14). She always keeps in touch with research and extension agencies to update the developments in farm technologies. She is always happy to share her experiences and expertise with other farmers.

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Contact: Mrs. Kamachi Chellammal, Rangachang No-5, Burma Nallah, Port Blair, South Andaman, Mobile: 9933238898.

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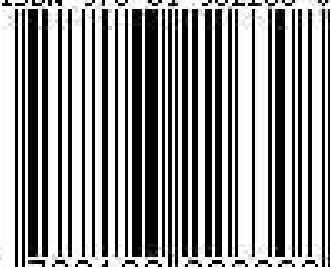
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