WASSAN

A Woman Farmer's Journey with Integrated Intensive Farming in Vikarabad District, Telangana



Harvesting Hope

A Woman Farmer's Journey with Integrated Intensive Farming in Vikarabad District, Telangana

WRITTEN BY

Ms. Sai Leela H

Email: saileela@wassan.org

PUBLISHED DATE

December 1, 2025

SUPPORTED BY

Vikarabad Region Telangana team

LAYOUT DESIGN

Nemani Chandrasekhar, WASSAN, Hyderabad



Harvesting Hope: A Woman Farmer's Journey with Integrated Intensive Farming in Vikarabad District, Telangana

Vikarabad is a district located in Telangana, a southern state of India, and it falls under the semi-arid agro-climatic region. The area experiences erratic rainfall patterns, with an annual average of about 810 mm. Farming in this region is the primary source of livelihood for a large share of the population. Among them, the majority are small and marginal farmers, with a mean landholding size of less than 1 hectare.

Of the district's 136,377 ha of net cultivated area, which accounts for 40.3% of its total geographical area, only 24,661 ha (18.1%) is irrigated. This reveals that a predominant portion of agriculture relies largely on rainfall and is highly vulnerable to climatic stress.

The region's cropping intensity remains low at 110.6%, reflecting that only about 10% of farmers cultivate crops during the rabi season. This indicates that most of the land is single-cropped and predominantly follows monoculture systems. In this region, under rainfed conditions, the major crops grown include cotton, red gram, maize, and green gram, while paddy, groundnut, and vegetables are primarily cultivated under irrigated conditions. Among these, cotton occupies the largest share of the cultivated area.

This over-reliance on monocropping exacerbates the challenges faced by farmers. The shift towards high-input crops like cotton places them in a difficult position, contending with soaring production costs against a backdrop of uncertain returns. The resulting atmosphere of risk renders agriculture a daunting endeavour

Despite these challenges, a woman farmer from Vikarabad district is successfully adopting an integrated, intensive farming system that provides her with a stable, year-round income. Her story stands as a testament to the indomitable spirit of women farmers everywhere, offering inspiration and hope amidst adversity.

ehmuda Begum, a 46-year-old woman farmer owning 3.5 acres of land, resides with her husband Moulana and four children in Linganpalli village of Doma mandal, Vikarabad district of Telangana. In her early years of marriage, she faced severe discrimination from her in-laws for having three daughters, eventually forcing her and her family to leave the house. After moving out, she began running a small kirana shop with a modest investment, marking the first step in building her family's livelihood. To diversify her income, she started trading raw tamarind, buying it from villagers during the harvest season and selling it in the local market, through which she earned a net income of ₹80000 by selling 12 quintals of tamarind.

However, she chose not to reinvest these earnings in the kirana store due to earlier losses from unpaid credit. Instead, she decided to purchase agricultural land, saying, "Gold and money can be stolen, but land can never be taken away," as she believed land would provide long-term security. With no prior farming experience, she purchased one acre of land in 2017 and began her agricultural journey with dairy farming and a mango orchard.

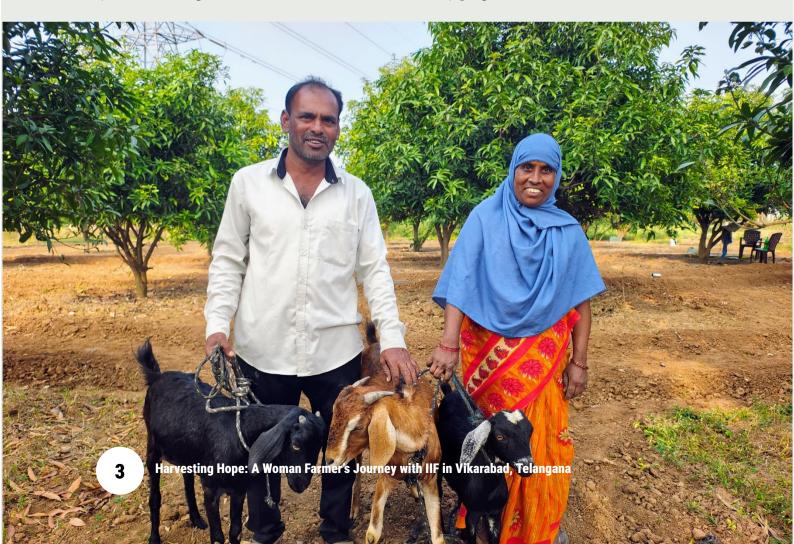
At a time when the entire village and neighbouring hamlets depended on monocropping of paddy and cotton, Mehmuda Begum chose a different path by adopting a diversified farming approach. With savings from dairy farming and her

husband's earnings as a goods transporter, she purchased another 1.5 acres in 2020, and later one acre of ancestral land was added, bringing her total landholding to 3.5 acres. By 2023, her primary income was from dairy farming, earning net income of around ₹1,30,000 annually. Additionally, groundnut was grown as an intercrop in her entire 1.8-acre mango orchard, which is still in its juvenile stage, generating a net income of ₹67,000, while paddy cultivation during the kharif and rabi seasons contributed another ₹80,000, bringing her total annual net income to ₹2,77,000.

In 2024, a turning point came in Mehmuda Begum's farming journey when her husband participated in an exposure visit organised by WASSAN (Watershed Support Services and Activities Network (WASSAN), Telangana, to ASR District, Andhra Pradesh, where the organisation had already implemented several proof-of-concept models on the ground.

During the visit, he observed backyard poultry models, eco-farm ponds, and various other sustainable farming practices in action. Mehmuda also participated in an awareness program conducted by ARAKA Farmers Producer Company at Parigi. Deeply inspired by what they saw and learned during both the exposure visit and the awareness program, the family returned with new ideas and renewed confidence to transform their farming practices. Within the same year, they integrated desi poultry, an eco-farm pond, and other complementary production systems into their existing farm. These additions not only created new sources of income but also strengthened the household's nutritional security. By the end of 2024, their annual net income had increased to ₹4 lakh, marking a significant milestone in their journey towards a more resilient livelihood.

However, this progress came after years of struggle. In the initial years, despite her hard work, Mehmuda faced numerous challenges due to limited knowledge of cattle rearing and farming, including cattle mortality. These setbacks affected her confidence and pushed the family into financial hardship. Yet, she did not give up. With time, learning, and perseverance, she gradually overcame the challenges that threatened her confidence and financial stability. What began as a one-acre farm has now grown into a 3.5-acre integrated intensive farming system, reflecting her resilience, determination, and steady progress.



INTEGRATED INTENSIVE FARM (IIF)



On a total of 3.5 acres of land, 1.5 acres are under paddy cultivation, of which 0.5 acre is desi paddy, 1 acre and 80 cents are developed into a multi-layered orchard farm with vegetable poly-cropping, red gram, and fodder cultivation. The remaining 20 cents include an eco-farm pond measuring $10 \times 8 \times 3$ meters, a storeroom, a dairy unit, and a night shelter for desi poultry could be seen

1. Crop and Horticulture Systems

1.1 Mango Orchard

Until 2023, mango was the only crop grown in Mehmuda's orchard, which was still in its juvenile stage and was expected to enter the productive phase the following year. During this period, she cultivated groundnut as an intercrop in the rabi season, earning a net income of ₹67,000. In 2024, with technical support from the WASSAN team, she began transforming her 1.8-acre mango orchard into a multi-layered farming system. The aim was to make efficient use of the 25 feet spacing between the mango trees and generate additional income from the same land.

Under this model, the first layer consists of 130 mango trees. The second layer includes pomegranate, guava, sapota, amla, moringa, mosambi, custard apple, lemon, curry leaves, and a few exotic fruit plants such as avocado. In the third layer, she cultivates vegetables, fodder crops, and redgram. The crops for each layer were carefully selected based on their canopy size and growth habit to ensure adequate sunlight, airflow, and space for all plants.

Mehmuda earned a net income of ₹28,200 in 2024 and ₹53,200 in 2025 from the sale of mangoes, along with additional income of ₹21,960 in 2024 and ₹64,630 in 2025 from the sale of vegetables and red gram. The fruit crops in the second layer are still in their juvenile stage, and once they begin producing, her income is expected to increase further. This multi-layered farming model has not only enhanced her income but also improved farm resilience, resource-use efficiency, and household nutrition. Through this innovative approach, Mehmuda has clearly demonstrated how efficient land use can significantly improve productivity and profitability per unit area.

MANGO: YEAR-WISE YIELD AND INCOME DETAILS

Details	2024 April - 2025 March	2025 May - 2026 March
Produce (Kg)	1400	1800
Imputed Cost of HH (₹)	1200	1200
Income from sales (₹)	42000	72000
Total Income (₹)	43200	73200
Input cost (₹)	15000	20000
Net income (₹)	28200	53200

1.2 Fodder Integration within the Orchard

Fodder was integrated as the third layer on 5 cents of her orchard farm, complementing the use of paddy straw as dry fodder to diversify green fodder supply. She selected Napier and Super Napier varieties, which can be harvested multiple times throughout the year for 3–4 years. Mehmuda explained that earlier she depended only on paddy straw during the summer, but now she maintains a steady supply of green fodder for her cattle and small ruminants, significantly reducing dependence on external sources.

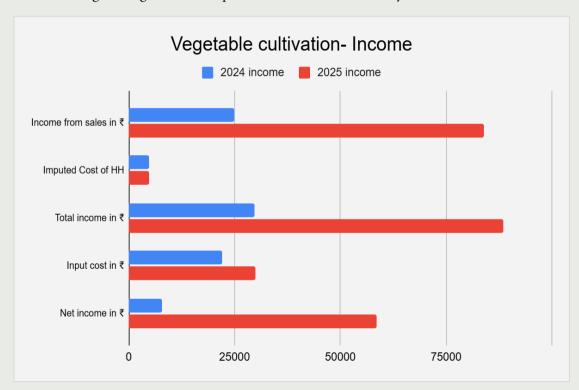
1.3 Vegetable Polycrop

Since 2024, Mehmuda has been cultivating vegetables in a polycropping system on half an acre within her mango orchard. By effectively utilizing the wide interspaces between the mango rows, she now grows seven types of vegetables in a well-planned layout. Tomato, brinjal, and chilli form the primary crop layer, while tuber crops like radish and green leafy vegetables such as fenugreek, coriander, and amaranthus are grown as intercrops. Vegetable creepers like bitter gourd and ridge gourd are planted along the borders, enhancing both productivity and crop diversity.



In the first year, the vegetable plot posed several challenges for her. Heavy weed infestation and low returns made the effort seem discouraging at first. However, she did not give up. By adopting improved practices such as mulching, drip irrigation, and natural farming on the same plot, the situation gradually began to change. The cost of weeding came down sharply, and the farm started yielding better results. By 2025, her hard work paid off with a net income of ₹58,630, translating to nearly ₹2,400 per week for six months through local vegetable sales.

She adopted this model to secure a steady supplementary income alongside her orchard crops. The cultivation of seven types of vegetables from a single plot now acts as a "one-stop market," attracting more customers from the local area. She also supplies fresh produce to nearby hotels and community functions, further strengthening her market presence and income stability.



1.4 Redgram

In 2024, in about 25 cents Mehmuda cultivated red gram as intercrop in mango orchard during the kharif season. She incurred an input cost of ₹4,000 and harvested 2.6 quintals of redgram. Of this, 20 kg—worth ₹1,400—was retained for household consumption, while the remaining produce was sold in the market, earning her a net income of ₹14,200 at a price of ₹70 per kg.

This year, during Kharif, redgram has been sown on 10 cents of land. Although the crop is yet to be harvested, based on its growth, she is expecting a yield of about 1 quintal, valued at approximately ₹6,000.

1.5 Paddy

Earlier, on a total of 1.5 acres, she cultivated MTU 1010 and Hamsa varieties of paddy. From 2024 onwards, she began cultivating traditional paddy varieties such as Navara and Godavari Isukalu on 0.5 acre during both the Kharif and Rabi seasons, while the remaining 1 acre continues to be cultivated with MTU 1010 in both seasons mainly for market sales. Azolla, a fast-growing aquatic fern, is also growing in the paddy fields and is used as a nutritious feed for fish, livestock, and poultry. While traditional rice varieties are largely retained for household consumption, only small quantities are sold at better prices for interested individuals.

In 2024, she harvested 6 quintals of Godavari Isukalu and 5.5 quintals of Navara rice. The entire Godavari Isukalu harvest was reserved for household consumption, while the Navara rice was sold at a good market price of ₹100 per kg of rice. Earlier, the family used to grow and consume the Hamsa variety, but they now consume traditional rice varieties daily, enhancing both food quality and nutritional value.

Season	Variety	Area (acres)	Yield (quintals)	Price per QtI (₹)	Imputed cost of HH in ₹	Income from sales in ₹	Total Income (₹)	Input Cost (₹)	Net Income (₹)
Kharif 2024	Godavari Isukalu	0.5	6	6,000	30000	6000	36000	30,000	48750
	MTU 1010	1	19	2,250	0	42750	42750		
Rabi 2024	Navara	0.5	5.5	9,000	1800	47700	49500	30,000	64500
2024	MTU 1010	1	20	2,250	0	45000	45000		

In Kharif 2025, she cultivated Godavari Isukalu on 0.5 acre and MTU 1010 on 1 acre, with expected yields of 6 quintals and 18 quintals respectively. However, due to heavy and continuous rainfall, the crops were affected, and her estimated net income is likely to be around ₹53,500.

Millets: Due to limited water availability, paddy cultivation in rabi had become increasingly difficult for Mehmuda. To address this challenge, she is transitioning from paddy to ragi cultivation on one acre of land for Rabi 2025, as ragi requires significantly less irrigation.



2. Integration of different Livestock and Allied Production Systems

Under the integrated livestock production system, Mehmuda Begum rears large ruminants (milch animals), small ruminants (goats and ram lambs), poultry, and fish. All these components complement her cropping system and contribute to household income and nutrition.

2.1 Dairy

Mehmuda Begum was rearing two Jersey-cross cows and one calf in 2024. Taking both peak and lean milk-yielding periods into account, she obtained an average of 15 litres of milk per day. Of this, around 1 litre is retained for household consumption, while the remaining milk is sold in the village at ₹35 per litre, generating a gross income of approximately ₹15,000 per month.In 2025, when one of the cows entered the gestation period, she purchased another cow in October to ensure a consistent milk supply and maintain steady income.

With the increased herd strength, she was able to sell an average of 18 litres of milk per day at ₹35 per litre. By October 2025, she had sold a total of 4,320 litres of milk, incurring an expenditure of ₹40,000 and earning a net income of ₹1,11,300. According to her estimates, she is likely to earn an additional ₹34,000–35,000 from milk sales by March 2026.

The monthly expenditure on cows is about ₹5,000, which includes the cost of groundnut cake and cattle feed. For dry fodder, her 1½-acre paddy field provides sufficient supply throughout the year. Earlier, she depended solely on paddy straw for fodder, but after intercropping Napier and Super Napier along with multispecies fodder in the mango orchard, she now ensures a steady supply of green fodder as well. The management of diverse fodder sources not only ensures a balanced diet for the livestock but also contributes to improved milk yield and better animal health.

Dairy Unit-Income details

Year	2024 April - 2025 March
No of milch animals	2
Milk Yield/Day in litre	15
Milk Yield/year in litre	5475
Average Price ₹/Lit	35
Imputed Cost of HH in ₹	12775
Income from sales in ₹	178850
Total Income in ₹	191625
Input cost in ₹	60000
Net income in ₹	131625

2.2 Goats and Ram Lambs

In 2024, Mehmuda Begum diversified her farm by introducing small ruminant rearing as an additional source of income. She purchases ram lambs every year during December–January, rears them for five months, and sells them during the Bakrid festival to take advantage of high market demand and better prices. In 2024, she purchased four ram lambs for ₹23,000 and sold three of them for ₹12,500 each, while one was retained for a family function.

She also maintains three female goats and one male goat, which help in gradually increasing her herd size. This year, three goats worth ₹30,000 were used for family functions. Unlike many farmers, she does not need to take her animals out for grazing. The animals are free-ranged within her mango orchard, field bunds, and harvested paddy fields, which helps in natural field cleaning and significantly reduces feed costs.

This year as well, the couple has decided to target the Bakrid market. They plan to purchase 15 weaned ram lambs during December–January 2026, rear them for four months, and sell them during the festival to secure better prices. Based on their experience in lamb rearing, they are expected to earn a net income of approximately ₹90,000.

Income from Ram Lamb rearing

Year	2024		
Batch	Batch 1	Batch 2	
Duration of Rearing	5 months	10 Days	
Number of units purchased	4	32	
Number of units sold	3	32	
Selling Price per Unit (₹)	12500	6500	
Imputed Cost of HH ₹	12500	0	
Income from sales (₹)	37,500	2,08,000	
Total Income (₹)	50,000	2,08,000	
Purchasing Cost of total units (₹)	23000	189824	
Net Income (₹)	27,000	18,176	
Total Net Income (₹)	45,176		



2.3 Poultry

Before April 2024, Mehmuda had only three hens, which were reared mainly for household consumption. After receiving financial support of ₹7,500 from ARAKA FPC to strengthen the Backyard Poultry unit, she purchased 20 desi birds and constructed a night shelter. She also received 150 improved-breed birds under a subsidy program from the Veterinary Department.

Within four months, the flock expanded rapidly. She sold about 100 birds at ₹500 per bird, earning nearly ₹50,000 gross income and also 200 eggs with a price of ₹5 each. Around 40 birds worth ₹20,000 were used for household consumption and family functions. The birds are free-ranged within the orchard, feeding on insects, damaged vegetables, grasses, and azolla from the paddy field, which helps reduce feeding costs. This has become a profitable and sustainable component of her integrated farming system.

In May 2025, she suffered a major setback when a wild animal attack wiped out her entire poultry stock in a single night during her daughter's marriage. In October 2025, she restarted the unit by purchasing 20 desi birds for $\gtrless 6,000$ and 200 Sonali birds with SERP support at a cost of $\gtrless 24,000$.

At present, the farm has 220 birds. She plans to sell about 150 birds during Sankranthi and local jatharas between January and March 2026, expecting a net income of about ₹47,000, apart from household consumption. About 50–70 birds will remain as stock.

Year	2024 April - 2025 April
Number of Birds Purchased	170
Number of Birds Sold	100
Imputed Cost of HH ₹	20000
Income from sold eggs in ₹	1000
Income from selling birds in ₹	50000
Total Income (₹)	71,000
Cost of feed (₹)	9000
Cost of Birds Purchased (₹)	5000
Net Income (₹)	57,000

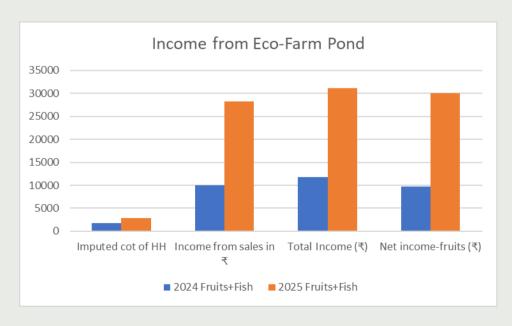


2.4 Eco-Farm Pond

Earlier, the farm pond measuring 10 × 8 × 3 meters was mainly used to store rainwater for irrigation and protect crops during dry spells. With technical guidance from the WASSAN team, it was later converted into an eco-farm pond by introducing fish rearing and planting horticultural crops along the bunds, turning it into a productive, income-generating asset. Good-quality fingerlings were facilitated and delivered directly to her farm by ARAKA FPC, which reduced transportation costs and made the process easier. In June 2024, the pond was stocked with 1,000 fingerlings: 400 Rohu, 300 Catla (Boccha), and 300 Goldfish (Bangaru Teega). These species occupy different layers of the pond: Catla at the surface, Rohu in the middle, and Goldfish at the bottom, which reduces competition and improves nutrient use.

The fish were reared for eight months. The pond mainly depends on rainwater; during dry periods, borewell water is used and later recycled for crop irrigation. Low-cost, locally available feed such as poultry manure, cow dung, azolla, and coconut cake was provided. In 2024, she harvested about 30 kg of fish and sold it at ₹150 per kg, while 5 kg was retained for household consumption. Unfortunately, the remaining stock was lost due to theft, causing a major setback.

To further strengthen her income, she also received horticulture saplings—8 bananas, 4 papaya, 4 coconut, and perennial red gram—planted along the pond bunds. From the banana plants, she earned ₹2,000 by selling five bunches, while two were used for household consumption. The papaya plants have yielded about 110 fruits so far; 10 were consumed at home and the rest were sold in the local market at ₹50 each.



In June 2025, they restocked the pond with 600 fingerlings. Mehmuda's husband, Moulana, explained that even with a possible 50% mortality rate, they still expect to harvest around 300 fish this year, each weighing about 0.6 kg. Based on this, the harvest is likely to provide a net profit of approximately ₹18,000.

2. Integration of Production Systems

According to Mehmudha, integrating multiple production systems on the farm has greatly reduced her dependence on external input. The livestock component provides farmyard manure and cow urine, which are used to prepare natural farming formulations for crop cultivation. Crop residues are reused as dry fodder, while poultry manure serves both as a nutrient source for the fishpond and as an organic input for the crops.

Poultry birds feed on insects and leftover vegetables within the orchard, and at the end of the vegetable season, crop residues are used to feed goats and ram lambs. Azolla grown in the paddy fields serves as a nutrient-rich supplement for both livestock and fish. This well-integrated approach has created a self-sustaining cycle where each component supports the other, minimizing input costs, enhancing soil fertility, and ensuring efficient resource use across the entire farming system.

3. Impact on Household Nutrition

Integrated Intensive Farms have strengthened household nutrition by ensuring consistent access to diverse and nutrient-rich foods. The model's multiple production systems - ranging from vegetables and fruits to dairy, poultry, and fisheries - support continuous consumption as well as year-long income, which together improve both food security and dietary quality.

Contribution to HH Nutrition from IIF 2024 April - 2025 March)

Crops	Kg/bunches/Nos	Unit cost	Total value			
Fruits	Fruits					
Mango	40	70	2800			
Banana	2	400	800			
Papaya	10	30	300			
Pulses						
Redgram	20	70	1400			
Cereals						
Paddy	5.2	6000	31200			

Crops	Kg/bunches/Nos	Unit cost	Total value		
Animal Protein					
Poultry	40	500	20000		
Goat	3	10000	30000		
Ram Lambs	1	14500	14500		
Fish	5	100	500		
Eggs	30	5	150		
Milk	365	35	12775		
Vegetables	120	40	4800		
Total Value			119225		

4. Ecosystem Support that Strengthened Her Integrated Farming Journey

Reflecting on the transformation in her farming system, Mehmuda Begum shared, "The exposure visit to Visakhapatnam in 2024, organized by WASSAN, helped us a lot to add more to our lives." During the visit, she and her husband witnessed how farmers were successfully integrating fish farming, poultry, and vegetable cultivation on the same farm. "When we saw how other farmers were growing fish, keeping poultry, and cultivating vegetables together, we felt we could also do the same. After coming back, we started these activities on our farm. Now, we earn better, get good food for our family, and use almost everything from our own field," she said with pride.

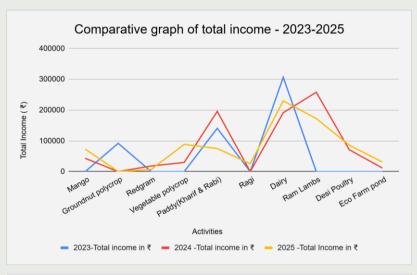
Beyond exposure and technical guidance, continuous local institutional and government support has played a crucial role in sustaining Mehmuda's integrated farming model. ARAKA FPC provides regular handholding and market linkages, while WASSAN's livestock coordinator, Narsimulu, who has extensive experience in livestock management, visits the farm frequently to guide the family on animal care, medicines, and vaccinations, and facilitates linkages with the Veterinary Dispensary for timely services. Government scheme support has further strengthened the system—MGNREGA supported pit digging for orchard plantation, and also provided subsidy for constructing the dairy shed. The Horticulture Department assisted with the drip irrigation system, while the Veterinary Department extended support for poultry. Together, this convergence of community institutions, technical agencies, and government services has created a strong and reliable support system for sustaining Mehmuda's integrated farming journey.

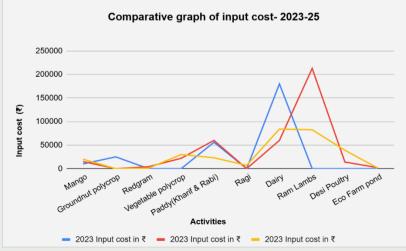


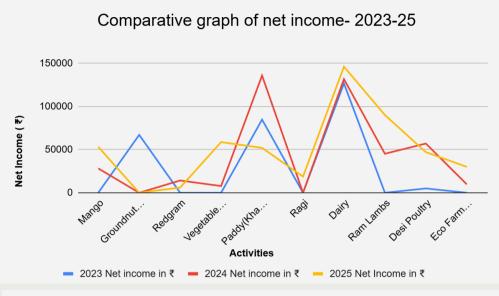
5. Learning from the Case Study

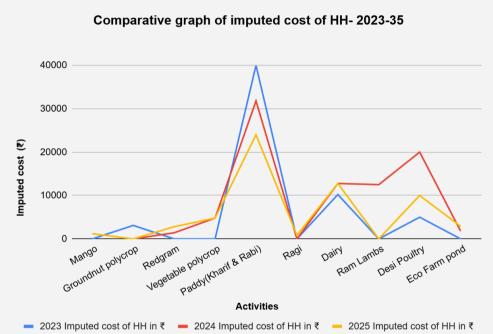
The three-year comparison of total income, input cost, and net income shows a consistent strengthening of farm performance. Total income rises notably across most activities especially Dairy, Vegetable Polycrop, Ram Lambs, Desi Poultry, and Paddy indicating improved productivity and stronger market engagement. Lower-income enterprises such as Mango, Ragi, and Eco Farm Pond provide stable supplementary earnings, supporting diversification within the farm system.

Input cost trends reveal that high-investment enterprises also deliver higher profitability, demonstrating strong cost—benefit returns. Net income improves steadily from 2023 to 2024 and remains strong in 2025, reflecting better management practices and efficient allocation of household labour and resources. Overall, the data indicates a shift toward more profitable and resilient farm operations, supported by diversification and improved productivity over time.







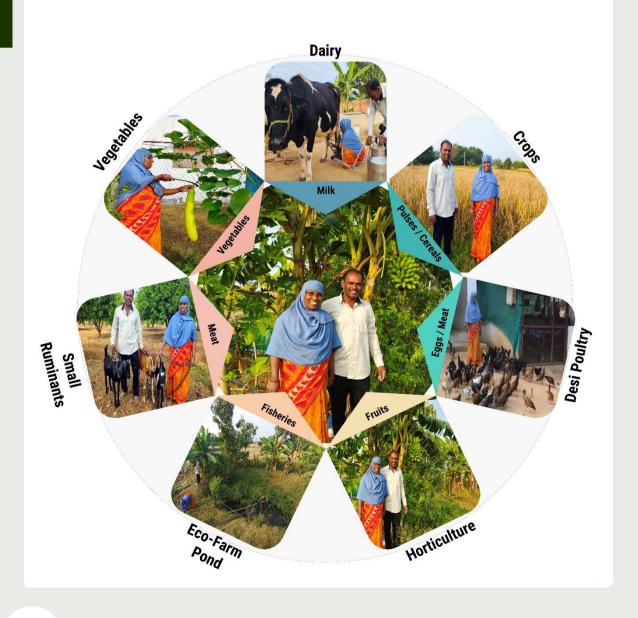


The graph illustrates the contribution of different production systems to household food and nutrition from 2023 to 2025. The trend shows that activities such as dairy, paddy, vegetable Polycrop, and desi Poultry contribute significantly to the daily food basket of the household, as they provide regular access to milk, rice, vegetables, and meat. Dairy continues to play a central role across all three years by ensuring a steady supply of milk for household consumption, along with income support. Vegetable polycrops and desi poultry show a clear increase in their contribution over time, indicating improved dietary diversity and availability of fresh, nutritious food at the household level.

Activities like Mango, Redgram, Eco-farm Pond, and Ragi also contribute to seasonal nutrition through fruits, pulses, fish, and millets, though their availability is periodic. The gradual increase in overall contribution from 2024 and 2025 reflects the family's growing focus on nutrition-sensitive farming. This trend not only highlights improved access to diverse foods but also implies the increased effort, time, and care invested by the farming household in managing multiple production systems to strengthen both livelihoods and nutrition security.

Integrated Intensive Farm (IIF)

Contributing to Stable incomes and Household nutrition



6. Conclusion

The strong ecosystem of support created through exposure visits, regular technical guidance, community institutions, and government services has enabled Mehmuda's family to successfully adopt and sustain an integrated intensive farming system. Her journey shows that when local support systems work together, smallholder farmers can build resilient and profitable livelihoods.

Integrated intensive farming offers a practical and sustainable solution for present-day agriculture in India. By combining crops, livestock, fisheries, and orchards on the same farm, families can improve their income as well as their food and nutrition security. Practices such as poly-cropping, year-round crop cover, natural farming, and on-farm fodder production help in improving soil health and reducing dependence on costly external inputs. These systems are also better suited to manage the impacts of climate change and biodiversity loss.

Rooted in traditional knowledge and strengthened with modern understanding, integrated farming restores balance between people, land, and nature and offers a secure and dignified future for small and marginal farmers.





Watershed Support Services and Activities Network (WASSAN)

Door No. 685, Street No. 12, Narasimha Swamy Colony, Nagole, Hyderabad – 500 068, Telangana, India Email: mail@wassan.org | Website: https://www.wassan.org