MBM-CARI - I

Integrated Farming System (IFS)

Rationale

Agriculture in this millennium, due to emerging production scenario, higher economic growth, population explosion and shifts in dietary pattern has changed the supply and demand profiles of food respectively. Integrated farming systems (IFS) seems to be the possible solution to meet the continuous increase in demand for food, stability of income and diverse requirements of food grains, vegetables, milk, egg, meat etc., thereby improving the nutrition of the small-scale farmers with limited resources. Integration of different agriculturally related enterprises with crops provides ways to recycle products and by-products of one component as input of another linked component which reduce the cost of production and thus raises the total income of the farm. Multiple land use through integration of crops, livestock and aquaculture can give the best and optimum production from unit land area. In other words, Integrated farming system is a resource management strategy to achieve economic and sustained production to meet the diverse requirement of farm household while preserving resource base. IFS can be practiced as micro business by farm youth for attaining regular income. IFS reduces the risk of failure as often one component or one crop based business leads to market instability. The other advantages of IFS include effective recycling of residues with in the farm there by reducing the cost of production per unit area.

Technical details

Area : 2000 m^2

Components

Crop/ Cropping sequence : 1500 m^2

Livestock components : 100 m^2

Farm pond and well : 250 m^2

Composting unit, storage godown, threshing floor etc : 150 m^2

Details of components

1. Crop/ Cropping sequence : 1600 m^2

Dry season (Feb – May)		Wet season (June – Oct)		Post wet season (Nov-January)	
Crop	**Area (m^2)**	**Crop**	**Area (m^2)**	**Crop**	**Area (m^2)**
Ginger-Fodder					200
Arecanut + Blackpapper + Crossandra					200
Sugarcane*+Marigold+Amaranthus					500
Vegetable + Marigold	500	Rice*	500	Maize	500
Fodder (Cumbu Napier /Para grass)		100			

* Rice and sugarcane needs to be rotated every year to reduce the pest build up

2. Livestock component : 100 m²

Species	No's	Area (m²)
Milch cow	3 No's	21
Bullock	2 No's	9
Backyard poultry	60 No's	20
Goat	11 No's	20

3. Farm pond, well & Azolla : 250 m²

Farm pond	1 No	200 m²
Poultry shed over pond	1 No	-
Poultry	16 No's	8 (with in the pond)
Duck	5	-
Embankment	Fodder, Marigold, Papaya,sapota, Guava, Fodder trees	-
Well	1 No	25 m²
Azolla	1 No	25 m²

4. Composting unit, storage godown, threshing floor etc : 150 m²

Item	Quantity	Area (m²)
Compost pits, rings (Vermi & quick composting)	2 No	50
Storage godown for inputs/outputs	1 No	50
Threshing cum drying floor	1	50

**Gliricidia* on the fence for fodder and green manure*

Input required & Source of availability

Input	Source of Availability
Seeds/Planting materials	Retail seed stores/CARI/Department of Agriculture/Near by farmers (Calicut)
Earthworms	Farmers / by collection from field
Bio control agents like *Trichoderma, Trichogramma,* insect traps, lures	CARI/Department of Agriculture/ CIPMC
Quick compost powder	Retail outlet

Input	Source of Availability
Milch cow	Farmers
Goat kids	Farmers
Poultry /ducks	Animal husbandry department of A&N, CARI
Fingerlings (Catla, rohu, mirgal, fresh water prawn)	Fisheries department, Andaman and Nicobar Administration
Azolla	CARI/farmers
RCC rings	Ring manufacturers

Flow chart, Time schedule & Cash Inflow

Farm development (Bunding, leveling, making of ring well, farm pond, Composting unit, Azolla)	2 months	Invest Rs. 50000
↓		
Collection of seed/ planting materials, Purchase of Animals/ poultry/duck, goat, establishment of shed over pond/fingerlings	2 months	Invest Rs. 50000
↓		
Planting and management of all the crops in all the season	12 months	Invest Rs. 40000 (Recurring cost)

*Total investment in 16 months : Rs. 140000

Expected cash in & out flow in different months

Cycle	Period	Component	Cash Inflow (Rs)	Cash outflow (Rs.)
First	1-4th month	-	100000	-
	5-8th month	Rice	40000	1600
		Eggs from poultry, ducks		3240
	9-12th Month	Vegetables, flowers		8000
		Eggs		8100
	13-16th month	Sugarcane		9300
		Crossandra		12500
		Ginger		4125
		Marigold		5150
		Maize		2650
		Fruits		500
		Eggs		8100
		Milk		25000
		Goat		18000
		Fish		3750
	Total		140000	110015
Cash position after first cycle (16th month)				**- 29985**
Second cycle	17 - 20th month	Rice	25000	1600
		Eggs from poultry, ducks		8100
		Milk		25000
		Amaranthus		1000
	21- 24th month	Vegetables, flowers	10000	8000
		Eggs		8100
		Goat		12000
	25- 28th Month	Sugarcane	5000	9300
		Crossandra		12500
		Ginger		4125
		Marigold		5150
		Maize		2650
		Fruits		500
		Eggs		12000

Cycle	Period	Component	Cash Inflow (Rs)	Cash outflow (Rs.)
		Goat		18000
		Fish		3750
	Total		40000	131775
Cash position after second cycle (28th month)				**61790**
Third cycle	29 – 32nd month	Rice	25000	1600
		Eggs from poultry, ducks		8100
		Milk		25000
		Amaranthus		1000
	33- 36th month	Vegetables, flowers	10000	8000
		Eggs		8100
		Goat		12000
	37- 40th Month	Sugarcane	5000	9300
		Crossandra		12500
		Ginger		4125
		Marigold		5150
		Maize		2650
		Fruits		500
		Eggs		12000
		Goat		18000
		Fish		3750
	Total		40000	131775
Cash position after second cycle (40th month)				**1,53,565**

Net returns in three years = 1, 53,565
Net income per annum per ha = 2.55 lakhs

The costing includes cost of family labour and therefore, the total income to family will be much higher.

Market Linkage: Sale of farm produces in the local market, milk & egg through co operative society