



INTEGRATED AGRICULTURE- AQUACULTURE - IN RURAL DEVELOPMENT

This project is the outcome of a group efforts to whom credit and technical responsibility goes. The project which has been supervised by Dr. Abdel Rahman El Gamal is a part of "Integrated Rural Development" training course". This annual course is organized by the Egyptian International Centre for Agriculture (EICA). Names and picture of team members who developed this project is shown in the following two slides.

ENGLISH GROUP

1. John Amuzu Aguadze - Ghana
2. Mohamed Bah - Sierra Leone
3. Esther Oscar Mfugale - Tanzania
4. On-Anong Srisuwittanon - Thailand
5. Mohamed Al Gunid - Yemen
6. Martha Otene - Nigeria
7. Ming Hu - China
8. Liu Yicheng - China
9. Asep Adinata - Indonesia
10. Elisabeta Makrevska - Macedonia
11. Tashi Sandup - India
12. Adugna Legese - Ethiopia



Introduction - *Aquaculture*

- ***Aquaculture*** is the farming of aquatic organisms in inland and coastal areas. Thus aquaculture is an integral and indivisible part of the management of aquatic resources. Aquaculture has an important role in the development of many national economies and plays a key role in rural development

Introduction - Integrated farming

□ Rationale of Integrated Farming

- Integrated fish farming is generally considered particularly relevant to benefit the rural poor.
- Can create employment opportunities, improve nutrition and income of rural populations;
- Increases the efficiency of both livestock farming and fish through the profitable utilization of animal and feed wastes (Vincke, 1988);
- In recent years it has received considerable attention in many developing countries for instance in Asia, some countries in Africa) and South America
- Simultaneous production of fish in ponds, with pigs, duck or chicken rearing in pens, beside or over the ponds constitutes a continuous organic fertilization of the pond by the livestock
- Rice-fish culture can actually increase rice yields (up to 10% in some cases) while providing farmers with an important source of protein and extra income.
 - Implementation is relatively inexpensive and low-risk.

Types of aquaculture

- **Rice-Fish**
- **Duck-fish**
- **Vegetable**
- **Livestock-fish (chicken, pigs, etc)**
- **etc**



Duck-Fish Farming

- concept of an efficient use of water area to increase its biological productivity through the use of duck droppings which either fall directly in water or are collected from duck sheds and used for fertilizing the ponds.
- Ducks usually consume tadpoles, mosquitoes and dragon fly larvae which are not consumed by fish.
- Another advantage is that ducks feed on snails which are vectors of certain fish parasites.
- Ducks are sturdy (rarely fall sick)

Background/Problem Statement



- ❑ Poor living conditions
- ❑ Protein nutrition deficiency among farming communities;
- ❑ Inadequate income for farming communities
- ❑ Low agriculture productivity
- ❑ Seasonality of traditional farming system thus limited seasonal employment
- ❑ Rapid depletion of soil fertility

Justification

- ❑ Round the year employment
- ❑ Income of farmers assured
- ❑ Malnutrition reduced among farming communities
- ❑ Cost of crop production will reduce fertilization of farm by the fish & vice versa
- ❑ Living conditions improved
- ❑ Optimum utilization of water resources improved



Goal

- Improvement in income and increase employment in project area in a time bound period

Objectives

- By December 2010, 10% of the unemployed in project community will be in gainful employment
- By December 2010, incidence of reported cases of malnutrition will reduce by 20%



Project description/Strategies

- Development of an IAS demonstration site in on-farm water storages typically used for irrigated agriculture
- Conducting on-farm production trials
- Demonstration of improved utilisation of water resources and its resultant economic and environmental benefits
- Developing and quantifying robust farm diversification strategies
- Utilising the demonstration site for practical extension activities highlighting the needs and potential of IAS across rural areas (replication)

Methodology

- Organize formative assessment (physical and socio-cultural to determine religious, cultural/traditional beliefs etc that may likely affect the project implementation)
- Identify and meet stakeholders e.g. CBOs, NGOs) for sustainability
- Organize community meetings to sensitise community on the project objectives and education
- Set up demonstration plots for short initial success
- Organize training session for prospective beneficiaries
- Provide seed capital for prospective beneficiaries by arranging soft loans
- Link with governmental programs and support of project

ACTION PLAN

ACTIVITY	PERSON RESPONSIBLE	ACTION BY	TIME FRAME												REMARKS		
			J	F	M	A	M	J	J	A	S	O	N	D			
Conduct formative assessment (using PRAs)	Project Director	Project Coordinator	X														
Identify & meet stakeholders		PC	X														
Organise community meetings		PC	X														
Set up implementation committee		PC	X														
Plan with committee		PC		X													
Make procurements		Procurement officer		X													
Train prospective beneficiaries		Training Officer		X	X												
Site selection & negotiation for demonstration farm					X												
Refresher course for extension staffs		Training Officer			X	X											
Set up demonstration farm		Agric Ext Officer				X											
Provide seed capital to prospective beneficiaries		Project Accountant					X										
Provide extension services		Extension officers					X	X	X	X	X	X	X	X	X		
Draw monitoring schedule		PC, PIC					X										
Monitor the programme (monthly)		PC, PIC					X	X	X	X	X	X	X	X	X		
Evaluate programme		PC, PIC						X							X		

Final inputs & outputs

Inputs				Outputs				Net revenue
Item	Qty/ number	Cost/ unit (LE)	Total (LE)	Item	Qty	Value/ unit (LE)	Total (LE)	
Rice and vegetable production								
Land rent (total)	10 acres	Not included & should be considered						
Labour for rice farm (8 acres)	10 for 3 months	100/ mon.	3000					
Rice seed	8 bushels	100	800	Husk rice	100 50-kg bag	100 LE/bag	10000	6200
Labour for vegetable production (2 acres)	3 for 3 months	100	900					
Vegetable seeds		100	100	Assorted vegetables	500 kg	5 LE/kg	2500	1500

Final inputs & outputs

Inputs				Outputs				Net revenue (LE)
Item	Qty/ number	Cost/ unit (LE)	Total (LE)	Item	Qty	Value/ unit (LE)	Total (LE)	
Fish production (as in rice production)								
Fingerlings	500	2	1000					
Feed pellets			250	Food fish	500 pieces (3/kg)	LE 10/kg	1670	420
Duck production								
Ducklings	30	10	300	Ducks	60	LE 30/duck	1800	
Coupe construction	5	20	100					
Duck feed	25-kg bag	175	175					
Drugs		50	50					1175

BUDGET 1

ACTIVITY	Quantity	Unit Price (LE)	Beneficiary Contribution (LE)	Project Contribution (LE)	Total (LE)
Conduct formative assessment (using PRAs)					
Fuel (litre)	16	1		16	16
A-4 sheet	2 reams	25		50	50
Sub-total				66	66
Identify & meet stakeholders					
Fuel (litre)	16	1		16	16
Refreshment	20 persons	10 per person		200	200
Sub-total				216	216
Organize 3 community meetings					
Fuel	48	1		48	48
Refreshment	20 persons	10 per person		200	200
Sub-total				248	248

BUDGET 2

ACTIVITY & COST	Quantity	Unit Price (LE)	Beneficiary Contribution	Project Contribution	Total
Set up implementation committee					
Fuel (litres)	16	1		16	16
Sub-total				16	16
Plan with committee					
Fuel (litres)	8	1		8	8
A-4 sheets (ream)	1	25		25	25
Sub-total				33	33
Make procurements & supply to beneficiaries					
Fuel (litres)	16	1		16	16
Cost of items	Assorted	50,000		50,000	50,000
Value books	Assorted	500		500	500
Sub-total				50,516	50,516
Train prospective beneficiaries					
Stationery				500	500
Facilitators' honorarium	2	200		400	400
Sub-total				900	900

BUDGET 3

Activity	Qty/ Number	Unit Price (LE)	Beneficiary Contribution	Project Contribution	Total (LE)
Site selection & negotiation for demonstration farm					
Refresher course for extension staffs - Training course for extension staffs	4	200		800	800
Sub-total				800	800
Set up demonstration farm					
- cost of ploughing	1 feddan	200		200	200
- inputs	-	1,000		1,000	1000
- labour cost for 3 months	5 persons	100	500	-----	500
Sub-total			500	1,200	1,700
Provide seed capital to prospective beneficiaries					
- fuel	8	1	-----	8	8
- passbooks, ledger, etc	20	15	300	-----	300
Sub-total			300	8	308

BUDGET 4

Activity	Qty/ Number	Unit Price (LE)	Beneficiary Contribution	Project Contribution	Total (LE)
Provide extension services					
Draw monitoring schedule					
Fuel	8 litres	1		8	8
A-4 sheets	1 ream	25		25	25
Sub-total				33	33
Monitoring program (monthly)					
Fuel	64 litres	1		64	64
Sub-total				64	64
Evaluation program					
Fuel	16 litres	1		16	16
A-4 sheets	2 reams	25		50	50
Honoraria (moderator)	1 person	200		200	200
Sub-total			0	266	266

Administrative Expenses

Item	Details	Unit cost (LE)	Total (LE)
A- Allowances			
Project Director	1 person x 12 months	400	4800
Project Coordinator	1 person x 12 months	300	3600
Training Officer	1 person x 12 months	200	2400
Project Accountant	1 person x 12 months	250	3000
Procurement Officer	1 person x 12 months	200	2400
Principal Agric. Extension Officer	1 person x 12 months	150	1800
Extension Officers	4 persons x 12 months	120	5760
Driver	1 persons x 12 months	100	1200
Sub-total (LE)			24,960

Administrative Expenses (Cont.)

Item	Quantity	Unit cost (LE)	Total (LE)
B- Stationary			
A-4 sheets	10 reams	25	250
15A Toner (HP 1300)	2 toners	500	1,000
Fuel local rounds	200 litres	1	200
Sub-total (LE)			1,450
Grand total (LE)			26,410

Performance of integrated products

Product	Inputs (LE)	Outputs (LE)	Difference (LE)	Family Commitment (LE)	Savings (LE)
Rice	3800	10000	6200	5580	620
Vegetables	900	2500	1600	1440	160
Fish	1350	1800	450	427.5	22.5
Ducks	625	1800	1175	881.25	293.75
Total	6675	16100	9425	8328.75	1096.25



THANK YOU FOR YOUR
ATTENTION

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