Annexes

Sample documents, forms and calculations for revolving funds

1. Assessment of credit needs/fund planning and management

1.1 CREDIT NEEDS ASSESSMENT

(Questionnaire and lead questions used for the assessment of income, expenditure and credit needs of fisherfolk on Lake Kivu in Rwanda by FAO project RWA/87/012)

A. Questionnaire

1. Personal data:

Sex: Male ☐
Female ☐

Age: .....

Religion: .....

Languages: 1. .....
2. .....
3. .....

Subsidiary occupations:

Yes ☐ No ☐

If yes:

1. .....
2. .....
3. .....

Do you know how to read and write?
To read Yes ☐ No ☐
To write Yes ☐ No ☐
For how many years did you go to school? .....
Family profile:

Name of member	Relationship to head of family

2. Income pattern:
How many family members earn (including respondent):
.....
Total amount p.a.: .....
Are there incomes in the family other than from fishing:
Yes: ☐ No: ☐
If yes:

Type of income/ occupation	Family member involved	Which months	Total income p.a.

Which months are

high catch season: .....
medium catch season: .....
low catch season: .....

What species do you catch? With which fishing methods, and what is the income?

Month: 1 2 3 4 5 6 7 8 9 10 11 12
Fishing method: .....
Monthly income: .....

3. Ownership

Ownership of fishing craft and gear:

	No. of owners	Local name
Type of craft Type of gear		

Other property:

Land	☐	Value:	.....
Radio	☐	No.:	.....
Tape recorder	☐	No.:	.....
Watches	☐	Value:	.....
Jewellery	☐	Value:	.....
Utensils	☐	Value:	.....
Others:		Value:	.....

4. Spending pattern:

Expenses during bank holidays (festivals) last year:

Name of festival	Month	Amount spent	Spent on

Expenses for rituals and ceremonies:

Name of ritual/ ceremony	Month	Amount spent	Spent on

Average expenses for:

Food: .....
Clothing: .....
Fishing equipment: .....
Agricultural inputs: .....
Housing: .....
Others: .....

5. Credit

Did you take out any loan last year?

Yes: ☐ No: ☐

If yes:

How much: .....
Purpose: .....
Source of loan:
Bank: ☐
Owner of boat: ☐
Fish merchant: ☐

Other trader: ☐
Moneylender: ☐
Shopkeeper: ☐
Relatives: ☐
Friends: ☐
Cooperative: ☐
Others: ☐

Repayment period: .....
Annual interest rate: .....

B. Guidelines for Group Discussion
(in every village)

Production

- How are the investments in fishing craft and gear presently financed? By savings or by credit? What are the differences between investments?
- What are the sources of credit, amounts, interest rates, terms and conditions of loans and recoveries, collaterals, etc.?
- What are the fish producers' demands for credit for production and non-production purposes?

Marketing

- How do the various types of fish traders finance their investments and meet their working capital requirements? Through savings or through credit?
- What are the sources of credit, amounts, interest rates, terms and conditions of loans and recoveries, collaterals, etc.?
- What are the fish traders' demands for credit for production and non-production purposes?

For each proposed credit for products/purposes a cash flow projection should be prepared, based on information obtained from potential borrowers during or after the group discussions.

1.2 LENDING PROGRAMME AND FINANCIAL ANALYSIS OF PROPOSED INVESTMENTS

Lending programme and examples of the financial analysis of selected investments used in an artisanal fisheries credit scheme in Orissa, India.

Scheme economics: Bank lending programme for fishing assets

Detailed here are the costs, expected earnings and likely profitability of various assets financed under the Orissa credit project. The assets include various types of boats (both displacement and log raft); various types of fishing gears (gillnets, encircling nets, inshore seines and wallnets); and bicycles for fish marketing.

Note: The data given here are based on field notes. Dimensions of fishing craft and gear vary from village to village as they are not based on standard designs.

List of assets financed

Scheme		Cost of asset (Rs.)
1	FISHING BOATS	
1.1	Displacement Craft	
	1.1.1 Danga/Patia/Botali	8 000
	1.1.2 32' Salti	7 100
	1.1.3 27' Salti	5 000
1.2	Log Raft	
	1.2.1 2-Section Kattumaram	5 000
	1.2.2 3-Log Kattumaram	3 000
	1.2.3 4-Log Kattumaram	2 000

cont'd

2	FISHING GEAR	
2.1	Gillnets	
2.1.1	Large-mesh gillnets	
	2.1.1.1 Nakuda	7 500
	2.1.1.2 Sanla	5 500
	2.1.1.3 Phasi	5 000
2.1.2	Medium and Small Mesh Gillnets	
	2.1.2.1 Jagawala	3 500
	2.1.2.2 Nyalalla	1 700
	2.1.2.3 Kilmi or Kilumala	1 700
	2.1.2.4 Bhasani	1 700
	2.1.2.5 Katlala (Sardines)	2 500
	2.1.2.6 Katlala (Anchovies)	3 500
2.2	Encircling nets, Inshore Seines	
	2.2.1 Jangal/Gheri/Khia Badia/Sabado/ Sarini	5 000
2.3	Wall Net	
	2.3.1 Mala or Bedha	5 700
2.4	Set Bag Net	
	2.4.1 Behundi	3 000
3	FISH MARKETING	
3.1	Bicycle Retail Fish Marketing	930
3.2	Headload Retail Fish Marketing	215

Scheme economics details

1	FISHING BOATS
1.1	Displacement Craft
1.1.1	Danga/Patia/Botali

Specifications : 30' x 7' x 6', clinker built, sal wood

Life span : 10 years

cont'd

Period and area of operation	:	All year round, except when the sea is too rough in May/June or July, operated up to 20 km
Mode of operation/ together sharing system nets	:	Used in combination with various gillnets and with other boats, in combination with encircling wage labour or sharing system where crew members contribute net pieces.

A. Capital cost (Rs.)

Requirement of material:	4 500
- Total wood: 75 c.ft. at Rs. 60 per c.ft. Size of planks ranges from 4" to 1 ft. Likewise 13 planks in each size for chine construction. Further 5 planks for each side for top construction. Total (13 x 2) + (5 x 2) = 36 planks.	4 500
- Nails (four face) = 60 kg at Rs. 8/kg	480
- Cotton for caulking at Rs. 15/kg for 6 kgs	90
- Coal for preservation (1 tin contains 15 kgs) at Rs. 80/tin-3	240
- Oil for cleaning at Rs. 6/kg - total 5 kgs	30
- Sail cloth (18 ft x 20 ft)	400
- Tarpaulin	400
- Iron for anchor 15 kg at Rs. 10/kg	150
- Synthetic rope for anchor, 15 mm; 10 metres	110
Total expenditure for material	**6 400**
- Charges for boat building	1 000
- Miscellaneous expenditure	600
Total cost	**8 000**

B. Annual recurring expenses

- Wages for 3 labourers at Rs. 10 per day for 210 fishing days (in addition to labour of applicant)	6 300
- Repair of boat and sail	800
- Hire charges for nets for 10 months at Rs. 250 per month	2 500
	9 600

cont'd

C. Annual income and surplus

- Gross earnings from sales of fish at Rs. 5 per kg. 30 kg per fishing day and 210 fishing days	31 500
- Annual recurring expenses	9 600
- Gross surplus	**21 900**
- Annual depreciation	800
- Net surplus divided into	21 100
Return on labour of applicant (boat owner)	2 100
Return on capital	19 000

D. Economic feasibility (estimated)

- Annual rate of return on investment	238%
- Net value added per unit of investment in Rs.	3.43

2 FISHING GEAR

2.2 Encircling Nets, Inshore Seines

2.2.1 Jangal/Gheri/Khia badia/Sabado/Sarini

Specifications	:	Encircling gillnet, length: 1640 m, depth: 20 m PE R 152 tex, E = 0.44. This scheme is for 188 m.
Life span	:	4 years
Period of operation	:	August to February
Mode of operation/ sharing system	:	35 persons operate the net in 5 Patias and Chhoats and contribute on average 47 m of net each. This scheme is for 2 net shares out of the total 35 shares.

A. Capital cost (Rs.)

- 60 kg PE R 152 tex twine at Rs. 50/kg	3 000
- Rope for float and sinker line PE 5 mm and 8 mm	250
- PVC floats (10 cm dia) Rs. 3 each	950
- Earthern sinkers at Rs. 3 for 100 sinkers	25
- Making charges at Rs. 20/ kg	600
- Framing and miscellaneous	175
Total cost	**5 000**

cont'd

B. Annual recurring expenses	
- Repair of net	500
- 1/10 charges for rent of 5 boats (Rs. 15/boat per day - 150 days)	1 250
	1 750
C. Annual income and surplus	
- Sales proceeds from 150 fishing days at 150 kg a day and Rs. 5/kg	112 500
- Gross earnings (share of loanee is 1/10 out of gross 11,250 earnings)	
- Annual recurring costs	- 1 750
- Gross surplus	9 500
- Depreciation	- 1 250
- Net surplus divided into	8 250
Return on loanee's labour (assumption 150 days at Rs. 10/day)	1 500
Return of investment	6 750
D. Economic feasibility	
- Rate of return on investment	135%
- Net value added per unit of investment in Rs.	1.65

2.3 Wallnet

2.3.1 Malo or Bedha

Specifications	:	Tidal wallnet, mesh size: 40-55 mm, depth of net: 2-4 m; PER 228 tex, length of net 3-5 km E = 0.75, 700 m of net are tobe financed underthis scheme which is taken as 1/4 of the entire length
Life span	:	4 years
Period of operation	:	All year round except for rough days from April-July

cont'd

Mode of operation/ sharing system : Gear is set 3-4 days before and after full and new moon. An area is taken on lease from the local administration by a group of fishermen who contribute cut pieces. The pieces financed under this scheme will be operated by the loanee and a labourer.

A. Capital cost (Rs.)	
- 50 kg of PE R 228 tex at Rs. 50/kg	2 500
- 30 kg PP rope, 8 mm dia, Rs. 30/kg	1 230
- Making charges at Rs. 20/kg	1 000
- 300 bamboo sticks at Rs. 2.50 per stick	600
- Framing of net	200
- Scoop nets (1 m dia) and iron hooks to collect the fish	170
Total cost	**5 700**
B. Annual recurring cost	
- Repair	800
- Wage for 1 labourer for 150 days at Rs. 10/day	1 500
- Rent of a boat for 150 days at Rs. 10/day	1 500
	3 800
C. Annual income and surplus	
- Sale proceeds from 150 fishing days, 120 kg per day Rs. 4/kg for total unit	72 000
- Share accruing to loanees (1/4 of the total) (Gross earnings)	18 000
- Annual recurring cost	- 3 800
- Gross surplus	14 200
- Depreciation	- 1 425
- Lease to revenue department	**- 2 500**
- Net surplus divided into	10 275
Return on loanee's labour (1 500 is assumed)	1 500
Return on investment	8 775
D. Economic feasibility	
- Rate of return on investment	154%
- Net value added (in Rs.)	2.06

3 FISH MARKETING

3.1 Bicycle Fish Retail Business

Mode of operation : The cycle trader buys the fish at a landing site, transports it to the market by cycle and sells it there.

A. Capital cost (Rs.)

- Fixed capital	
Cost of cycle with special carrier and accessories	600
baskets for transportation of fish, gunny bag, weighing balance, knife etc.	100
- Working capital	
For 1 day's purchase of fish: 40 kgs at Rs. 5/kg	200
Ice	10
Fish market fees etc.	20
Total cost	**930**

B. Annual recurring expenses

- Purchase of fish on 210 days, per day at 15 kg at Rs. 4/kg	12 600
- Ice on 210 days at Rs. 4/day	840
- Repair, replacement of baskets, gunny bags etc.	150
- Rent for selling space Rs. 1/day	210
	13 800

C. Annual income and surplus

- Sale proceeds at Rs. 7/kg (7 x 15 x 210)	22 050
- Annual recurring cost	- 13 800
- Gross surplus	8 250
- Depreciation (life span of cycle 6 years)	- 100
- Net surplus	8 150

D. Economic feasibility

- Net value added	8.76

E. Suggestion for repayment

Period 1 year, monthly instalments

Repayment schedules

Scheme 1.1.1

Loan Rs. 8 000
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 251.25
Total repayment for 40 instalments = Rs. 10 050
Annual Net Surplus Minus Repayment = Rs. 18 587.5

Scheme 2.1.1

Loan Rs. 7 500
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 235.55
Total repayment for 40 instalments = Rs. 9 421.9
Annual Net Surplus Minus Repayment = Rs. 3 322.5

Scheme 1.1.2

Loan Rs. 7 100
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 222.99
Total repayment for 40 instalments = Rs. 8 919.4
Annual Net Surplus Minus Repayment = Rs. 6 610.1

Scheme 2.3.1

Loan Rs. 5 700
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 179.02
Total repayment for 40 instalments = Rs. 7 160.65
Annual Net Surplus Minus Repayment = Rs. 8 484.8

Scheme 2.1.1.2

Loan Rs. 5 500
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 172.74
Total repayment for 40 instalments = Rs. 6 909.4
Annual Net Surplus Minus Repayment = Rs. 8 797.6

Scheme 1.1.3, 1.2.1, 2.2.1, 2.1.1.3

Loan Rs. 5 000
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 157.03
Total repayment for 40 instalments = Rs. 6 281.3
Annual Net Surplus Minus repayment = Rs. 4 629.7, 9 229.7, 6 679.7

Scheme 2.1.2.1, 2.1.2.6

Loan Rs. 3 500
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 109.92
Total repayment for 40 instalments = Rs. 4 396.9
Annual net Surplus Minus Repayment = Rs. 7 080.8, 3 525.8

Scheme 1.2.2, 2.4.1

Loan Rs. 3 000
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 94.22
Total repayment for 40 instalments = Rs. 3 768.8
Annual Net Surplus Minus Repayment = Rs. 5 307.8, 5 957.8

Scheme 2.1.2.5

Loan Rs. 2 500
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 78.52
Total repayment for 40 instalments = Rs. 3 140.65
Annual Net Surplus Minus Repayment = Rs. 4 039.8

Scheme 1.2.3

Loan Rs. 2 000
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 62.82
Total repayment for 40 instalments = Rs. 2 512.6
Annual Net Surplus Minus Repayment = Rs. 4 571.8

Scheme 2.1.2.2, 2.1.2.3, 2.1.2.4

Loan Rs. 1 700
Interest % 12.5
Term (Yrs) 4
Repayment of loan + Interest equalized for 10 instalments/year
Instalment = Rs. 53.39
Total repayment for 40 instalments = Rs. 2 135.65
Annual Net Surplus Minus Repayment = Rs. 3 506.1, 3 506.1, 5 226.1

Calculation of Internal Rate of Return (IRR), Net Present Worth (NPW) and Benefit-Cost Ratio (B/C) and Sensitivity Test at 10 percent Increase in Catch.

An example is given below for the calculation of the financial viability of motorized gillnetters in the village of Satpati, Thane district, in the Maharashtra State of India. The financial analysis was carried out by participants of a FAO training course on marine fisheries finance sponsored by the Bay of Bengal Programme of FAO and held at the College of Agricultural Banking of the Reserve Bank of India in Puna.

The investment cost is Indian Rupees (Rs) 210 000.00, which is composed of:

Cost of gillnet	55 000.00 Rs
Cost of fishing boat	85 000.00 Rs
Cost of engine	70 000.00 Rs
	210 000.00 Rs

(See table on pages 114-115)

Financial viability of motorized gillnetter in Maharashtra State of India

Cash flow and financial feasibility

Years	1	2	3	4	5
Outflow					
Investment	210 000	-	-	-	-
Replacement	-	-	-	55 000	-
Variables	-	330 000	330 000	330 000	330 000
TOTAL	210 000	330 000	330 000	385 000	330 000
Inflow					
Sale of fish	-	378 900	378 900	378 900	378 900
Net and boat	-	-	-	-	-
TOTAL	-	378 900	378 900	378 900	378 900
DF OF 15%	.870	.756	.658	.572	.497
PW of outflow	182 700	247 480	217 140	220 220	164 010
PU of inflow	-	286 448	249 316	216 730	188 313

$$\text{BCR} = \frac{1\,591\,592}{1\,615\,595} = 0.985$$

NPW = (-) 24 003

Sensitivity test at 10% increase in catch					
Inflow	-	416 790	416 790	416 790	416 790
PW of inflow	-	315 093	274 247	238 403	207 144
Net benefit	-	67 613	57 107	18 183	43 134

$$\text{BCR} = \frac{1\,748\,795}{1\,615\,595} = 1.08$$

NPW = 133 200

IRR = 19.51

Cash flow and financial feasibility

Years	6	7	8	9	10
Outflow					
Investment	-	-	-	-	-
Replacement	-	55 000	-	-	55 000
Variables	330 000	330 000	330 000	330 000	-
TOTAL	330 000	385 000	330 000	330 000	385 000
Inflow					
Sale of fish	378 900	378 900	378 900	378 900	378 900
Net and boat	-	-	-	-	79 100
TOTAL	378 900	378 900	378 900	378 900	458 000
DF OF 15%	.432	.376	.327	.284	.247
PW of outflow	142 560	144 760	107 910	93 720	95 095
PU of inflow	-	142 460	123 900	107 608	113 216
Sensitivity test at 10% increase in catch					
Inflow	416 790	416 790	416 790	416 790	495 890
PW of inflow	180 053	156 713	136 290	118 368	122 484
Net benefit	37 493	11 953	28 380	24 648	27 389

Interpretation:

At the present level of catch; the project is not financially viable, since the Benefit Cost Ratio (BCR) is only 0.98% and the NPW negative. Only with a 10% increase in catch would the project be viable, with a BCR of 1.08. The IRR would then be 19.51% , which is considerably higher than the rate of interest of loans to the agricultural sector, including fisheries. The NPW would be positive (133 200).

1.3 TRANSACTION COSTS FOR FINANCIAL INSTITUTIONS INCURRED IN OPERATION OF REVOLVING FUND

Transaction costs of a Regional Office of a bank in Tanzania operating a fisheries revolving fund.

Transaction costs of CRDB Regional Office, Kigoma
July 1987 - June 1988

	T.Shs.
1. Cost of funds for regional office[1]	
- Ongoing portfolio	148 045
- New disbursements (amounts disbursed from July 1987 - June 1988)	22 277
Sub-total	**170 322**
2. Loan administration	
Code Personnel costs	
760 Salaries	572 930
776 Medical expenses	45 730
792 Uniforms	51 800
Sub-total	**670 460**
Business direct expenses	
835 Bank charges	3 170
840 Business licence	36 000
850 Postage and telephones	32 930
855 Regional loans committee	14 540
Sub-total	**86 640**

[1] Charged by Head Office

Miscellaneous expenses		
900	Rent and rates	148 010
905	Electricity and water	10 380
910	Maintenance and repair - building	36 230
915	Office and general	49 790
920	Hired service	10 660
922	Entertainment	17 000
925	Maintenance and repair - office equipment	87 360
930	Library and publications	460
940	Typing and stationery	52 960
945	Conference and seminars	81 070
955	Transport and vehicles	295 570
956	Transport fuel	233.95
960	Travelling and subsistence	314 520
	Sub-total	**1 342 100**
	Loan admin. Sub-total	2 099 200
	Share of fish. lending in loan admin. - Sub-total (38%)	797 696

3. Clearing and handling charges during period

date	
14.8.87	35 247.70
7.12.87	45 221.80
28.12.87	36 257.90
4.5.88	331 003.00
Sub-total	**447 730**

TOTAL 1 415 748

Transaction costs expressed as a percentage of total lending:

1 415 748.00 = 17.5%
8 093 951.60

1.4 FUNDS PLANNING/DISBURSEMENT PLAN

Funds planning/Disbursement plan (19....)
Status: ..... (month) In US$

	Actual and scheduled loan repayments available for further disbursements	Actual and scheduled loan disbursements from presently available funds
Jan. Amount No. of loans **Feb.** Amount No. of loans **March** Amount No. of loans **April** Amount No. of loans **May** Amount No. of loans **June** Amount No. of loans **July** Amount No. of loans **Aug.** Amount No. of loans **Sept.** Amount No. of loans **Oct.** Amount No. of loans **Nov.** Amount No. of loans **Dec.** Amount No. of loans		
Total Amount No. of loans		

Funds planning/Disbursement plan (19....)
Status: ..... (month) in US$

	Total scheduled loan disbursements from ..... to	Total scheduled and actual loan disbursements					
		by type of loan			by region		
		A	B	C	A	B	C
Jan.							
Amount							
No. of loans							
Feb.							
Amount							
No. of loans							
March							
Amount							
No. of loans							
April							
Amount							
No. of loans							
May							
Amount							
No. of loans							
June							
Amount							
No. of loans							
July							
Amount							
No. of loans							
Aug.							
Amount							
No. of loans							
Sept.							
Amount							
No. of loans							
Oct.							
Amount							
No. of loans							
Nov.							
Amount							
No. of loans							
Dec.							
Amount							
No. of loans							
Total							
Amount							
No. of loans							


agricultural
development