

ANNEXE 6. Calcul approximatif du coût du Projet et du coût d'exploitation/entretien

6-1. Coût de construction (en cas de construction au Japon)

		Plan-A	Plan-B
A. Manufacturing Costs (a+b)		4,438,856	3,663,417
	a. Direct Production Costs	3,728,979	3,131,779
	(1) Material Costs	379,614	281,902
	1) Direct Material Costs	348,507	258,779
	a. Hull Structure Part	123,100	92,870
	b. Hull Fitting Part	132,669	96,503
	c. Machinery Part	48,372	36,270
	d. Electric Part	44,366	33,136
	2) Auxiliary Material Costs	31,107	23,123
	(2) Equipment Costs	2,562,424	2,249,594
	1) Hull Part	284,150	204,009
	2) Machinery Part	639,313	510,911
	3) Electric Part	415,073	369,502
	4) Survey Equipment	738,536	699,618
	4) Fishing Equipment	485,352	465,554
	(3) Labour Cost	618,108	453,566
	(4) Painting Man-hour Cost	39,375	35,437
	(5) Direct Cost	129,458	111,280
	1) Docking Expenses	10,769	8,057
	2) Class Inspection Cost	10,000	10,000
	3) Sea Trial Expenses	71,789	56,323
	4) Special Expenditure	36,900	36,900
	b. Indirect Production Costs	709,877	531,638
	(1) Indirect Labour Cost	282,215	208,232
	(2) Factory and administrative expenses	427,662	323,406

(2) Détail du coût d'équipements du Plan-A (1 100 G/T)

1/8

8. Hull Part

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Steering Gear	1	rotary vane type, torque 149.5kN-m	15,525
Bow Thruster	1	electric, CPP, thrust 39.2kN, 195kW	18,000
Windlass	2	1CD-2HD-1WE, 44.1kN x 12m/min	20,104
Mooring Winch	2	1HD-1WE, 29.4kN x 15m/min	9,256
Mooring Equipment	1 set	Bollard, Fair-leader, Mooring pipe	2,536
Wharf Ladder	1	aluminum, length 5.0m x breadth 0.6m	400
Bulwark Ladder	1	breadth 0.6m	408
Pilot Ladder	2		160
Flash Hatch	1	hyd. cylinder driven, size 1.80m x 1.30m	2,400
Life Raft	6	inflatable, class A, 20 persons	4,320
Rescue Boat	1	FRP, 6 persons, Length 4.36m,	2,880
Rescue Boat Davit	1	single boom slewing type, 7.5kW	3,360
Lifebuoy	8		151
Life Jacket	46	inflatable, with lifejacket light	626
Life Vest	29		581
Immersion Suit	44		1,338
Line-throwing App.	1		144
Signals	1 set		316
Work Boat	1	FRP/rubber, 8 persons, Length 4.90m,	3,638
Work Boat Davit	1	single boom slewing type, 1.5kW	2,700
Fire Detecting System	1 set	Heat and smoke detector system	3,040
Emergency fire pump	1	25m ³ /hX40mX11kW	560
Fire Hydrant	1 set		71
Fire Extinguisher	1 set	Portable extinguisher, Fireman's Outfit, EEBD	1,084
Fixed CO2 Fire-extinguishing	1 set	for engine room	1,080
Deck Bilge Pump	1	1.8m ³ /h×18m	128
Square Window	18	for wheelhouse, with window wiper	11,451
Round Windows	18	φ 300mm	1,377
Square Window	19	350×550mm	2,052
Mechanical Fan	7		1,844
Accommodation Work	1 set		131,257
Anti Rolling Tank	1 set	semi active type	8,800
Table with Exhaust Fan	1		900
Disposer	2		1,168
Household Appliances	1 set		3,043
Cooking Range	1	electric 35kW	2,295
Rice Cooker	2	6L	1,920
Tilting Braising Pan	1	electric 9kW, 50L	1,011
Water Boiler	1	electric 3kW, 30L	183

Equipment	Q'ty	Particulars	Cost
Refrigerator	1	1500L	1,207
Disposer	1	15kg/min, 2.2kW	583
Ice Maker	1	38kg/day	440
Air Towel	1		40
Galley Equipment	1 set		1,109
Kitchen Supplies	1 set		3,520
Bath Equipment	1		375
Bow Anchor	2	AC14 high holding type, 968kg	272
Anchor Chain Cable	1 set	galvanized, dia.32mm x 385m	1,456
Mooring Line	1 set		2,845
Deck Inventory	1 set		10,640
Air Fender	2	rubber, dia. 1.0m x length 1.50m	2,400
Fender	4	φ500mm×1200mm	320
Total (Hull Part)			287,314

9. Machinery Part

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Main Engine & Propeller	1	1,885kW×750min ⁻¹ , 4CPPX2,700 φ	210,000
FO Purifier	1		4,400
LO Purifier for M/E	1	0.6m ³ /h, CJCfilter,	6,080
Low Temp. FW cooler	2		6,642
High Temp. FW cooler	2		900
Main Generator Engine	2	Rated output: 441kW×1000min ⁻¹	75,000
Emergency Generator Engine	1	Rated output: 50kW×1500min ⁻¹	5,400
Harbour Use Gene. Engine	1		13,500
Hot Water Boiler	1	Heat output : 233kW, Burner moter, Gas oil	8,730
Calorifire	1	5m ³ /h	495
Main Air Compressor	2	Air discharge volume: 30m ³ /h×7.5kW	4,230
Main Air Vessel	2		1,592
Aux. Air Vessel	1		696
Hyd. Pump Unit	1 set		49,128
Fresh Water Generator	1	10t/day, Plate type Titan plate	6,642
Fresh Water Generator	1	5t/day, Reverse osmosis type	5,265
Bilge Alarm	1 set		1,600
Water Level Gauge	1 set		5,925
Air Conditioning Unit	1 set		39,870
Smoke Separator	2	for smoker	1,080
Ref. Machine for F/H	1 set		19,200
Sewage Treatment Device	1	40 persons, discharge pump 1.5kW x 2	8,131
Sewage Collecting Tank	1	250L, sewage transfer pump 1.5kW	1,600

Equipment	Q'ty	Particulars	Cost
Main Cooling SW Pump	2	Centrifugal (1set stand-by)	1,700
M/E Stand-by HTOFW Pump	1	Centrifugal	420
M/E Stand-by LO Pump	1	Gear	1,340
M/E Stand-by FO Supply	1	Gear	400
R/G Stand-by LO Pump	1	Gear	320
R/G Clutch Oil Pump	1	Gear	390
R/G Stand-by Clutch Oil Pump	1	Gear	260
LT Cooling FW Pump	3	Centrifugal (1set stand-by)	1,260
Bilge and Fire Pump	1	65/30m ³ /hX25/45mX15kW	2,304
G. Service and Fire Pump	1	65/30m ³ /hX25/45mX15kW	2,304
Sanitary Pump	2	30m ³ /hX28mX2.2kW	528
FW Transfer Pump	1	10m ³ /hX35mX3.7kW	470
FW Service Pump	1	8m ³ /hX48mX2.2kW(potable water)	461
Distilled FW Service Pump	1	8m ³ /hX48mX2.2kW	461
HW Circulating Pump	2	5m ³ /hX25mX1.5kW	672
HTW Circulating Pump	2	30m ³ /hX20mX3.7kW	672
Bilge Pump(O/W separat)	1	0.5m ³ /hX 0.3MPaX 0.4kW	461
Waste Oil Transfer Pump	1	2m ³ /hX 0.4MPaX 1.5kW	663
FO Transfer Pump	1	10m ³ /hX 0.3MPaX3.7kW	346
FO Service Pump	1	2m ³ /hX0.25MPaX0.75kW	279
LO Transfer Pump	1	1m ³ /hX0.25MPaX0.75kW	202
Gray Water Transfer Pump	2	8m ³ /hX40mX3.7kW	653
Anchoring LTCFW Pump	1	Centrifugal	320
Labo. Sea Water Pump	1		600
Sea Water Pump for OPCS	1		450
Portable Pump	2		48
Marine Growth Prevention Eq.	2		3,240
Drink Water Sterilizer	1		3,600
Oily Water Separator	1	0.5m ³ /h (15ppm)	1,024
Flow Meter	1 set		2,400
E/R Supply Ventilation Fan	2	450/300m ³ /hX5.5/2.75kW	3,420
E/R Exhaust Ventilation Fan	1	200/130m ³ /hX2.2/0.75kW	393
Dehumidification Equipment	1	25 Nm ³ /m ³ ×0.69MPa	576
Transceiver	5		135
Workshop Equipment	1 set		4,160
Machinery Part Spare Parts	1 set		10,256
Propulsion Control Console	1		7,200
Winch Control Console	1		3,240
Engine Control Console	1		16,650
Engine Side Panel	1		2,700

Equipment	Q'ty	Particulars	Cost
Engine Control Room Equip.	1		640
Engine Data Logger System	1		45,000
Engine Telegraph	1		4,500
Spare Parts Maintenance Control system	1		13,500
Tank Level Gauge	1		10,800
Shaft Power Indicator	1		3,150
Sensors	1		5,000
Automation Adjustment	1		26,584
Total (Machinery Part)			662,258

10. Electric Part

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Receptacle	1 set		768
Storage Battery	1 set		3,309
Transformer	1 set		2,679
Shore Connection Box	1		320
Main Switchboard	1		17,820
Emergency Switchboard	1		3,870
Battery Charger Panel	1		2,160
Electric Motors	1 set		15,278
Starter	1 set		15,200
Bow-thruster Starter Panel	1		3,144
Receptacle for Power Source	1 set		46
Group Starter	1 set		3,600
Wheelhouse Group Starter	1 set		8,640
General Lighting	1 set		3,360
Movable Light	5		60
Flood Light	1 set		275
Search Light	2	Xenon lamp, remote control, 6kW	13,712
Search Light	1	Xenon lamp, remote control, 3kW	5,659
Flood Light	50	Halogen lamp, 500W	1,152
Mast Head Light	2		236
Side Light	1 pair		236
Stern Light	1		35
Anchor Light	2		85
Red Light	1		45
Fishing Light	3		168
Signal for Trawler	4		123
Day Light Signal Light	1		45

Equipment	Q'ty	Particulars	Cost
Life Saving Lights	1 set		482
Onboard Crew Display	1		1,710
"Observation" Display Lamp	1		54
Electric Part Spare Parts	1		244
Magnetic Compass	1	reflector type, card dia.165mm	835
Gyro Compass	1	IMO approved type	6,620
Satellite Compass	1	4.5" LCD with DGPS function,	1,240
Auto Pilot	1		4,824
Joystick Control System	1 set		36,000
Marine Radar	2	X band, 25kW, 96 n.mile	11,700
Color Video Plotter	1	10.4" TFT LCD Display,	3,008
ECDIS	1	23.1" color LCD, Position Calculation,	14,360
Ship LAN System	1		85,000
GPS Navigator	2	6" LCD with DGPS function,	3,200
Doppler Speed Log	1		1,080
AIS	1		2,400
Automatic Weather Station	1		15,660
Aneroid Barometer	2		270
Navigational Echo Sounder	1	6.5" color LCD, 50 and 200 kHz,	704
Depth Display	3		480
Loading Calculator	1		2,250
Quartz Clock	1 set		1,926
Inclinometer	2		248
Ruder Angle Indicator	1		1,350
Air Horn	1		200
Piston Horn			728
Time Controller	1		139
Auto-exchange Telephone	1 set		12,800
NO.1 Common Battery Tele.	1		344
NO.2 Common Battery Tele.	1		128
NO.3 Common Battery Tele.	1		75
Bell System	1 set		80
Public Addresser	1 set		14,400
Fire Detecting System	1		640
Ref. Chamber Alarm	1		120
Radio, Television System	1 set		15,802
Business equipment	1 set		411
Radio Equipment		A1+A2+A3	19,213
No.1 MF/HF Radio Telephone	1		7,200
No.1 VHF Telephone	1		1,040

Equipment	Q'ty	Particulars	Cost
NAVTEX Receiver	2		600
EPIRB	1		360
Two-way Radio Telephone	3		960
Radar Transponder (SART)	2		640
INMARSAT-C System	1		2,400
No.2 VHF Radio Telephone	1		800
Shipboard Maintenance Equip.	1 set		4,000
Inmarsat Fleet Broadband	1 set		9,500
MF/HF Radio Telephone	1		2,400
All-wave Receiver	2		2,560
27MHz DSB Receiver	1		280
27MHz SSB Receiver	1		960
40MHz DSB Receiver	1		320
Onboard Radio Telephone	6		2,640
Weather Facsimile	1		1,280
Antenna System	1 set		2,840
Monitor TV System	2 sets	for deck and engine room	13,920
BNWAS	1		1,500
V-SAT	1		6,100
Total (Electric Part)			425,050

11. Survey Equipment (Japan)

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
2,000m CTD Winch	1	7.84kN×60m/min, ϕ 6.4×2,000m(armored)	12,870
2,000m Hydrography Winch	1	5.9kN×60m/min, ϕ 5(SUS)×2,000m	12,800
Multi Net Winch	1	25.5kN×60m/min, ϕ 10.52×2,000m(armored)	18,300
Hoist for Deck Use	2	0.9t×12m/min	1,120
Hoist for CTD Dolly	1	0.25t×7m/min	800
Fore Crane (general use)	1	8.82/3.92kN ×7.5/11.0m	9,045
Mid Space Crane (fishing)	1	8.82/14.7kN ×9.0/6.4m	9,045
Deck Crane	1	24.5/20.0kN ×11.5/14.1m	32,175
A Frame (aft)	1	SWL 53.9kN, outreach 3.0m	21,904
A Frame (midship)	1	SWL 29.4kN, outreach 3.0m	30,060
Davit for Observation	1	0.5t×3m/r	6,400
Larva Net	1 set		375
Block Rack	1 set		640
Reverse osmosis water purifier	1	Aquarius RFP542HA 25L/h at 25°C	568
Ultra-Pure Water Generator	1	Aquarius FRU414CA/CB 0.65L/min	906
Deep Freezer	1	-86°C, 350×1	696
Sample Storage Freezer	1	-25°C 3650 × 1	440

Equipment	Q'ty	Particulars	Cost
Medical Refrigerator	1	100~200ℓ, 2 point temp. alarm	520
Fish Finding Sonar	1	FURUNO FSV-35	29,800
Multiple Corer	1	4 transparent PVC tubes	6,810
Bottom Grab	1	Van Veen Grab Sampler	500
CTD System Dolly	1		800
CTD System Pedestal	1 set		80
Survey Equipment	1 set		2,800
Sediment Electric Grinder	1		150
PH Meter	1	HORIBA	85
Onboard Sediment Sieving System	1		1,000
Clean Oven	1	99ℓ, 0-250°C	250
Stereoscopic Microscope	2	Nikon SMZ 1000	900
Ichtyometer	2		10
Marine Precision Scale	2	Max.800g, precision 0.01g	160
Total (Survey Equip.(Japan))			202,009

12. Survey Equipment (Import)

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
CTD System	1 set	Sea Bird, SBE 911plus CTD	28,830
Hydro-Bios MultiNet	1	Type Midi Net opening 0.25m ²	11,394
ADCP	1	Ocean Surveyor 150kHz	15,030
L-ADCP	1	T. RD Instruments	6,020
Doppler Current Meter	4	SEAGUARD, 4 sets, RCM, 2,000m	18,604
Mooring System	2 sets		23,440
Tide Meter	1	SEAGUARD WLR, 4647C-300m	1,980
Scientific Fish Finder	1	SIMRAD EK60, 18/38/120/200kHz	51,930
Data Processing Soft-ware			11,013
Scientific Multibeam Sonar	1	SIMRAD ME 70	144,000
Multibeam Echo Sounder	1	SIMRAD ME710, Depth 1500m	82,800
Multibeam Analysis Soft	1		4,050
Synchronous Transmitter	1		12,870
Scanbas System	1 set	SCANMAR	41,589
Particle Analysis and Imaging	1	FlowCAM	16,500
OPCS(LOPC-S)	1 set		29,600
Gyrocompass and Motion	1	KONGSBERG Seapath 300	15,210
Alkalinity & Dissolved Inorganic Carbon Extraction	1	MARIANDA VINDTA 3C	7,600
Particle Size Analyzer	1	Micromeritics SediGraph 5100	14,870
Inverted Microscope	2	Leica DM IL LED	900

Equipment	Q'ty	Particulars	Cost
Scale(big)	1	Max.60kg, precision 5g	2,000
Scale(small)	2	Max.3kg, precision 0.1g	3,100
Total (Survey Equip.(Import))			543,330

13. Fishing Equipment

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Auto Tension Winch System	1 set		36,000
Warp Winch	2	85/59/36kN×55/80/130m/mim	100,800
Net Winch	2	Bottom × 1, Pelagic × 1	70,000
Fishing Winch	2	29.4kN×40m/min, ϕ 14mm×40m S.W.R.	8,720
Trawl Winch Control Stand	1		64,000
Otter Board for bottom trawl	2 pair		14,400
Otter Board for pelagic	1 pair		7,200
Otter Board Accessories	1 set		855
Bottom Trawl Net	2	for Fishes	25,200
Bottom Trawl Net	2	for Cephalopods	27,000
Bottom Trawl Net	2	for Shrimp/Hake	45,000
Pelagic Trawl Net	2	for Fishes	55,800
Warp	2	T6×WS(26), ϕ 18mm×5000m	20,000
Fishing Gear and Tool	1 set		2,400
Slipway Door	1		5,440
Horizontal Roller	1 set		800
Top Roller	2		6,400
Total (Fishing Equipment)			490,015

(3) Détail du coût d'équipements du Plan-B (800 G/T)

1/8

8. Hull Part

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Steering Gear	1	torque 58.8kN-m, 3.7kW	5,000
Bow Thruster	1	electric, CPP, thrust 29.4kN, 163kW	15,000
Windlass	2	1CD-1HD-1WE, 25.5kN x 12m/min	13,403
Capstan	2	19.6kN×20m/min	4,000
Mooring Equipment	1 set	Bollard, Fair-leader, Mooring pipe	1,723
Wharf Ladder	1	aluminum, length 5.0m x breadth 0.6m	400
Bulwark Ladder	1	breadth 0.6m	408
Pilot Ladder	2		160
Flash Hatch	1	hyd. cylinder driven, size 1.80m x 1.30m	2,400
Life Raft	6	inflatable, class A, 20 persons	4,320
Rescue Boat	1	FRP, 6 persons, Length 4.36m,	2,880
Rescue Boat Davit	1	single boom slewing type, 7.5kW	3,360
Lifebuoy	8		151
Life Jacket	41	inflatable, with lifejacket light	558
Life Vest	29		581
Immersion Suit	39		1,186
Line-throwing App.	1		144
Signals	1 set		316
Fire Detecting System	1 set	Heat and smoke detector system	2,444
Emergency fire pump	1	25m ³ /h×40m×11kW	560
Fire Hydrant	1 set		71
Fire Extinguisher	1 set	Portable extinguisher, Fireman's Outfit, EEBD	872
Fixed CO ₂ Fire-extinguishing	1 set	for engine room	868
Deck Bilge Pump	1	1.8m ³ /h×18m	128
Square Window	18	for wheelhouse, with window wiper	11,451
Round Windows	18	φ 300mm	1,377
Square Window	11	350×550mm	1,026
Mechanical Fan	6		1,581
Accommodation Work	1 set		105,534
Table with Exhaust Fan	1		900
Disposer	2		1,168
Household Appliances	1 set		3,043
Cooking Range	1	electric 35kW	2,295
Rice Cooker	2	6L	1,920
Tilting Braising Pan	1	electric 9kW, 50L	1,011
Water Boiler	1	electric 3kW, 30L	183
Refrigerator	1	1500L	1,207

Equipment	Q'ty	Particulars	Cost
Disposer	1	15kg/min, 2.2kW	583
Ice Maker	1	38kg/day	440
Air Towel	1		40
Galley Equipment	1 set		1,109
Kitchen Supplies	1 set		3,520
Bath Equipment	1		375
Bow Anchor	2	AC14 high holding type, 675kg	190
Anchor Chain Cable	1 set	galvanized, dia. 26mm x 357.5m	893
Mooring Line	1 set		1,933
Deck Inventory	1 set		9,041
Air Fender	2	rubber, dia. 1.0m x length 1.50m	2,400
Fender	4	φ 500mm×1200mm	320
Total (Hull Part)			214,473

9. Machinery Part

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Main Engine & Propeller	1	1,471kW×750min ⁻¹ , 4CPPX2,550φ	190,000
FO Purifier	1		3,520
LO Purifier for M/E	1		4,864
Low Temp. FW cooler	2		5,314
High Temp. FW cooler	2		720
Main Generator Engine	2	Rated output: 254kW×1000min ⁻¹	68,000
Emergency Generator Engine	1	Rated output: 30kW×1500min ⁻¹	2,500
Hot Water Boiler	1		7,019
Calorifire	1		398
Main Air Compressor	2		3,384
Main Air Vessel	2		1,274
Aux. Air Vessel	1		557
Hyd. Pump Unit	1 set		39,302
Fresh Water Generator	1	10t/day, Plate type Titan plate	6,642
Fresh Water Generator	1	5t/day, Reverse osmosis type	5,265
Bilge Alarm	1 set		1,600
Water Level Gauge	1 set		4,764
Air Conditioning Unit	1 set		32,056
Smoke Separator	2	for smoker	1,080
Ref. Machine for Prov. Store	1 set		8,280
Sewage Treatment Device	1	40 persons, discharge pump 1.5kW x 2	8,131
Sewage Collecting Tank	1	250L, sewage transfer pump 1.5kW	1,600

Equipment	Q'ty	Particulars	Cost
Main Cooling SW Pump	2	Centrifugal (1set stand-by)	1,360
M/E Stand-by HTCFW Pump	1	Centrifugal	336
M/E Stand-by LO Pump	1	Gear	1,072
M/E Stand-by FO Supply Pump	1	Gear	320
R/G Stand-by LO Pump	1	Gear	256
R/G Clutch Oil Pump	1	Gear	312
R/G Stand-by Clutch Oil Pump	1	Gear	208
LT Cooling FW Pump	3	Centrifugal (1set stand-by)	1,008
Bilge and Fire Pump	1	65/30m ³ /hX25/45mX15kW	1,843
G. Service and Fire Pump	1	65/30m ³ /hX25/45mX15kW	1,843
Sanitary Pump	2	30m ³ /hX28mX2.2kW	422
FW Transfer Pump	1	10m ³ /hX35mX3.7kW	376
FW Service Pump	1	8m ³ /hX48mX2.2kW(potable water)	369
Distilled FW Service Pump	1	8m ³ /hX48mX2.2kW	369
HW Circulating Pump	2	5m ³ /hX25mX1.5kW	538
HTW Circulating Pump	2	30m ³ /hX20mX3.7kW	538
Bilge Pump(O/W separat)	1	0.5m ³ /hX 0.3MPaX 0.4kW	369
Waste Oil Transfer Pump	1	2m ³ /hX 0.4MPaX 1.5kW	530
FO Transfer Pump	1	10m ³ /hX 0.3MPaX3.7kW	277
FO Service Pump	1	2m ³ /hX0.25MPaX0.75kW	223
LO Transfer Pump	1	1m ³ /hX0.25MPaX0.75kW	162
Gray Water Transfer Pump	2	8m ³ /hX40mX3.7kW	522
Anchoring LTCFW Pump	1	Centrifugal	256
Labo. Sea Water Pump	1		480
Sea Water Pump for OPCS	1		360
Portable Pump	2		38
Marine Growth Prevention Eq.	2		3,240
Drink Water Sterilizer	1		3,600
Oily Water Separator	1	0.25m ³ /h (15ppm)	900
Flow Meter	1 set		2,400
E/R Supply Ventilation Fan	2		2,736
E/R Exhaust Ventilation Fan	1		314
Dehumidification Equipment	1	25 Nm ³ /m ³ ×0.69MPa	576
Transceiver	5		135
Workshop Equipment	1 set		4,160
Machinery Part Spare Parts	1 set		8,209
Propulsion Control Console	1		5,760
Winch Control Console	1		3,240

Equipment	Q'ty	Particulars	Cost
Engine Control Console	1		13,320
Engine Side Panel	1		2,160
Engine Control Room Equip.	1		640
Engine Data Logger System	1		36,000
Engine Telegraph	1		3,600
Spare Parts Maintenance Control system	1		13,500
Tank Level Gauge	1		8,640
Shaft Power Indicator	1		2,520
Sensors	1		11,308
Automation Adjustment	1		14,086
Total (Machinery Part)			551,701

10. Electric Part

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Receptacle	1 set		617
Storage Battery	1 set		3,309
Transformer	1 set		2,679
Shore Connection Box	1		320
Main Switchboard	1		14,256
Emergency Switchboard	1		3,096
Battery Charger Panel	1		1,728
Electric Motors	1 set		15,278
Starter	1 set		12,160
Bow-thruster Starter Panel	1		2,358
Receptacle for Power Source	1 set		37
Group Starter	1 set		2,894
Wheelhouse Group Starter	1 set		6,947
General Lighting	1 set		2,702
Movable Light	4		48
Flood Light	1 set		221
Search Light	2	Xenon lamp, remote control, 6kW	13,712
Search Light	1	Xenon lamp, remote control, 3kW	5,659
Flood Light	40	Halogen lamp, 500W	926
Mast Head Light	2		236
Side Light	1 pair		236
Stern Light	1		35
Anchor Light	2		85
Red Light	1		45

Equipment	Q'ty	Particulars	Cost
Fishing Light	3		168
Signal for Trawler	4		123
Day Light Signal Light	1		45
Life Saving Lights	1 set		482
Onboard Crew Display	1		1,710
"Observation" Display Lamp	1		54
Electric Part Spare Parts	1		244
Magnetic Compass	1	reflector type, card dia. 165mm	835
Gyro Compass	1	IMO approved type	6,620
Satellite Compass	1	4.5" LCD with DGPS function,	1,240
Auto Pilot	1		4,824
Joystick Control System	1 set		36,000
Marine Radar	2	X band, 25kW, 96 n.mile	11,700
Color Video Plotter	1	10.4" TFT LCD Display,	3,008
ECDIS	1	23.1" color LCD, Position Calculation,	14,360
Ship LAN System	1		81,000
GPS Navigator	2	6" LCD with DGPS function,	3,200
Doppler Speed Log	1		1,080
AIS	1		2,400
Automatic Weather Station	1		15,660
Aneroid Barometer	2		270
Navigational Echo Sounder	1	6.5" color LCD, 50 and 200 kHz,	704
Depth Display	3		480
Loading Calculator	1		2,250
Quartz Clock	1 set		1,549
Inclinometer	2		248
Ruder Angle Indicator	1		1,350
Air Horn	1		200
Piston Horn			728
Time Controller	1		139
Auto-exchange Telephone	1 set		10,291
NO.1 Common Battery Tele.	1		344
NO.2 Common Battery Tele.	1		128
NO.3 Common Battery Tele.	1		75
Bell System	1 set		80
Public Addresser	1 set		11,578
Fire Detecting System	1		515
Ref. Chamber Alarm	1		120

Equipment	Q'ty	Particulars	Cost
Radio, Television System	1 set		11,047
Business equipment	1 set		411
Radio Equipment		A1+A2+A3	19,213
No.1 MF/HF Radio Telephone	1		7,200
No.1 VHF Telephone	1		1,040
NAVTEX Receiver	2		600
EPIRB	1		360
Two-way Radio Telephone	3		960
Radar Transponder (SART)	2		640
INMARSAT-C System	1		2,400
No.2 VHF Radio Telephone	1		800
Shipboard Maintenance Equip.	1 set		4,000
Inmarsat Fleet Broadband	1 set		9,500
MF/HF Radio Telephone	1		2,400
All-wave Receiver	2		2,560
27MHz DSB Receiver	1		280
27MHz SSB Receiver	1		960
40MHz DSB Receiver	1		320
Onboard Radio Telephone	6		2,640
Weather Facsimile	1		1,280
Antenna System	1 set		2,840
Monitor TV System	2 sets	for deck and engine room	11,192
BNWAS	1		1,500
V-SAT	1		6,100
Total (Electric Part)			395,629

11. Survey Equipment (Japan)

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
2,000m CTD Winch	1	7.84kN×60m/min, ϕ 6.4×2,000m(armored)	12,870
2,000m Hydrography Winch	1	5.9kN×60m/min, ϕ 5(SUS)×2,000m	12,800
Multi Net Winch	1	25.5kN×60m/min, ϕ 10.52×2,000m(armored)	18,300
Hoist for Deck Use	2	0.9t×12m/min	1,120
Hoist for CTD Dolly	1	0.25t×7m/min	800
Mid Space Crane (fishing)	1	8.82/14.7kN ×9.0/6.4m	9,045
Deck Crane	1	24.5/20.0kN ×11.5/14.1m	32,175
A Frame (aft)	1	SWL 53.9kN, outreach 3.0m	21,904
A Frame (midship)	1	SWL 29.4kN, outreach 3.0m	30,060
Davit for Observation	1	0.5t×3m/r	6,400

Equipment	Q'ty	Particulars	Cost
Larva Net	1 set		375
Block Rack	1 set		640
Reverse osmosis water purifier	1	Aquarius RFP542HA 25L/h at 25°C	568
Ultra-Pure Water Generator	1	Aquarius FRU414CA/CB 0.65L/min	906
Deep Freezer	1	-86°C, 350×1	696
Sample Storage Freezer	1	-25°C 3650 × 1	440
Medical Refrigerator	1	100~2000, 2 point temp. alarm	520
Fish Finding Sonar	1	FURUNO FSV-35	29,800
Multiple Corer	1	4 transparent PVC tubes	6,810
Bottom Grab	1	Van Veen Grab Sampler	500
CTD System Dolly	1		800
CTD System Pedestal	1 set		80
Survey Equipment	1 set		2,800
Sediment Electric Grinder	1		150
PH Meter	1	HORIBA	85
Onboard Sediment Sieving System	1		1,000
Clean Oven	1	990, 0-250°C	250
Stereoscopic Microscope	2	Nikon SMZ 1000	900
Ichtyometer	2		10
Marine Precision Scale	2	Max.800g, precision 0.01g	160
Total (Survey Equip.(Japan))			192,964

12. Survey Equipment (Import)

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
CTD System	1 set	Sea Bird, SBE 911plus CTD	28,830
Hydro-Bios MultiNet	1	Type Midi Net opening 0.25m ²	11,394
ADCP	1	Ocean Surveyor 150kHz	15,030
L-ADCP	1	T. RD Instruments	6,020
Doppler Current Meter	4	SEAGUARD, 4 sets, RCM, 2,000m	18,604
Mooring System	2 sets		23,440
Tide Meter	1	SEAGUARD WLR, 4647C-300m	1,980
Scientific Fish Finder	1	SIMRAD EK60, 18/38/120/200kHz	51,930
Data Processing Soft-ware			11,013
Scientific Multibeam Sonar	1	SIMRAD ME70	144,000
Multibeam Echo Sounder	1	SIMRAD ME710, Depth 1500m	82,800
Multibeam Analysis Soft	1		4,050
Synchronous Transmitter	1		12,870
Scanbas System	1 set	SCANMAR	41,589

Equipment	Q'ty	Particulars	Cost
Particle Analysis and Imaging	1	FlowCAM	16,500
OPCS(LOPC-S)	1 set		29,600
Gyrocompass and Motion Sensor	1	KONGSBERG Seapath 300	15,210
Alkalinity & Dissolved Inorganic Carbon Extraction	1	MARIANDA VINDTA 3C	7,600
Particle Size Analyzer	1	Micrometritics SediGraph 5100	14,870
Inverted Microscope	2	Leica DM IL LED	900
Scale(big)	1	Max.60kg, precision 5g	2,000
Scale(small)	2	Max.3kg, precision 0.1g	3,100
Total (Survey Equip.(Import))			543,330

13. Fishing Equipment

(in thousands yen)

Equipment	Q'ty	Particulars	Cost
Auto Tension Winch System	1 set		36,000
Warp Winch	2	85/59/36kN×55/80/130m/mim	100,800
Net Winch	2	Bottom × 1, Pelagic × 1	70,000
Fishing Winch	2	29.4kN×40m/min. φ 14mm×40m S.W.R.	8,720
Trawl Winch Control Stand	1		64,000
Otter Board for bottom trawl	2 pair		14,400
Otter Board for pelagic	1 pair		7,200
Otter Board Accessories	1 set		855
Bottom Trawl Net	2	for Fishes	25,200
Bottom Trawl Net	2	for Cephalopods	27,000
Bottom Trawl Net	2	for Shrimp/Hake	45,000
Pelagic Trawl Net	2	for Fishes	55,800
Warp	2	T6×WS(26), φ 18mm×5000m	20,000
Fishing Gear and Tool	1 set		2,400
Slipway Door	1		5,440
Horizontal Roller	1 set		800
Top Roller	2		6,400
Total (Fishing Equipment)			490,015

6-2. Plan de paiement et de remboursement

(1) Plan de paiement

Plan A: Projet non-lié

Item	Total			2014			2015			2016			2017			2018			2019			2020			
	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	
A. ELIGIBLE PORTION																									
I) Procurement / Construction	6,132	0	6,132	0	0	0	0	0	0	0	0	0	0	0	0	1,481	0	1,481	0	3,024	0	3,024	1,628	0	1,628
Building Cost	4,310	0	4,310	0	0	0	0	0	0	0	0	0	0	0	0	1,077	0	1,077	0	2,155	0	2,155	1,077	0	1,077
Design Cost	361	0	361	0	0	0	0	0	0	0	0	0	0	0	0	90	0	90	0	181	0	181	90	0	90
General Expenses	283	0	283	0	0	0	0	0	0	0	0	0	0	0	0	71	0	71	0	142	0	142	71	0	71
Other Expenses	25	0	25	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	12	0	12	6	0	6
Transportation	54	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Training for Officers and Crews at Shipyard	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Familiarization of Equipment in Morocco	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base cost for JICA financing	5,048	0	5,048	0	0	0	0	0	0	0	0	0	0	0	0	1,245	0	1,245	0	2,490	0	2,490	1,313	0	1,313
Price escalation	793	0	793	0	0	0	0	0	0	0	0	0	0	0	0	165	0	165	0	330	0	330	165	0	165
Physical contingency	292	0	292	0	0	0	0	0	0	0	0	0	0	0	0	71	0	71	0	144	0	144	78	0	78
II) Consulting services	494	3	513	0	0	0	13	201	1	212	28	0	30	82	0	86	85	0	86	85	0	89	76	1	83
Base cost	411	3	438	0	0	0	11	176	1	187	24	0	26	69	0	73	70	0	73	70	0	73	61	1	68
Price escalation	50	0	51	0	0	0	1	15	0	15	3	0	3	9	0	9	11	0	9	11	0	11	11	0	11
Physical contingency	19	0	21	0	0	0	1	10	0	10	1	0	1	4	0	4	4	0	4	4	0	4	4	0	4
Total (I + II)	6,616	3	6,646	0	0	0	12	201	1	212	28	0	30	1,563	0	1,567	3,109	0	3,112	1,704	1	1,711	1,704	1	1,711
B. NON ELIGIBLE PORTION																									
a) Procurement / Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base cost for JICA financing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
b) Land Acquisition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c) Administration cost	0	36	332	0	0	0	0	0	1	11	0	0	2	0	9	78	0	0	0	0	0	0	0	0	0
VAT	0	139	1,226	0	0	0	0	0	0	0	0	0	0	0	34	296	0	0	0	0	0	0	0	0	0
Import Tax	0	17	153	0	0	0	0	0	0	0	0	0	0	0	4	37	0	0	0	0	0	0	0	0	0
Total (a+b+c+d+e)	0	195	1,712	0	0	0	0	0	1	11	0	0	2	0	47	412	0	0	0	0	0	0	0	0	0
TOTAL (A+B)	6,616	198	8,358	0	0	0	12	201	2	223	28	0	32	1,563	47	1,979	3,109	95	3,948	1,704	52	2,163	1,704	52	2,163
C. Interest during Construction																									
Interest during Construction (Const.)	171	0	171	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21	0	63	0	63	87	0	87
Interest during Construction (Consult.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commitment Charge	48	0	48	7	0	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
GRAND TOTAL (A+B+C+D)	6,835	198	8,577	7	0	7	19	208	2	230	35	0	39	1,591	47	2,006	3,179	95	4,019	1,786	52	2,257	1,786	52	2,257
GRAND TOTAL (excluding VAT & import duty)	6,835	41	7,197	7	0	7	19	208	2	230	35	0	39	1,591	9	1,672	3,179	18	3,339	1,798	11	1,990	1,798	11	1,990
E. JICA finance portion (A)	6,616	3	6,646	0	0	0	12	201	1	212	28	0	30	1,563	0	1,567	3,109	0	3,112	1,704	1	1,711	1,704	1	1,711

Plan A: STEP

Item	Total		2014		2015		2016		2017		2018		2019					
	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC				
A. ELIGIBLE PORTION																		
I) Procurement / Construction	6,261	0	6,261	0	0	0	0	0	0	1,490	0	1,490	0	1,521	3,250	0	3,250	
Building Cost	4,439	0	4,439	0	0	0	0	0	0	1,110	0	1,110	0	1,110	2,219	0	2,219	
Design Cost	361	0	361	0	0	0	0	0	0	90	0	90	0	90	181	0	181	
General Expenses	289	0	289	0	0	0	0	0	0	72	0	72	0	72	144	0	144	
Other Expenses	27	0	27	0	0	0	0	0	0	7	0	7	0	7	13	0	13	
Transportation	98	0	98	0	0	0	0	0	0	0	0	0	0	0	98	0	98	
Delivery in Morocco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Training for Officers and Crews in Japan	13	0	13	0	0	0	0	0	0	0	0	0	0	0	13	0	13	
Familiarization of Equipment in Morocco	7	0	7	0	0	0	0	0	0	0	0	0	0	0	7	0	7	
Base cost for JICA financing	5,234	0	5,234	0	0	0	0	0	0	1,279	0	1,279	0	1,279	2,676	0	2,676	
Price escalation	729	0	729	0	0	0	0	0	0	140	0	140	0	170	419	0	419	
Physical contingency	298	0	298	0	0	0	0	0	0	71	0	71	0	72	135	0	135	
II) Consulting services	302	2	321	2	3	3	67	0	3	67	0	70	65	1	71	50	0	52
Base cost	255	2	273	2	3	3	59	0	3	56	1	61	56	1	61	42	0	44
Price escalation	32	0	32	0	0	0	5	0	5	6	0	6	6	0	6	15	0	15
Physical contingency	14	0	15	0	0	0	3	0	3	3	0	3	2	0	2	6	0	6
Total (I + II)	6,562	2	6,582	2	3	3	67	0	3	67	0	70	1,555	1	1,561	1,572	0	1,574
B. NON ELIGIBLE PORTION																		
a Procurement / Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base cost for JICA financing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
b Land Acquisition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c Administration cost	0	37	329	0	0	0	0	0	0	0	0	3	0	9	78	0	9	79
d VAT	0	142	1,252	0	0	0	0	0	0	0	0	34	298	0	35	304	0	35
e Import Tax	0	18	157	0	0	0	0	0	0	0	0	4	37	0	4	38	0	4
Total (a+b+c+d+e)	0	197	1,738	0	0	0	0	0	0	0	0	47	413	0	48	421	0	48
TOTAL (A+B)	6,562	200	8,320	2	3	3	67	1	3	67	1	73	1,555	48	1,974	1,572	48	1,995
C. Interest during Construction																		
Interest during Construction(Const.)	22	0	22	0	0	0	0	0	0	3	0	3	6	0	6	13	0	13
Interest during Construction (Consul.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Commitment Charge																		
Commitment Charge	40	0	40	0	7	7	7	0	7	7	0	7	7	0	7	7	0	7
GRAND TOTAL (A+B+C+D)	6,624	200	8,381	7	10	10	74	1	10	74	1	80	1,565	48	1,984	1,584	48	2,007
GRAND TOTAL (excluding VAT & import duty)	6,624	40	6,972	7	10	10	74	1	10	74	1	80	1,565	9	1,649	1,584	9	1,665
E. JICA finance portion incl. IDC (A)	6,562	2	6,582	2	3	3	67	0	3	67	0	70	1,555	1	1,561	1,572	0	1,574

Plan B: Projet non-lié

Item	Total			2014			2015			2016			2017			2018			2019			2020				
	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total					
A. ELIGIBLE PORTION																										
1.) Procurement / Construction	5,171	0	5,171	0	0	0	0	0	0	0	0	0	0	0	0	1,247	0	1,247	2,546	0	2,546	0	2,546	1,378	0	1,378
Building Cost	3,542	0	3,542	0	0	0	0	0	0	0	0	0	0	0	0	886	0	886	1,771	0	1,771	0	886	0	886	
Design Cost	361	0	361	0	0	0	0	0	0	0	0	0	0	0	0	90	0	90	181	0	181	0	90	0	90	
General Expenses	204	0	204	0	0	0	0	0	0	0	0	0	0	0	0	66	0	66	132	0	132	0	66	0	66	
Other Expenses	25	0	25	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	12	0	12	0	6	0	6	
Transportation	49	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	49	
Training for Officers and Crews at Shipyard	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	
Familiarization of Equipment in Morocco	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	
Base cost for JICA financing	4,256	0	4,256	0	0	0	0	0	0	0	0	0	0	0	0	1,048	0	1,048	2,096	0	2,096	0	1,112	0	1,112	
Price escalation	669	0	669	0	0	0	0	0	0	0	0	0	0	0	0	139	0	139	328	0	328	0	201	0	201	
Physical contingency	246	0	246	0	0	0	0	0	0	0	0	0	0	0	0	59	0	59	121	0	121	0	66	0	66	
II.) Consulting services	484	3	513	0	0	0	12	0	13	201	1	212	28	0	30	82	0	86	85	0	89	76	1	83	0	83
Base cost	411	3	438	0	0	0	11	0	12	176	1	187	24	0	26	89	0	73	70	0	73	61	1	68	0	68
Price escalation	50	0	51	0	0	0	1	0	1	15	0	15	3	0	3	9	0	9	11	0	11	0	0	0	0	0
Physical contingency	19	0	21	0	0	0	1	0	1	10	0	10	1	0	1	4	0	4	4	0	4	0	4	0	4	
Total (I + II)	5,655	3	5,685	0	0	0	12	0	13	201	1	212	28	0	30	1,329	0	1,333	2,631	0	2,635	1,454	1	1,461	0	1,461
B. NON ELIGIBLE PORTION																										
a) Procurement / Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base cost for JICA financing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
b) Land Acquisition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Price escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c) Administration cost	0	32	284	0	0	0	0	0	1	0	1	11	0	0	2	0	8	67	0	15	132	0	8	73	0	73
d) VAT	0	118	1,034	0	0	0	0	0	0	0	0	0	0	0	0	0	28	249	0	58	509	0	31	276	0	276
e) Import Tax	0	15	129	0	0	0	0	0	0	0	0	0	0	0	0	0	4	31	0	7	64	0	4	34	0	34
Total (a+b+c+d+e)	0	165	1,448	0	0	0	0	0	1	0	1	11	0	0	2	0	39	347	0	80	705	0	44	383	0	383
TOTAL (A+B)	5,655	168	7,132	0	0	0	12	0	14	201	2	223	28	0	32	1,329	40	1,680	2,631	80	3,339	1,454	44	1,845	0	1,845
C. Interest during Construction																										
Interest during Construction(Const.)	144	0	144	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17	53	0	53	0	73	0	73	
Interest during Construction (Consul.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
D. Commitment Charge																										
Commitment Charge	41	0	41	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	6	0	6	0	6	0	6	
GRAND TOTAL (A+B+C+D)	5,840	168	7,317	6	0	6	18	0	19	207	2	229	34	0	38	1,352	40	1,704	2,690	80	3,398	1,533	44	1,924	0	1,924
GRAND TOTAL (excluding VAT & Import duty)	5,940	36	6,154	6	0	6	18	0	19	207	2	229	34	0	38	1,352	8	1,423	2,690	15	2,925	1,533	9	1,614	0	1,614
E. JICA finance portion incl. IDC (A)	5,655	3	5,685	0	0	0	12	0	13	201	1	212	28	0	30	1,329	0	1,333	2,631	0	2,635	1,454	1	1,461	0	1,461

6-3. Coût d'exploitation et d'entretien (1) Nouveau navire de recherche (Plan A : 1,100 G/T)

Operating Year	Unit: DM																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Average	Remarks	
Personnel Expenses	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124
OB&S	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120	2,642,120
Sub-Total	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244	5,609,244
Maintenance Expenses	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Material Expenses	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Sub-Total	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Repair & Maintenance Expenses	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613
Others	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613	880,613
Sub-Total	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226	1,761,226
Fuel Oil	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036	9,476,036
Lubricant Oil	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168	152,168
Freshwater	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820	13,820
Sub-Total	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023	9,642,023
Berthing Fee	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750	200,750
Port Charges	1,080,000	1,041,200	1,002,320	963,440	924,560	885,680	846,800	807,920	769,040	730,160	691,280	652,400	613,520	574,640	535,760	496,880	458,000	419,120	380,240	341,360	302,480	263,600	224,720	185,840	146,960	108,080	69,200	30,320
Insurance	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Communication Exp.	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
Sub-Total	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
Total	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030	15,072,030
Regular Inspection																												

SALARIES FOR CREW

No. of Person	Annual Salary (incl. Bonus)	Total (DH/year)
2	166,984	333,968
2	153,186	306,372
2	153,186	306,372
1	159,655	159,655
1	133,800	133,800
6	113,387	680,322
1	116,387	116,387
1	122,804	122,804
2	117,244	234,488
20	0	0
40	0	0
Total		2,967,124

PER DIEM & FOOD ALLOWANCE FOR CREW AND RESEARCHERS

Per Diem (DH/day)	Food (DH/day)	On Land (DH/day)	On Sea (DH/day)	Total (DH/year)
200	200	80	155,040	
200	200	80	155,040	
200	200	80	155,040	
150	200	70	67,830	
150	200	70	67,830	
150	200	70	67,830	
150	200	70	67,830	
150	200	70	67,830	
200	200	0	1,264,120	

On sea 151 days
On land 214 days

Fuel	Unit Price (DH)
Diesel Oil (without tax)	6.85 / L
Lubricant Oil	450.00 / 200L

Navigation	Acoustic	Travelling	No. of days for survey and navigation		Fuel Consumption (KL)	Fuel cost at total (KL)
			Fixed station	Total		
14.6	26.5	20.8	15.9	79.8	117.6	809.1
24.9	20.4	24.9	18.8	71.2	84.1	592.8
12 knots	10 knots	13.5 knots				260.1
					172.0	1,425.0

Lubricant Oil Consumption	
Autumn (80 days)	2,715
Spring (71 days)	2,644
Normal Year	5,359
Change oil in sub-tank	6,763
Year	12,122

Freshwater (On Land)	
Berthing fee (exp. 550.00 / B)	22.29
Electricity Charge (Luf 2.13 / kwh)	550.00
Freshwater Tank	155

(2) Nouveau navire de recherche (Plan B : 800 G/T)

Operating Year	New Research Vessel (800 G/T)																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Personnel Expenses	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124	2,967,124
On-Berth	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120	2,340,120
Off-Berth	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244	5,307,244
Sub-Total	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Medical Expenses	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Others	300,000	800,000	900,000	900,000	1,000,000	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000	1,600,000	1,700,000	1,800,000	1,900,000	2,000,000	2,100,000	2,200,000	2,300,000	2,400,000	2,500,000	2,600,000	2,700,000	2,800,000	2,900,000	3,000,000
Repair & Maintenance Expenses	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086	641,086
Others	641,086	2,327,770	2,359,804	2,391,838	2,423,872	2,455,906	2,487,939	2,519,973	2,552,007	2,584,041	2,616,075	2,648,109	2,680,143	2,712,177	2,744,211	2,776,245	2,808,279	2,840,313	2,872,347	2,904,381	2,936,415	2,968,449	3,000,483	3,032,517	3,064,551
Fuel Oil	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282	7,697,282
Lubricant Oil	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670	131,670
Fuel Expenses	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615	19,615
Freshwater	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567	7,848,567
Sub-Total	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000	146,000
Port Charges	840,000	800,760	779,520	749,280	719,040	688,800	658,560	628,320	598,080	567,840	537,600	507,360	477,120	446,880	416,640	386,400	356,160	325,920	295,680	265,440	235,200	204,960	174,720	144,480	114,240
Insurance	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Communication Exp.	15,392,897	17,539,341	17,641,136	17,642,929	20,142,925	17,846,516	17,748,310	17,650,104	17,551,898	20,251,884	17,855,488	17,857,280	17,859,072	17,860,864	20,260,848	17,862,640	17,864,432	17,866,224	17,868,016	20,269,800	17,870,000	17,871,792	17,873,584	17,875,376	17,877,168
Total	15,392,897	17,539,341	17,641,136	17,642,929	20,142,925	17,846,516	17,748,310	17,650,104	17,551,898	20,251,884	17,855,488	17,857,280	17,859,072	17,860,864	20,260,848	17,862,640	17,864,432	17,866,224	17,868,016	20,269,800	17,870,000	17,871,792	17,873,584	17,875,376	17,877,168
Regular Inspection																									

Salaries for Crew

No. of Person	Annual Salary (incl. Bonus)	Total (DH/year)
Captain & 2nd Captain	2	297,711
Chief & 2nd Engineers	2	166,994
3rd & 4th Officers	2	153,186
Deck Officers	2	153,186
Radio operator	1	159,635
Boatswain	1	133,800
Deck hands	6	113,397
Galley staff	6	113,397
Cook	1	122,934
Others	2	117,267
Researchers	15	0
Total	35	2,967,124

Per Diem & Food Allowance for Crew and Researchers

Per Diem (DH/day)	Food (DH/day)	On Sea		On Land	Total (DH/year)
		Per Diem (DH/day)	Food (DH/day)		
200	200	200	80	155,040	
200	200	200	80	155,040	
200	200	200	80	155,040	
200	200	200	80	155,040	
150	200	200	70	67,830	
150	200	200	70	67,830	
150	200	200	70	67,830	
150	200	200	70	67,830	
150	200	200	70	67,830	
200	200	200	0	306,000	
200	200	200	0	306,000	
On sea	On land	151 days	214 days		

Fuel	Unit Price (DH)
Diesel Oil (without tax)	6.65 / L
Lubricant Oil	450.00 / 200L

Navigation	Acoustic	Trawling	Fuel Consumption (KL)		Fuel Annual consumption at Total (KL)
			Navigation	Acoustic	
14.6	26.5	20.8	93.0	244.8	488.6
7.2	20.4	47.4	66.5	288.7	955.1
12 knots	10 knots	9 - 5 knots	274.5	136.0	39.4

Lubricant Oil Consumption	Autumn (80 days)	Spring (71 days)	At Ports (214 days)	Total (KL)
Normal year	5.104	2.932	0.000	8.036
Inspection	8.220	Change of oil in sub-tank	14.072	

Freshwater (On Land)	22.29	m3
Berthing fee (exp. lightstation)	400.00 <th>/E</th>	/E
Electricity Charge (Land)	2.13 <th>/kwh</th>	/kwh
Freshwater Tank	110 <th>m3</th>	m3

(3) Navire existant (AMA)

Operating Year	Existing Research Vessel (AMA, 203 017)																									Remarks	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Personnel Expenses	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	2,100,373	
Per Diem & Food Allowance	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	1,315,970	
Others																											
Sub-Total	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	3,416,343	
Medical Expenses	349,577	228,260	442,226	413,528	238,162	160,596	231,560	160,596	231,560	160,596	231,560	160,596	231,560	160,596	231,560	160,596	231,560	160,596	231,560	160,596	231,560	160,596	231,560	160,596	231,560	160,596	
Painting & Ports	270,144	178,787	262,452	183,403	275,192	178,787	262,452	183,403	275,192	178,787	262,452	183,403	275,192	178,787	262,452	183,403	275,192	178,787	262,452	183,403	275,192	178,787	262,452	183,403	275,192	178,787	
Sub-Total	1,056,673	693,313	1,198,437	1,056,697	788,718	1,049,832	951,105	1,336,016	846,315	1,336,016	846,315	1,336,016	846,315	1,336,016	846,315	1,336,016	846,315	1,336,016	846,315	1,336,016	846,315	1,336,016	846,315	1,336,016	846,315	1,336,016	
Repair & Maintenance	881,865	881,199	904,933	916,667	928,401	940,135	951,869	963,603	975,337	987,072	998,806	1,010,540	1,022,274	1,034,008	1,045,742	1,057,476	1,069,210	1,080,944	1,092,678	1,104,412	1,116,146	1,127,880	1,139,614	1,151,348	1,163,082	1,174,816	
Inspection Fee	1,045,545	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	234,830	
Others																											
Sub-Total	1,927,010	1,128,029	1,139,763	1,151,497	1,173,946	1,174,865	1,186,699	1,198,433	1,210,167	1,221,901	1,233,635	1,245,369	1,257,104	1,268,838	1,280,572	1,292,306	1,304,040	1,315,774	1,327,508	1,339,242	1,350,976	1,362,710	1,374,444	1,386,178	1,397,912	1,409,646	
Fuel Oil	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	4,126,754	
Lubricant Oil	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	59,468	
Freshwater	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	4,012	
Sub-Total	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	4,190,233	
Port Charges	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	73,580	
Berthing Fee	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	1,081,847	
For Vessel	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	865,222	
Communication Exp.	13,632,955	12,530,474	12,387,332	12,897,257	13,495,236	12,933,869	12,836,976	12,516,098	13,257,257	13,610,504	12,553,289	13,369,556	11,281,249														
Sub-Total	13,632,955	12,530,474	12,387,332	12,897,257	13,495,236	12,933,869	12,836,976	12,516,098	13,257,257	13,610,504	12,553,289	13,369,556	11,281,249														
Insurance																											
Regular inspection																											

Salaries for Crew	No. of Personnel		Annual Salary (incl. Bonus)		Total	
	On Land	On Sea	Per Diem (DH/day/psn)	Food (DH/day/psn)	Per Diem (DH/day/psn)	Total (DH/year)
Captain & 2nd Captain	2	2	200	200	80	150,560
Chief & 2nd Engineer	2	2	200	200	80	150,560
3rd & 4th Officers	1	1	200	200	80	75,280
Deck Officers	1	1	150	150	70	65,870
Radio Operator	1	1	150	150	70	65,870
Boatswain	1	1	150	150	70	65,870
Deck Hands	3	3	150	150	70	197,610
Stewards	1	1	150	150	70	65,870
Cook	1	1	150	150	70	65,870
Others	0	0	150	150	70	0
Researcher	7	7	200	200	0	402,200
Total	20	20				1,315,970

Fuel	Unit Price (DH)	
	Without tax	With tax
Diesel Oil	6.05 /L	450.00 /20L
Lubricant Oil		

Navigation	No. of days for survey and navigation		Fuel Consumption (KL)		Fuel Annual consump. at Total (KL)
	Acoustic	Trawling	Acoustic	Trawling	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling	10 knots	3 - 5 knots	0 knots	0 knots	
Sub-Total	10 knots	3 - 5 knots	0 knots	0 knots	
Navigation	10 knots	3 - 5 knots	0 knots	0 knots	
Acoustic	10 knots	3 - 5 knots	0 knots	0 knots	
Trawling					

(4) Navire existant (CAI)

Operating Year	Existing Research Vessel (CAI-387 GT)																									Remarks
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Personnel Expenses	Salaries for Crew	2,599,666	2,599,666	2,599,666	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,599,666
	Per Diem & Food Allowance	1,091,600	1,023,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material Expenses	Sub-Total	3,691,266	3,622,866	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,657,066
	Other	951,667	951,667																							951,667
Repair Expenses	Sub-Total	38,667	38,667																							38,667
	Other	20,698	20,698																							20,698
Fuel Expenses	Sub-Total	1,189,981	1,324,281	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,257,638
	Other	1,732,689	247,981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,019,875
Port Charges	Sub-Total	2,982,679	1,572,322	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,277,501
	Other	2,775,237	2,540,856	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,636,047
Insurance	Sub-Total	44,010	40,388	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42,189
	Other	11,930	11,930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,930
Communication Exp.	Sub-Total	2,831,176	2,593,175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,712,175
	Other	146,760	146,760	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146,760
Total	Sub-Total	923,485	923,485	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	326,682
	Other	11,588,655	9,876,641	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	923,485
Regular Inspection																										10,733,148

Salaries for Crew

No. of Person	Annual Salary (incl. Bonus) (DH/year)	Total (DH/year)
Captain & 2nd Captain	2 297,711	595,422
Chief & 2nd Engineer	2 166,984	333,968
3rd & 4th Officers	2 153,196	306,392
Radio operator	1 159,635	159,635
Boatswain	1 133,600	133,600
Deck hands	3 118,397	355,191
Cook	1 122,904	122,904
Others	1 117,267	117,267
Reseachers	7 0	0
Total	21	2,599,666

Fuel	Unit Price(DH)
Diesel Oil (without tax)	6.65 /L
Lubricant Oil	450.00 /20L

Navigation	Acoustic	Trawling	Anchor at sea	Rest at port	Total	No. of days for survey and navigation
1st year (2013)	33.1	0.0	25.1	25.7	84.0	27.5
2nd year (2019)	31.0	0.0	20.3	25.7	77.0	11.0
Cruising Speed	7 knots	3-4 knots				

Freshwater (On Land)	Berthing fee (exp. (station port))	Electricity Charge (L/wh)	Freshwater Tank
22.26 /m3	200.00 /€	2.13 /kwh	54 /m3

Per Diem & Food Allowance for Crew and Researches

Per Diem (DH/day/psn)	Food (DH/day/psn)	On Land (DH/day/psn)	On Sea (DH/day/psn)	1st Year	2nd Year	Total (DH/year)
200	200	200	200	80	80	113,440
200	200	200	200	80	80	113,440
200	200	200	200	80	80	107,680
150	200	200	200	70	70	49,630
150	200	200	200	70	70	47,110
150	200	200	200	70	70	44,350
150	200	200	200	70	70	49,630
150	200	200	200	70	70	47,110
200	200	200	200	0	0	248,300
200	200	200	200	0	0	215,800
200	200	200	200	0	0	1,037,000

On sea	On land
86	273
77	269

Fuel Consumption (Kl)	Navigation	Acoustic	Trawling	Anchor at sea	Rest at port	Total	Fuel consumption at port (Kl)	Annual Total (Kl)
140.5	140.5	0.0	147.3	12.3	4.2	310.2	310.2	417.3
140.5	140.5	0.0	119.1	11.3	4.2	275.5	110.6	382.1
198.8	198.8	0.0	244.5	19.3	16.0			

Lubricant Oil Consumption	Navigation	Acoustic	Trawling	Anchor at sea	Rest at port	Total
0.526	0.526	0.0	0.526	0.526	0.526	1.956
0.526	0.526	0.0	0.526	0.526	0.526	1.956
0.554	0.554	0.0	0.554	0.554	0.554	1.795

ANNEXE 7. Assistance Technique

Cadre Logique du Projet (PDM) ver.-1

En date du 12 février 2013

Intitulé du Projet : Projet de développement des capacités d'exploitation et de maintenance d'un navire de recherche halieutique (nom provisoire)
 Zone cible : Toutes les zones du Royaume du Maroc
 Emprunteur : Ministère de l'Économie et des Finances (MEF)
 Organisme d'exécution : Ministère de l'Agriculture et de la Pêche Maritime (MAPM)
 Organisme d'exploitation et de maintenance : Institut National de Recherche Halieutique (INRH)
 Bénéficiaires : Personnel de l'INRH (env. 159 personnes : 113 chercheurs et 46 membres d'équipage)
 Durée de projet : Trois (3) ans

Résumé du Projet	Indicateurs	Moyens et sources de vérification	Conditions extérieures
<p><u>Objectifs Globaux</u></p> <p>1. L'évaluation des ressources halieutiques est effectuée. 2. L'analyse écosystémique est mise en place.</p> <p><u>Objectif du Projet</u></p> <p>Le système de collecte de données d'étude à travers le nouveau navire de recherche est établi.</p>	<ul style="list-style-type: none"> Le total admissible de captures (TAC) pour les espèces de poisson à l'exception des poulpes et petits pélagique est estimé. Les informations sur les pêcheries sont fournies aux pêcheurs. Les données pour 2 ans pour évaluer les ressources halieutiques sont accumulées aux laboratoires à terre. Les données pour 2 ans pour l'analyse écosystémique sont accumulées aux laboratoires à terre. Les cartes de pêcheries concernant les stations d'étude sont établies. 	<ul style="list-style-type: none"> Journal officiel Rapports d'exploitation de l'INRH Rapports du Projet Cartes de pêcheries 	<ul style="list-style-type: none"> Les chercheurs de laboratoires à terre de l'INRH ne quittent leur travail ni ne sont pas mutés. Une modalité d'analyse et d'évaluation des ressources halieutiques à travers l'approche écosystémique est établie.
<p><u>Résultats</u></p> <p>1. Le système de gestion et d'exploitation du nouveau navire de recherche est établi.</p> <p>2. Les capacités d'exploitation du navire de recherche ainsi que les techniques d'échantillonnage par chalutage s'améliorent.</p>	<p>1-1. La liste de stock des équipements et pièces de rechange est établie. 1-2. Les manuels de maintenance pour la coque, les moteurs et les équipements sont formulés. 1-3. Le bilan des frais d'exploitation du nouveau navire de recherche pendant la période du Projet est établi. 1-4. Le plan de navigation pour 2 ans après la fin du Projet, y compris le plan budgétaire, est établi. 1-5. Les discussions avec les organismes concernés pour la réalisation de l'étude conjointe sont mises en place.</p> <p>2-1. Le taux d'exploitation du nouveau navire par rapport au plan de navigation d'étude atteint 85% (plus de 145 jours par an). 2-2. Les échantillonnages d'organismes marins sont effectués par chalutage et les échantillons sont traités (9 espèces démersales (260 stations/an), crevette royale (80 stations/an), 8 espèces pélagiques et semi-pélagiques (300 stations/an)) (matériel de chalutage : système de contrôle des filets à poissons, ADCP, sonar de veille compris).</p>	<ul style="list-style-type: none"> Liste de stock Manuels de maintenance Bilan des frais d'exploitation Plan de navigation Journaux de bord et de navigation Rapports d'étude 	<ul style="list-style-type: none"> Les chercheurs et membres d'équipage ne quittent leur travail ni ne sont pas mutés.

<p>3. Les capacités d'utilisation des équipements d'étude s'améliorent, et les données fiables et compatibles avec les données existantes sont collectées.</p>	<p>3-1. Les données acoustiques nécessaires à l'évaluation des ressources halieutiques sont collectées à 4 fréquences et traitées (18, 38, 120 200 kHz) (9000 miles/an). 3-2. Les données nécessaires à l'analyse écosystémique sont collectées et traitées (prélèvement benthos/sédiments : 230 stations/an, chalutage multi-net : 450 stations/an, étude CTD : 1000 stations/an, prélèvement d'eau et échantillonnage de larves/alevins : 450 stations/an). 3-3. Les données topographiques de fond des stations d'étude sont collectées et traitées (80 stations dans la zone abyssale).</p>	<p>• Rapports d'étude</p>			
<p><u>Activités</u></p> <p>1-1. Le contenu des études actuelles est révisé pour le refléter dans le présent Projet. 1-2. Les opérations de maintenance actuelles sont révisées pour les refléter dans le présent Projet. 1-3. La liste de stock est établie en analysant les listes de stock de tous les fournisseurs. 1-4. Le plan de navigation et le manuel de gestion des équipements sont établis. 1-5. Les formations et stages (dans des pays tiers et/ou au Japon) pour les membres d'équipage sont mis en place.</p> <p>2-1. Les navigations d'étude sont mises en œuvres. 2-2. Les équipements nécessaires à la navigation fonctionnent. 2-3. Les chalutages sont effectués pour échantillonnage.</p> <p>3-1. Les activités de navigation sont mises en place pour l'évaluation des ressources et l'étude écosystémique. 3-2. Les matériels et équipements d'étude sont utilisés pour l'évaluation des ressources et l'analyse écosystémique. 3-3. Les données nécessaires à l'évaluation des ressources et à l'évaluation écosystémique sont collectées.</p>					
<p style="text-align: center;"><u>Apports</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><u>Partie marocaine</u></p> <p>1) Affectation d'homologue(s) pour chaque expert de la JICA</p> <p>2) Fourniture de bureau du Projet (pour les experts de la JICA) et les installations nécessaires pour l'activité</p> <p>3) Financement indispensable pour la mise en œuvre des études et l'exploitation / maintenance du navire</p> </td> <td style="width: 50%; vertical-align: top;"> <p><u>Partie japonaise</u></p> <p>1) Experts de la JICA (env. 75 H/M)</p> <p>• Opération et gestion du navire de recherche (25 H/M)</p> <p>• Technique de navigation et de pêche (25 H/M)</p> <p>• Mécanique marin (8 H/M)</p> <p>• Equipements d'étude scientifique (6 H/M)</p> <p>• Equipements d'étude acoustique (6 H/M)</p> <p>• Cartes de pêcheries (5 H/M)</p> <p>2) Fourniture d'équipements</p> <p>3) Formation d'homologues marocains au Japon et/ou dans des pays tiers</p> <p>4) Coût local</p> </td> </tr> </table> <p>• Le budget pour l'exploitation de l'INRH n'est pas insuffisant. • Les conditions climatiques n'évoluent pas considérablement.</p> <p>Pré-condition</p> <p>• La stabilité politique du Maroc est assurée.</p>				<p><u>Partie marocaine</u></p> <p>1) Affectation d'homologue(s) pour chaque expert de la JICA</p> <p>2) Fourniture de bureau du Projet (pour les experts de la JICA) et les installations nécessaires pour l'activité</p> <p>3) Financement indispensable pour la mise en œuvre des études et l'exploitation / maintenance du navire</p>	<p><u>Partie japonaise</u></p> <p>1) Experts de la JICA (env. 75 H/M)</p> <p>• Opération et gestion du navire de recherche (25 H/M)</p> <p>• Technique de navigation et de pêche (25 H/M)</p> <p>• Mécanique marin (8 H/M)</p> <p>• Equipements d'étude scientifique (6 H/M)</p> <p>• Equipements d'étude acoustique (6 H/M)</p> <p>• Cartes de pêcheries (5 H/M)</p> <p>2) Fourniture d'équipements</p> <p>3) Formation d'homologues marocains au Japon et/ou dans des pays tiers</p> <p>4) Coût local</p>
<p><u>Partie marocaine</u></p> <p>1) Affectation d'homologue(s) pour chaque expert de la JICA</p> <p>2) Fourniture de bureau du Projet (pour les experts de la JICA) et les installations nécessaires pour l'activité</p> <p>3) Financement indispensable pour la mise en œuvre des études et l'exploitation / maintenance du navire</p>	<p><u>Partie japonaise</u></p> <p>1) Experts de la JICA (env. 75 H/M)</p> <p>• Opération et gestion du navire de recherche (25 H/M)</p> <p>• Technique de navigation et de pêche (25 H/M)</p> <p>• Mécanique marin (8 H/M)</p> <p>• Equipements d'étude scientifique (6 H/M)</p> <p>• Equipements d'étude acoustique (6 H/M)</p> <p>• Cartes de pêcheries (5 H/M)</p> <p>2) Fourniture d'équipements</p> <p>3) Formation d'homologues marocains au Japon et/ou dans des pays tiers</p> <p>4) Coût local</p>				