

A1: ALTERATION OF THE AIR QUALITY

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1	-1	-1	1	
Geographic extent	E	1	1	1	1	
Time Length	Du	1	1	2	1	
Magnitude	M	2	1	1	1	
Occurrence Probability	Po	0.5	0.6	0.5	1	
Frecuency	F	1	1	1	1	
Reversibility	R	1	1	1	1	
$Ca = C \times Po \times (M + E + Du + F + R)$		-3	-3	-3	5	0

R-1: INCREASE OF THE NOISE LEVELS

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1	-1	-1		
Geographic extent	E	1	1	1		
Time Length	Du	1	1	2		
Magnitude	M	1	1	1		
Occurrence Probability	Po	0.5	0.5	0.5		
Frecuency	F	1	1	1		
Reversibility	R	1	1	2		
$Ca = C \times Po \times (M + E + Du + F + R)$		-2.5	-2.5	-3.5	0	0

H-1: INCREASE OF THE SEA WATER TURBIDITY

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C			-1		-1
Geographic extent	E			2		1
Time Length	Du			1		3
Magnitude	M			2		1
Occurrence Probability	Po			0.7		0.5
Frecuency	F			1		2
Reversibility	R			1		2
Ca = C x Po x (M + E + Du + F + R)		0	0	-4.9	0	-4.5

H-2: ALTERATION OF THE PHYSICAL AND CHEMICAL QUANTITY AND QUALITY OF THE SEA WATER AND RIVERS

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C		-1	-1		-1
Geographic extent	E		1	1		2
Time Length	Du		2	2		3
Magnitude	M		1	1		1
Occurrence Probability	Po		0.2	0.5		0.5
Frecuency	F		1	1		2
Reversibility	R		1	1		2
Ca = C x Po x (M + E + Du + F + R)		0	-1.2	-3	0	-5

SU-1: ALTERATION OF THE SOIL STRUCTURE

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1	-1			
Geographic extent	E	1	1			
Time Length	Du	1	2			
Magnitude	M	0	0			
Occurrence Probability	Po	0.2	1			
Frecuency	F	3	1			
Reversibility	R	3	1			
$Ca = C \times Po \times (M + E + Du + F + R)$		-1.6	-5	0	0	0

SU-2: ALTERATION OF THE PHYSICAL AND CHEMICAL QUALITY OF THE SOIL

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1	-1	-1		
Geographic extent	E	1	1	1		
Time Length	Du	1	1	2		
Magnitude	M	1	1	1		
Occurrence Probability	Po	0.5	0.5	0.5		
Frecuency	F	1	1	1		
Reversibility	R	1	1	1		
$Ca = C \times Po \times (M + E + Du + F + R)$		-2.5	-2.5	-3	0	0

SU-3: ALTERATION OF LANDFORMS

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1		-1		
Geographic extent	E	1		1		
Time Length	Du	1		1		
Magnitude	M	1		3		
Occurrence Probability	Po	1		1		
Frecuency	F	1		1		
Reversibility	R	2		3		
Ca = C x Po x (M + E + Du + F + R)		-6	0	-9	0	0

SU-4: ALTERATION OF THE BEACH MORPHOLOGY

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C			-1		-1
Geographic extent	E			2		2
Time Length	Du			1		3
Magnitude	M			2		2
Occurrence Probability	Po			0.5		0.5
Frecuency	F			1		2
Reversibility	R			1		1
$Ca = C \times Po \times (M + E + Du + F + R)$		0	0	-3.5	0	-5

FF-1: LOSS OF TERRESTRIAL VEGETAL COVER

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1				
Geographic extent	E	1				
Time Length	Du	1				
Magnitude	M	1				
Occurrence Probability	Po	0.2				
Frecuency	F	1				
Reversibility	R	1				
$Ca = C \times Po \times (M + E + Du + F + R)$		-1	0	0	0	0

FF-2: ALTERATION OF THE STRUCTURE AND COMPOSITION OF MARINE COMMUNITIES

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C			-1		0
Geographic extent	E			1		1
Time Length	Du			1		2
Magnitude	M			3		2
Occurrence Probability	Po			1		0.6
Frecuency	F			1		1
Reversibility	R			2		2
$Ca = C \times Po \times (M + E + Du + F + R)$		0	0	-8	0	0

FF-3: CHANGES IN THE FISHING CATCHES

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C			0		0
Geographic extent	E			1		1
Time Length	Du			1		2
Magnitude	M			1		1
Occurrence Probability	Po			0.4		0.5
Frecuency	F			1		1
Reversibility	R			1		2
$Ca = C \times Po \times (M + E + Du + F + R)$		0	0	0	0	0

FF-4: REDUCTION IN THE MARINE FAUNA RECORDS

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C			-1		
Geographic extent	E			1		
Time Length	Du			2		
Magnitude	M			1		
Occurrence Probability	Po			0.7		
Frecuency	F			1		
Reversibility	R			1		
$Ca = C \times Po \times (M + E + Du + F + R)$		0	0	-4.2	0	0

S-3: DISTURBANCES TO THE POPULATION

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1		-1		
Geographic extent	E	2		2		
Time Length	Du	1		1		
Magnitude	M	1		1		
Occurrence Probability	Po	0.5		0.5		
Frecuency	F	1		1		
Reversibility	R	1		1		
$Ca = C \times Po \times (M + E + Du + F + R)$		-3	0	-3	0	0

S-4: INTERRUPTION OF THE ROAD INFRASTRUCTURE

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1				
Geographic extent	E	2				
Time Length	Du	1				
Magnitude	M	1				
Occurrence Probability	Po	0.5				
Frecuency	F	1				
Reversibility	R	1				
$Ca = C \times Po \times (M + E + Du + F + R)$		-3	0	0	0	0

E-3: JOB GENERATION

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	1		1		
Geographic extent	E	2		2		
Time Length	Du	1		1		
Magnitude	M	2		2		
Occurrence Probability	Po	1		1		
Frecuency	F	1		1		
Reversibility	R	1		1		
$Ca = C \times Po \times (M + E + Du + F + R)$		7	0	7	0	0

AR-1: ALTERATION OR DESTRUCTION OF THE ARCHAEOLOGICAL HERITAGE

IMPACT QUALIFICATION PARAMETERS		ACTIVITIES - PROJECT PHASES				
		CONSTRUCTION			OPERATION	
		CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF MARINE FACILITIES
Nature	C	-1				
Geographic extent	E	1				
Time Length	Du	1				
Magnitude	M	1				
Occurrence Probability	Po	0.2				
Frecuency	F	1				
Reversibility	R	1				
$Ca = C \times Po \times (M + E + Du + F + R)$		-1	0	0	0	0

Table 3.4 Matrix of Impact Qualification – Changes in the Project - Phases of Construction and Operation

COMPONENT	CHANGE INDICATOR	Code	ACTIVITIES - PROJECT PHASES				
			CONSTRUCTION			OPERATION	
			CONSTRUCTION OF UNDERPASSES	ROCK TRANSPORT	CONSTRUCTION OF THE ROCK LOAD-OUT JETTY AND MODIFICATIONS TO THE DREDGING OF THE NAVIGATIONAL CHANNEL	CHANGES AND RELOCATION OF EQUIPMENT	OPERATION OF THE MARINE FACILITIES
AIR	Alteration in the air quality	A-1	-3	-3	-3	5	0
NOISE	Increase in the noise levels	R-1	-2.5	-2.5	-3.5	0	0
WATER	Increase of the sea water turbidity.	H-1	0	0	-4.9	0	-4.5
	Alteration of the physical and chemical quantity and quality of the sea water and rivers.	H-2	0	-1.2	-3	0	-5
SOIL	Alteration of the soil structure	SU-1	-1.6	-5	0	0	0
	Alteration of the physical and chemical quality	SU-2	-2.5	-2.5	-3	0	0
	Alteration of landforms	SU-3	-6	0	-9	0	0
	Alteration of the beach morphology	SU-4	0	0	-3.5	0	-5
TERRESTRIAL AND MARINE FLORA AND FAUNA	Loss of terrestrial vegetal cover	FF-1	-1	0	0	0	0
	Alteration of the structure and composition of the marine communities.	FF-2	0	0	-8	0	0
	Changes in the fishing catches	FF-3	0	0	0	0	0
	Reduction in the marine fauna records	FF-4	0	0	-4.2	0	0
SOCIAL	Disturbances to the population	S-3	-3	0	-3	0	0
	Interruption of the road infrastructure	S-4	-3	0	0	0	0
ECONOMIC	Job Generation	E-3	7	0	7	0	0
CULTURAL	Alteration or destruction of the archaeological heritage	AR-1	-1	0	0	0	0

Highly negative
 Moderately Negative
 Slightly Negative
 Neutral
 Positive

Highly negative	Moderately Negative	Slightly Negative	Neutral	
De -15 a -10,1	De -10 a -5,1	De -5 a -1	0	De +15 a +1