

LEARNINGS FROM A REGIONAL WATER PLAN SEA IN MEXICO

Speaker:

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“...we have to make a great effort, because our development is not fitted for the total and armonic conceptualisation that the ecological concept requieres. We are used to fragment our concepts, where even Universities had helped to this partition of the knowlegde and its fragmentation, that formerly could have been a great advance in the development of the nature, but that today it is necessary to overcome. The division of the academic reality, even the universe, into disciplines, is something that needs to be overcome somehow, because this fragmentation has been the responsible of, up to certain point, some of the biggest mistakes that we have made. To consider nature in pieces, and make huge efforts to know a part, while ignoring the remaining, it is the road to commit big mistakes, ecologically speaking.”



Dr. Pedro Medellín Milán (†)
Fragment of a Conference in SLP, MX in 1989

WHAT WAS THIS REGIONAL WATER PLAN SEA?

- TWO YEAR (2013-2015) RESEARCH PROJECT SUPPORTED BY A FEDERAL-STATE FUND (\$1,200,000 MXP; £46,100)
- ONE GOVERNMENT INSTITUTION; TWO ACADEMIC INSTITUTIONS; THREE RESEARCHERS (CHEMICAL SCIENCES); ONE PH.D STUDENT; THREE UNDERGRADUATE STUDENTS
- **PROBLEM TO SOLVE:** DRINKING WATER ACCESS IN A SEMI-ARID REGION OF 15 MUNICIPALITIES WITH MORE THAN 1,400 RURAL COMMUNITIES
- SIX MONTHS FIELD WORK: ALL 15 MUNICIPALITIES PLUS ALMOST 80 RURAL COMMUNITIES

A CORE SEA PRINCIPLE WILL BE THE ONE THAT DEFINES THE ESSENCE OF AN SEA PROCESS OR METHODOLOGY.

SEA PROCESS



SEA HAS TO MEET INTEGRATION BETWEEN ENVIRONMENTAL CONSIDERATIONS WITH A HIGH LEVEL OF A COUNTRY'S, STATE'S, REGION'S OR MUNICIPALITY'S DEVELOPMENT DECISION-MAKING AND PLANNING.

SEA HAS TO BE PERFORMED UNDER AN EFFECTIVE AND ACCESSIBLE PUBLIC PARTICIPATION IN HIGH TIERS OF DECISION-MAKING AND PLANNING, OR AT LEAST IT HAS TO IMPROVE IT.

SEA HAS TO LEAD TO DECISION-MAKING, PLANNING, LEGAL FRAMEWORKS AND MINDSET REARRANGEMENTS IN ORDER TO ACHIEVE PREVIOUS PRINCIPLES.

SEA CONCEPTUAL PROCESS 1
For strategic actions started from the scratch or after a SEA model 2 filter

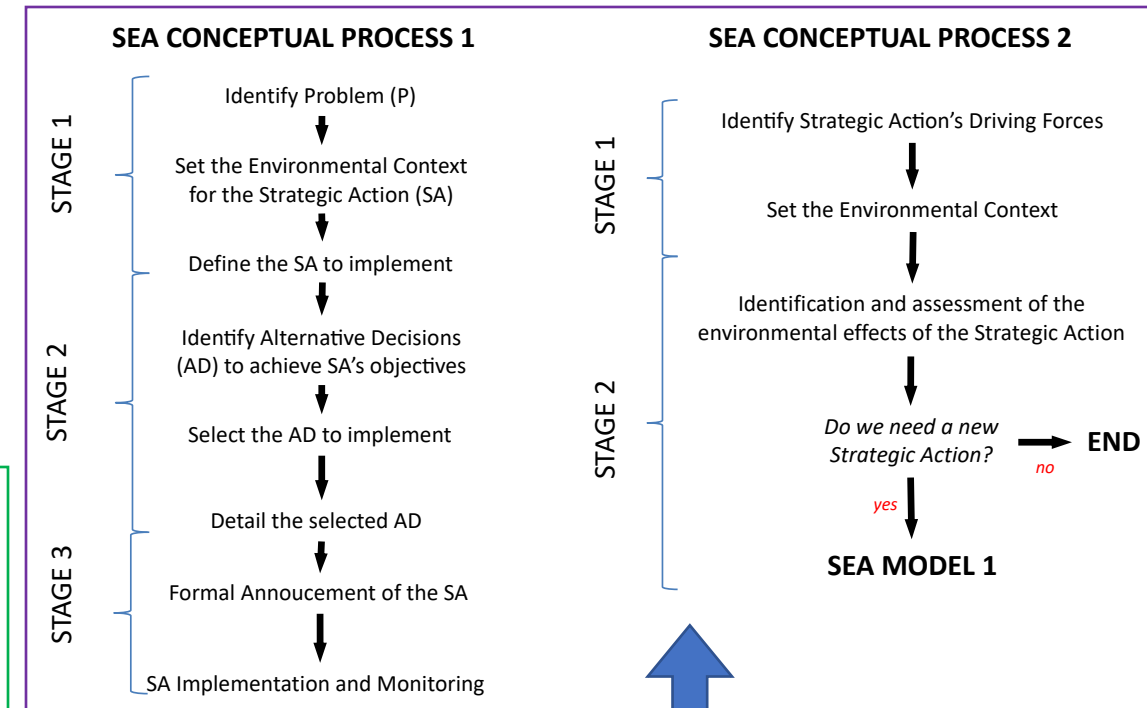
SEA CONCEPTUAL PROCESS 2
For strategic actions currently in use without being previously submitted to any SEA process

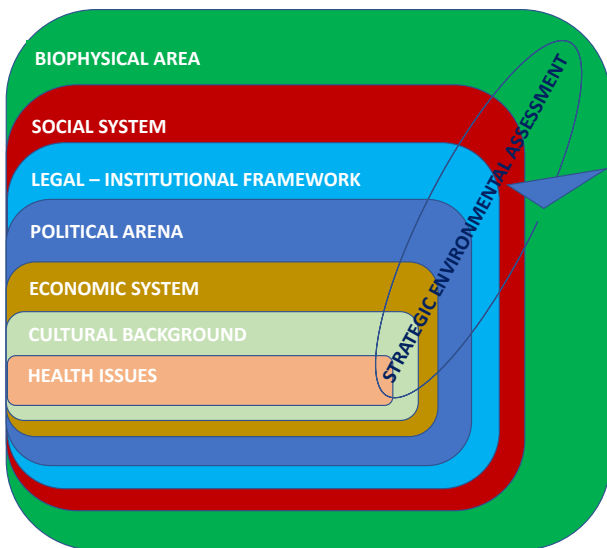
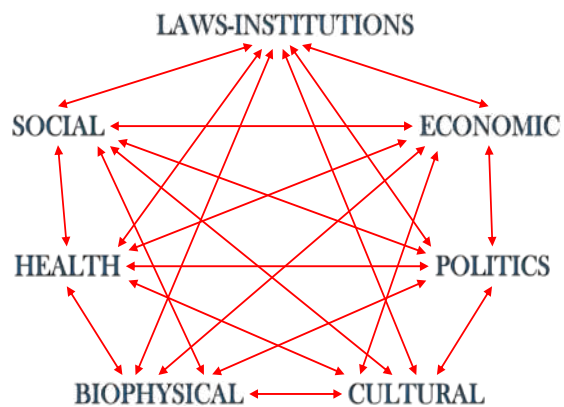
CASE OF STUDY 1

Integrated drinking water management plan for the region of the Altiplano Potosino in San Luis Potosi

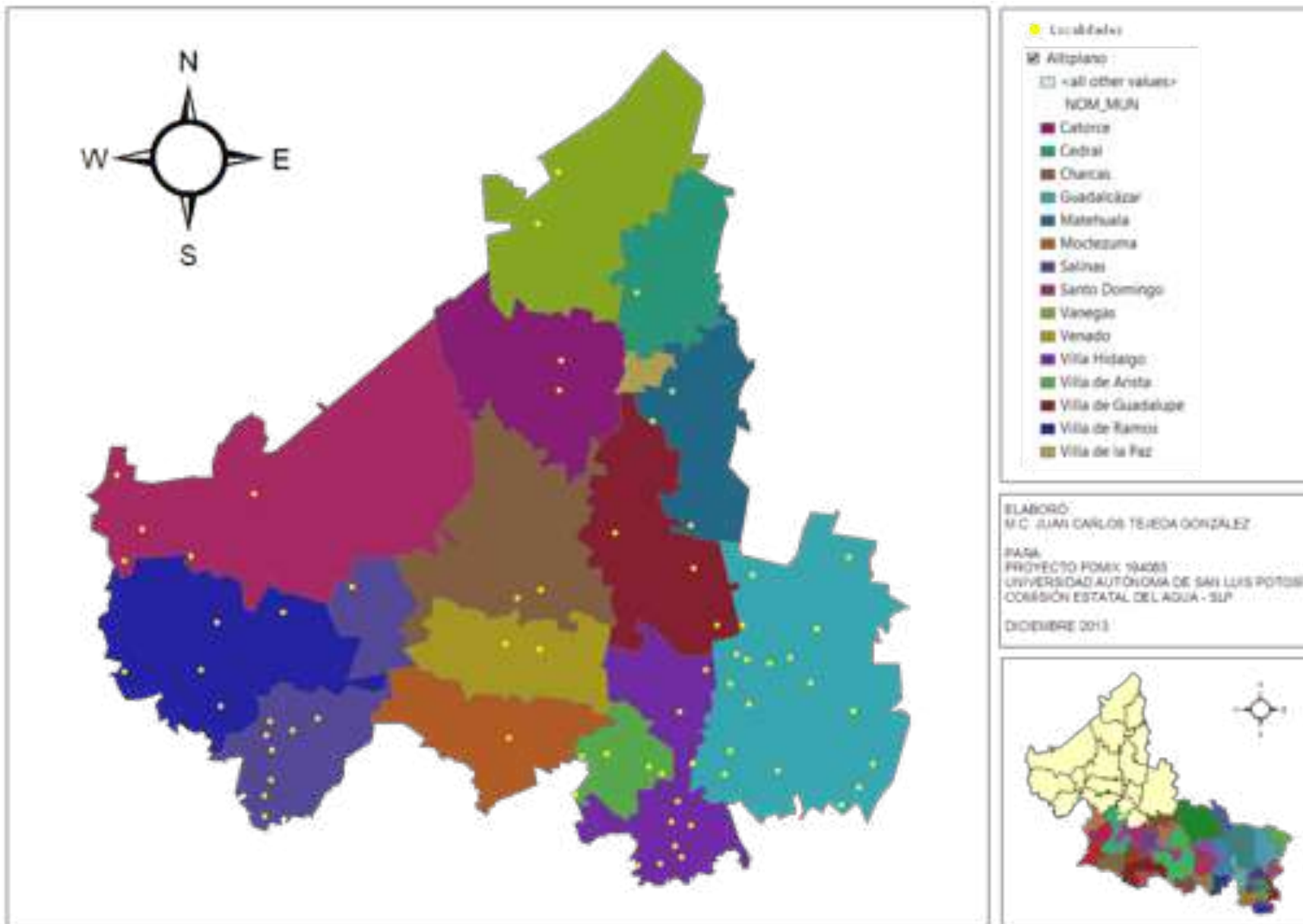
CASE OF STUDY 2

Development policy of the port-city of Manzanillo, Colima

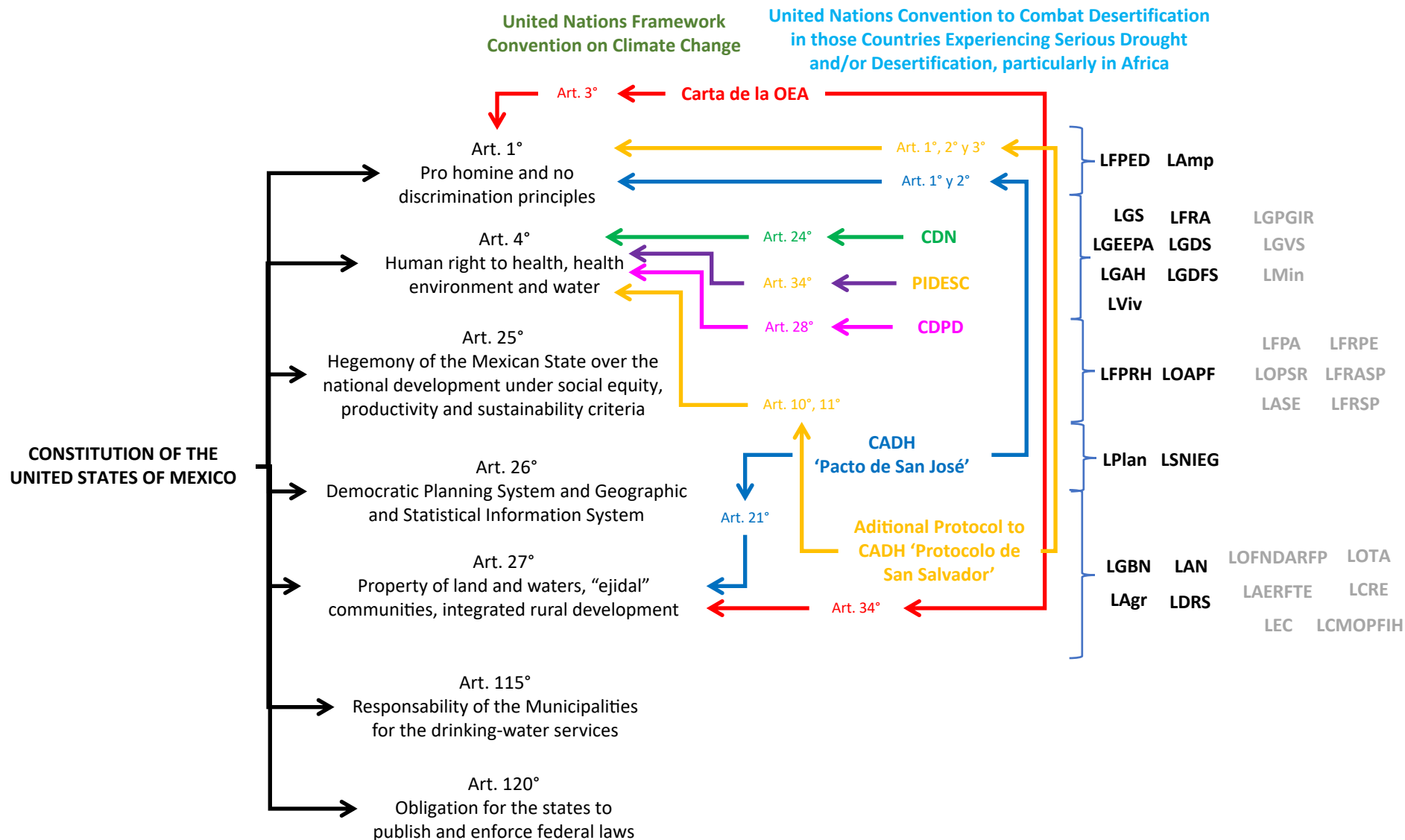




	STEP	SPECIFIC TASK	METHOD USED
STAGE 1	Identify Problem (P)	Identify P's interested or affected stakeholders (1st screening)	Stakeholders meetings; legal framework review
		Define the P's fundamental(s) feature(s)	
		Set the reference framework (RF) for P's fundamental(s) feature(s) (Initial proposal)	Problem's Reference Framework template
	Set the Environmental Context for the Strategic Action (SA)	Define the environmental elements linked to the P from the RF	
		Describe the baseline for the environmental elements identified (data gathering from institutions and field work) (2nd stakeholder screening)	Literature review, official documents collection, field work
	Define the SA to implement	Tiers with other strategic actions	Legal framework review
		Define the SA to use (legislation, policy, plan, programme or project)	Stakeholders meetings
		Set SA's vision	
		Set P's strategic objectives	
STAGE 2	Identify Alternative Decisions (AD) to achieve SA's objectives	Data analysis	DF-P-S-I-R model
		Report Stage 1 results to interested or affected stakeholders	Stakeholders meetings
		Identify with the help of interested or affected stakeholders the ADs to achieve SA's objectives	
		Environmentally assess the ADs identified	Network analysis
		Define short, medium and long term scenarios for the use of identified ADs	Forecasting
	Select the AD to implement	Hierarchy analysis for the selection of ADs to implement by the strategic action	Hierarchy analysis
	Detail the selected AD	Once ADs were selected, detailed those ADs (Strategic Action's first draft)	
		First draft review by affected or interested stakeholders	Consultation
STAGE 3	Formal Announcement of the SA	Strategic Action's draft approval and formal announcement of the SA	
	SA Implementation and Monitoring	ADs from the SA and environmental context follow-up	Application of evaluation criteria





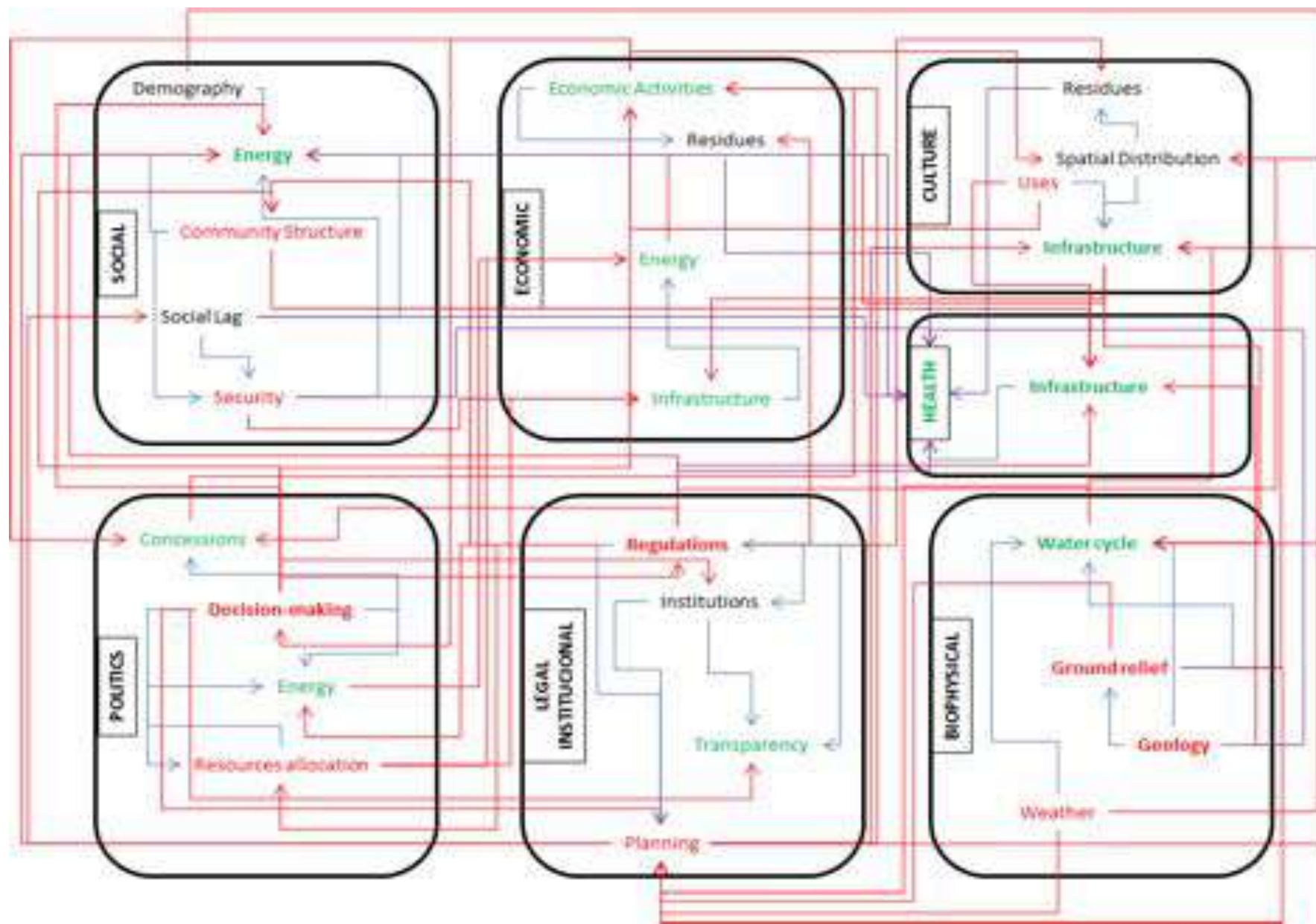




DRIVING FORCES		PRESSURE	STATE	IMPACT	RESPONSE
SOCIAL	Demography	More population, more water demand	No effect	Reduces water availability	Population increase is not a significant element.
	Energy [S]	Electricity production schemes and costs are a high pressure to the communities	-	Limits and negates access to water. Health risks.	Patterns of the human right to water violations.
	Community Structure	Community decision-making. Agreements are not reached. Low inter and intra community cooperation.	-	Limits access to water.	Most of the communities expect that anyone fixes his or her own problems. There is no will to improve conditions.
		Decision-making in communities. Agreements are reached.	+	Stimulates access to water	There are a few successful examples of community water management.
	Social Gap	Poverty affects communities.	-	Negates access to water. Health risks.	High migration because low job opportunities and for development.
	Security	Theft of electrical transformers in wells.	-	Negates access to water.	Communities or municipalities are in charge of the expenses.
		Communities take care of their drinking water infrastructure.	+	Stimulate access to water	The communities organize to protect their wells.

DRIVING FORCES		PRESSURE	STATE	IMPACT	RESPONSE
POLITICS	Concessions	High priority to agricultural use.	-	Limits access to water.	Water consumption in the region is dominated by agricultural use. There are communities without any kind of water source.
	Management	Water management is in response of personal motivation or by political parties' interests	-	Limits access to water.	Communities have to reach agreements with current authorities or expect that their political party(ies) reach power to solve their problems.
	Energy [P]	It is priority expensive electricity production.	-	Negates access to water.	Communities have to pay high electricity bills that they cannot always cover. They transfer the problem to the municipalities.
	Financial supports	There is a big budget for hydraulic infrastructure	+	Increases water availability.	High infrastructure investments without success.
		Electricity for wells used in agriculture is subsidized.	-	Reduces water availability	Water extraction for agriculture is huge, as well as their waste.





	ALTERNATIVAS (VER ANEXO 6)																								LÍNEAS DE ACCIÓN CON MAYOR ATENCIÓN POR PARTE DE LAS ALTERNATIVAS	
	POLÍTICAS				EDUCACIÓN - CAPACITACIÓN					INVESTIGACIÓN				PLANEACIÓN		INSTITUCIONAL					SALUD		LEGISLACIÓN			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	Q'	R	S	T	U	V	W		
POLÍTICAS INTERNACIONALES																										
Derecho Humano al Agua	1	1	1	1	1	1	1			1	1			1	1	1	1		1	1	1	1	1	1	19	79%
PROGRAMAS INTERNACIONALES																										
Seguridad Hídrica	1	1	1	1	1	1	1	1		1	1			1	1		1		1	1		1	1	1	18	75%
POLÍTICAS NACIONALES																										
Derecho Humano al Agua	1	1	1	1	1	1	1			1	1			1	1	1	1		1	1	1	1	1	1	19	79%
El agua es propiedad de la Nación			1				1			1	1		1		1		1		1	1		1			10	42%
Los Municipios tendrán a su cargo los servicios de agua potable...	1			1		1	1		1	1		1			1		1	1	1	1	1	1		1	16	67%
Seguridad Alimentaria	1										1			1	1				1	1		1			7	29%
Reducción de la vulnerabilidad ante el cambio climático	1		1		1						1	1		1	1				1	1		1			10	42%
PLANES NACIONALES																										
Agenda legislativa nacional incluyente que refleje temas de interés de grupos y organizaciones de la sociedad			1				1								1	1			1	1	1		1	1	9	38%
ALTERNATIVAS CON MAYOR IMPACTO EN LAS LÍNEAS DE ACCIÓN DESCRITAS	52 37%	12 8%	79 56%	71 50%	20 14%	25 18%	28 20%	31 22%	81 57%	42 30%	37 26%	2 1%	17 12%	47 33%	140 99%	26 18%	32 23%	24 17%	130 92%	26 18%	68 48%	65 46%	19 13%	87 61%		

STRATEGIC OBJECTIVE	GOAL	KEY ELEMENT	DRIVING FORCES
SUSTAINABLE ACCESS TO SAFE DRINKING WATER	Improve sustainable physical and economic accessibility to safe drinking water for people at the Altiplano Potosino	Physical accessibility	Weather; water cycle, geology, and land relief; regulations and institutions; decision-making process, water concessions, economic activities and economic support; infrastructure and energy.
		Economic accessibility	The water cycle, geology, land relief and spatial distribution of communities; regulations, institutions; decision-making process, concessions, economic activities and economic support; infrastructure, energy, and security.
QUALITY IN WATER SERVICES WITHIN AN IMPROVED WATER MANAGEMENT MODEL	Improve quality in drinking water services at the Altiplano Potosino	Quality of drinking water services	Regulations, institutions, transparency, and planning.
	Improve water resources management model for an effective citizen participation and economic sustainability	Improved water management model	Decision-making process, regulations, institutions, planning, economic activities, and transparency.
UPGRADED AND STRENGTHENED LEGAL FRAMEWORK	Propose adjustments to water management's legal framework to upgrade it with the recent legal provisions, and strengthen the institutions and stakeholder involved in water management	Adjustments to upgrade legal framework and strengthen institutions and stakeholders	Decision-making, regulations, institutions, planning

Program	Lines of Action
RESEARCH	Alternative energy sources
	Potabilization alternatives
	Water reuse
	Materials and equipment improvement
HEALTH	Water quality monitoring
	Water sources protection
	Rain harvesting
PLANNING	Community development planning
	Long-term state and municipal planning
REGULATION'S UPGRADING	Right to water upgrading
	Municipal regulations upgrading
	Regulation's scope review
EDUCATION	Drinking safe water within rural communities
	Efficient water use
	Water services payment culture
	Training for municipal water authorities
	Community projects development
INSTITUTIONAL STRENGTHENING	Access to information
	Economic federal resources monitoring
	Interinstitutional cooperation
	Institutional competences upgrading
POLITICAL MANAGEMENT	Surveillance of economic support allocation
	Water concessions re-distribution
	Water use management
	Political support for cheaper water supply alternatives



LEARNINGS

- IT WAS USED AN INTEGRATED MODEL (PLANNING + SEA)
 - **BASIC LESSON:** KNOW THE DECISION-MAKING AND PLANNING SYSTEM, AND DEVELOP A SEA PROCESS SUITED FOR IT. SEA MUST BE MANDATORY UNDER THE PLANNING FRAMEWORK.
- IT WAS USED AN HOLISTIC MODEL FOR THE ENVIRONMENTAL ANALYSIS OF THE PROBLEM
 - **BASIC LESSON:** DO NOT FRAGMENT THE ENVIRONMENT. ENVIRONMENT IS SOCIAL, ECONOMIC, HEALTH, CULTURAL, POLITIC, LAW, INSTITUTIONS, BIOPHYSICAL, ETC.
- AWARENESS ABOUT SEA HAS TO BE A PRIMARY AIM
 - **BASIC LESSON:** THERE IS A LOT OF WORK TO RAISE SEA AWARENESS IN MEXICO
 - **KEY ELEMENT:** DECISION-MAKERS MUST WANT OR HAD TO BE FORCED (LEGALLY-BASED) TO DEVELOP A PPP WITH A SEA PROCESS

WORK TO DO AND IN PROGRESS...

- **ROBUST CAPACITY-BUILDING**

1. DEVELOPMENT OF A COMPREHENSIVE LEGAL PROPOSAL FOR SEA IMPLEMENTATION IN MEXICO AT FEDERAL AND STATE GOVERNMENTAL LEVELS
2. DEVELOPMENT OF PROPER INSTITUTIONS FOR SEA ENFORCEMENT IN ALL GOVERNMENTAL LEVELS IN THE COUNTRY
3. DEVELOPMENT OF EFFECTIVE PUBLIC PARTICIPATION STRATEGIES
4. DEVELOPMENT OF RELIABLE AND TRANSPARENT ENVIRONMENTAL INFORMATION SYSTEMS
5. DEVELOPMENT OF EFFECTIVE SEA AWARENESS STRATEGIES
6. DEVELOPMENT OF SEA TRAINING SCHEMES FOR PRACTITIONERS AND DECISION-MAKERS
7. DEVELOPMENT OF CO-OPERATION NETWORKS WITH SEA EXPERTS WORLDWIDE

- **SPECIFIC PROCEDURAL REQUIREMENTS**

1. DEVELOPMENT OF SPECIFIC GUIDES FOR SEA USE

- **EXTENSIVE RESEARCH**

1. DEVELOPMENT OF MORE HUMAN RESOURCES SPECIALISED IN SEA

2. DEVELOPMENT OF MORE RESEARCH WITHIN MEXICAN UNIVERSITIES RELATED TO SEA

3. DEVELOPMENT OF SEA RESEARCH CENTRE IN MEXICO

4. DEVELOPMENT OF SEA RESEARCH NETWORKS WITH EXPERIENCED SEA ACADEMICS

5. SEA KNOWLEDGE DISTRIBUTION STRATEGY FOR MEXICO.

- **ACCUMULATE EXPERIENCE**

1. DEVELOPMENT OF MORE STRATEGIC ACTIONS IN ALL GOVERNMENTAL LEVELS WITHIN THE MEXICAN DECISION-MAKING AND PLANNING SYSTEM THROUGH THE SEA PROCESSES PROPOSED IN THIS OR FURTHER RESEARCHES

TODAY

- NEW RESEARCH PROJECT DERIVED FROM THE PREVIOUS ONE (started Nov 2018)
- TWO YEAR (2018-2020) RESEARCH PROJECT FUNDED BY A STATE FUND (\$2,600,000MXP; £100,000)
- SEVERAL GOVERNMENT INSTITUTIONS (FEDERAL, STATE AND MUNICIPAL LEVELS); THREE ACADEMIC INSTITUTIONS; NINE RESEARCHERS (ENVIRONMENTAL SCIENCES; CIVIL ENGINEERING; CHEMICAL SCIENCES; LAW); SEVERAL MS.C STUDENTS; SEVERAL UNDERGRADUATE STUDENTS
- DRINKING WATER PROBLEM IN A NEW SLP REGION OF 12 MUNICIPALITIES LINKED TO SDGs



ACKNOWLEDGEMENTS

