

Urban Environmental Sustainability
Initiative: China, Mexico, and South Africa

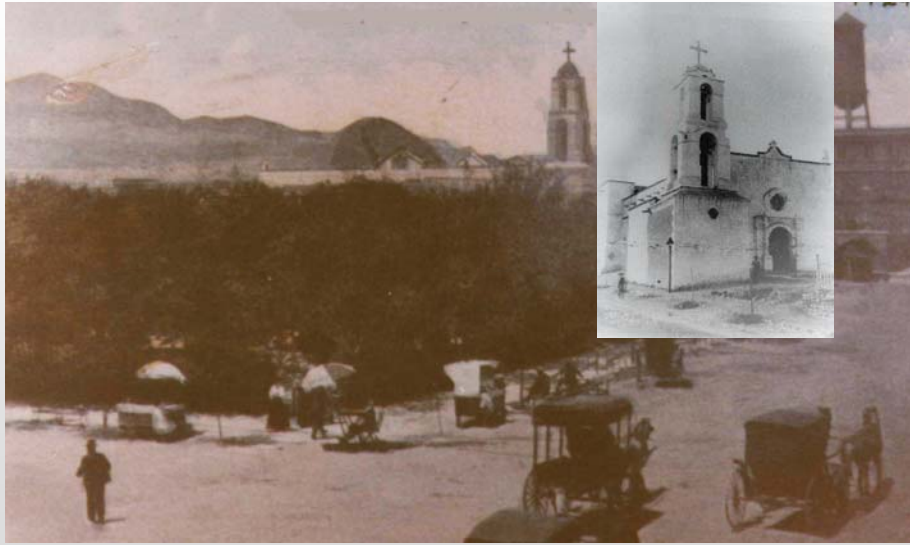
**Challenges to and Opportunities for
Urban Environmental
Sustainability:**

Perspectives from Mexico

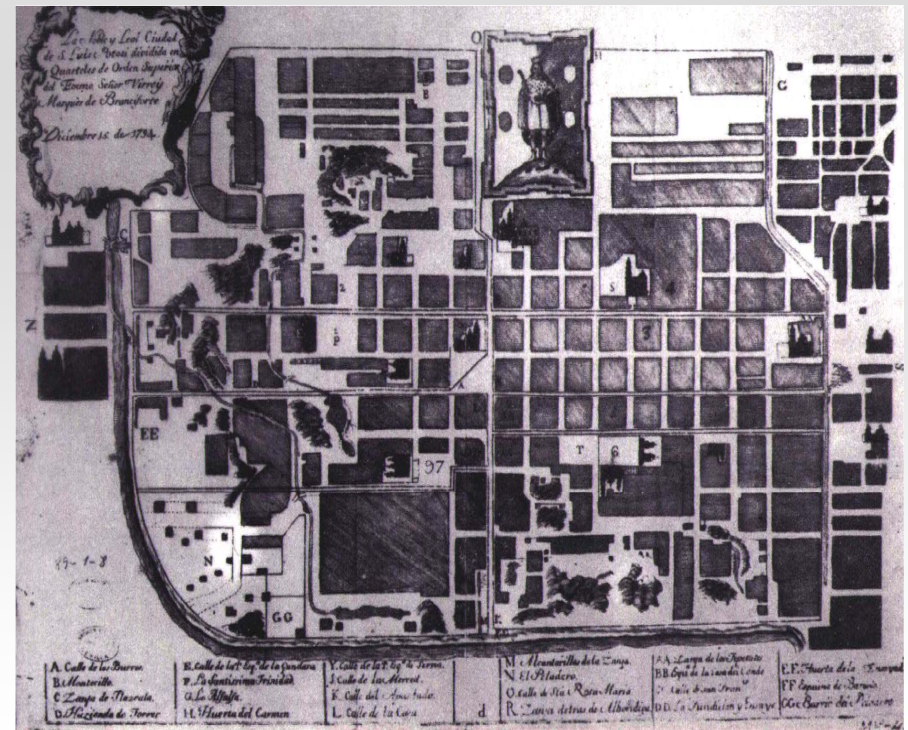
Luis Felipe Siqueiros
Harvard University- *Mexico*

Newport, Cal. February 7, 2006

The Mexican Historical Planned Cities: 17th and 18th centuries



- Strong history of Public initiatives
- Tied to delegated powers: religious, state's, race and origin.
- The hundreds of cities created during the Colonial period set up a growth pattern, which was of use until the 20th century



San Luis de Potosí (1794)

Big changes during the 20th century

1. Today, in México, 75% of the population lives in cities. 62% in cities of more than 15,000 inhabitants. 30% in cities over 1 million. Cities over 0.5 million went from 21 in 1990 to 30 in 2000.
2. Today, competing cities in various Mexican states are concentrating the economy and the political powers. New ideas and initiatives are taking place in “the provinces”. These cities may represent:
 1. Spaces of segregation, inequalities, degradation, insecurity, and alienation ?
 2. Spaces of collective development, well-being, human encounter, civic rights and freedom ?

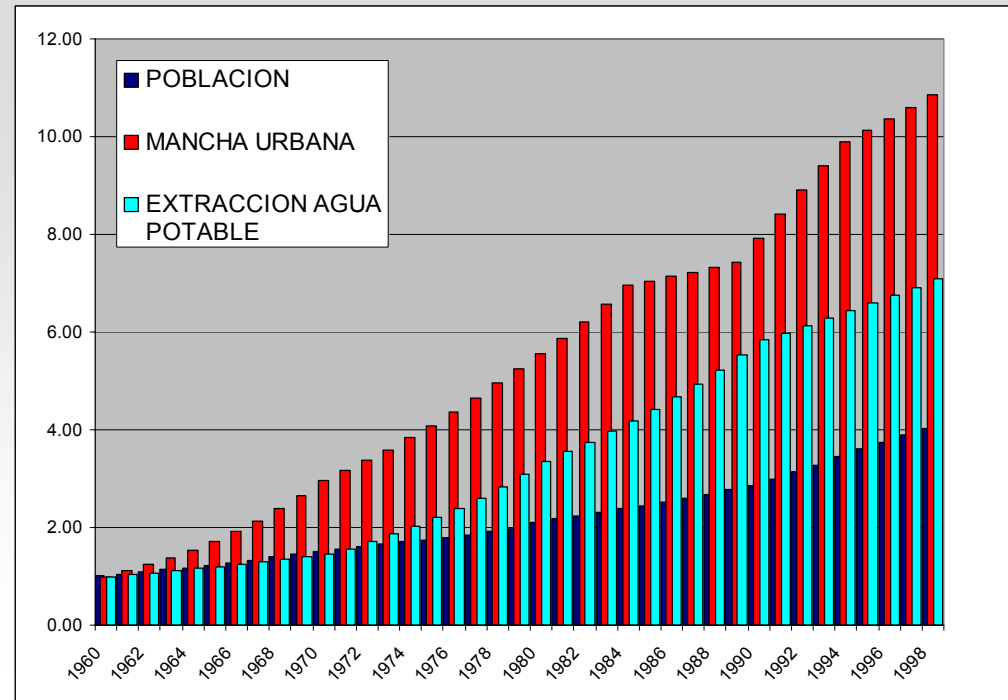


Today's growth pattern

- Without planning, or without tying planning to actions
- Unaware of their own reality
- Without consensus, decisions from the top
- Irrelevant weigh of natural resources
- Individual initiatives driven growth
- Short term vision
- Business oriented policies
- Without funds for infrastructure
- Poor and unstable public institutions: education, health, security, safety, child and age protection...
- Weak independent civic organizations and leaderships.
- Disrupted cultural references
- Unsolved property rights



Jeopardizing the future



IN THE TERRITORY

- Water – sewage - storm water
- Transportation
- Sprawl
- Unregulated growth
- Infrastructure deficits
- Public facilities
- Lack of public and open spaces
- Illegal settlements
- Invasion of public space

EFFECTS

IN THE SOCIAL AND ECONOMIC CONDITIONS

- Poverty, low wages
- Untrained and uneducated population
- Crime on the rise, impunity
- Uprooted and disintegrated communities
- Incredibly low public investment (compared to private)
- Informal activities (+50% of the population)
- Improvisation, corruption and extensive illegal practices
- Inefficient public Administration



VARIABLES

EXAMPLES

1-Population vs. land and water consumption

2-Transportation

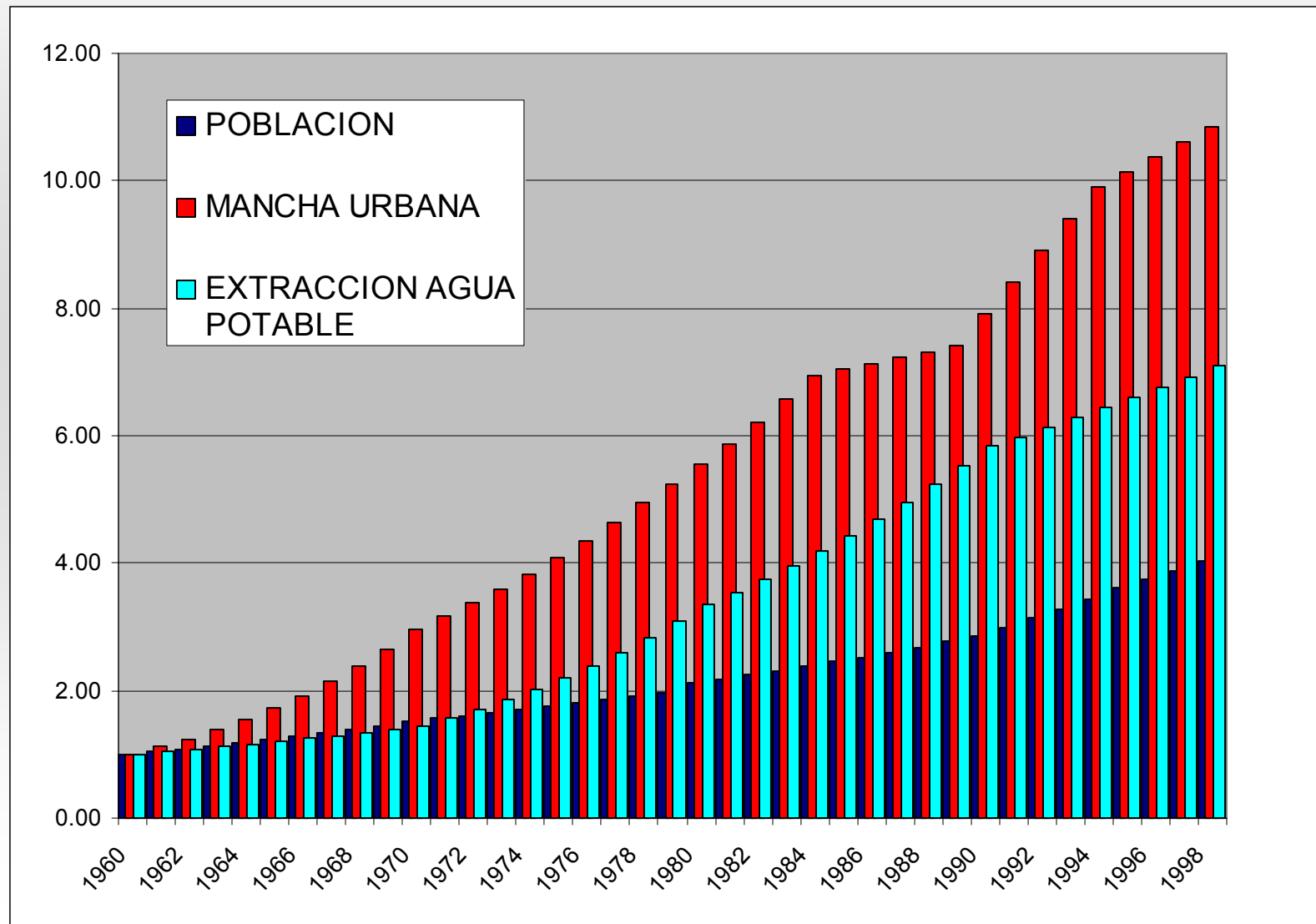
3-Education

4-Homicides

5-Public revenues and expenditure

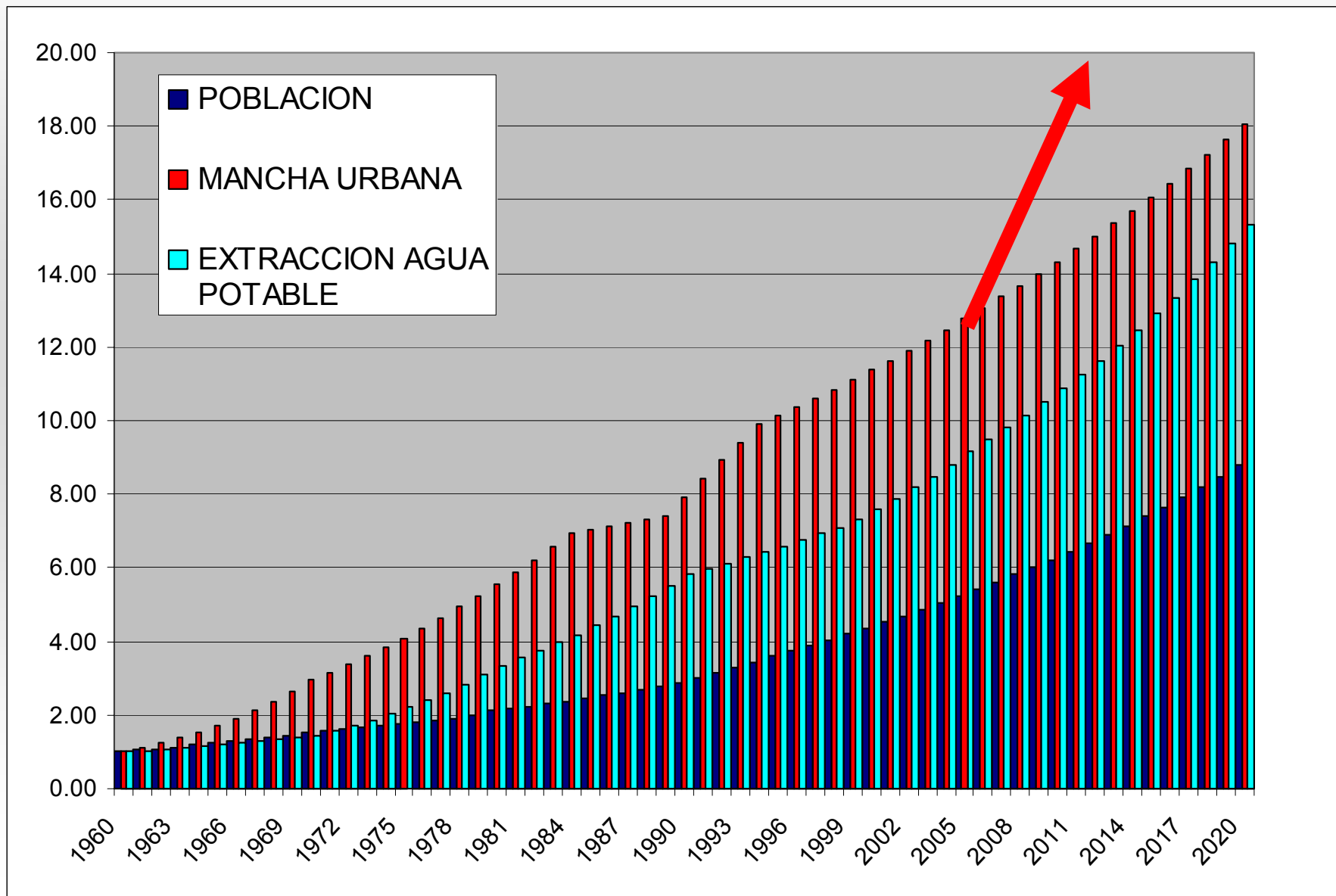
POPULATION VS. LAND AND WATER CONSUMPTION

An example of unsustainable development



POPULATION VS. LAND AND WATER CONSUMPTION

Future demand projection



TRANSPORTATION

				1989	1996	2001
Bus trips				45%	25%	21%
Vehicles				35%	51%	61%
Non motorized				20%	24%	18%

EDUCATION

EFICIENCIA TERMINAL

Within the OECD, México occupies the last position in population 25 to 34 years old and 55 to 64 years old having finished High School

First to 6th Grade

Querétaro: 98.8%

National median: 88%

Chihuahua: 85%

7th to 12th grade

Nuevo León=88.3%

National median=78.8%

Chihuahua= 74.5%

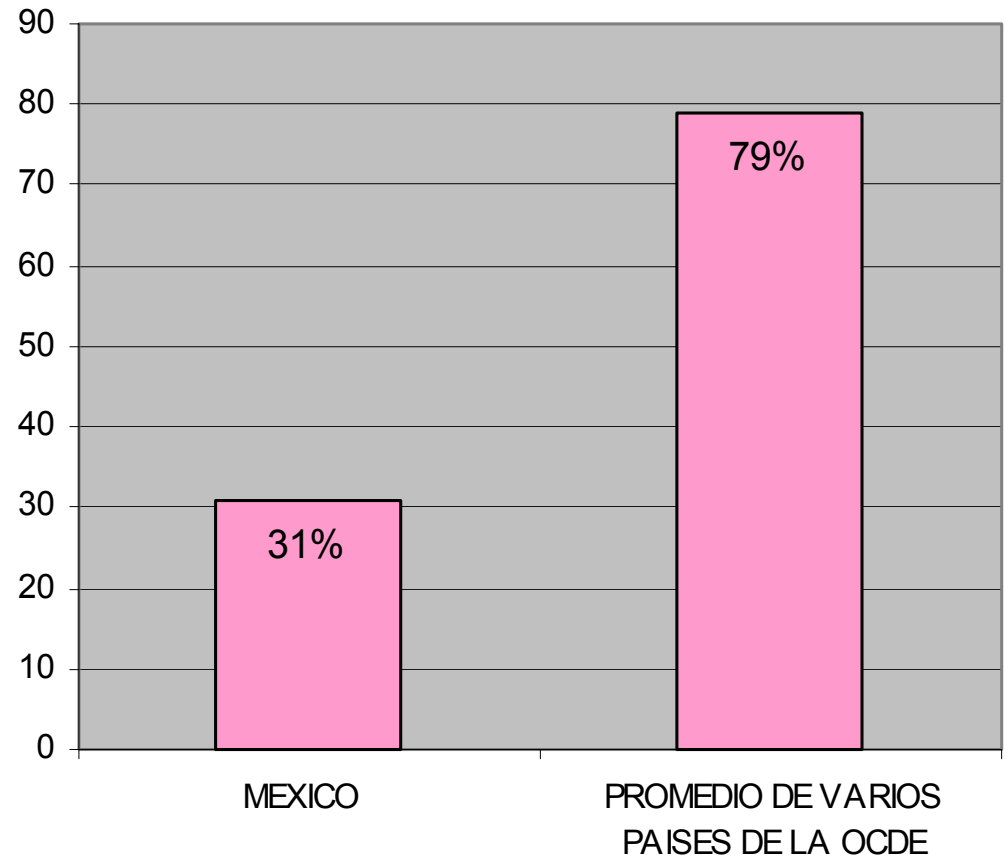
High School

Puebla= 76.8%

National median= 61.6%

Chihuahua= 54.8%

**ESTUDIANTES GRADUADOS DE BACHILLERATO
QUE INICIARON LA PRIMARIA
FUENTE: UNESCO 2001**



EDUCATION

**Percentage of Children and teenagers going to school in border cities,
2000**

Municipio	6 - 14	15 - 19
Mexicali	93.5	52.8
Piedras Negras	92.7	42.6
Matamoros	92.6	43.8
Reynosa	92.2	44.3
Juárez	91.8	41.2
Nuevo Laredo	91.5	43.7
Acuña	91.1	29.2
Tijuana	90.7	45.4

Average number of school years in Juarez: 7.5

Neighborhood with minimum average years of education= 3.8

Neighborhood with maximum average years of education= 12.5



HOMICIDES

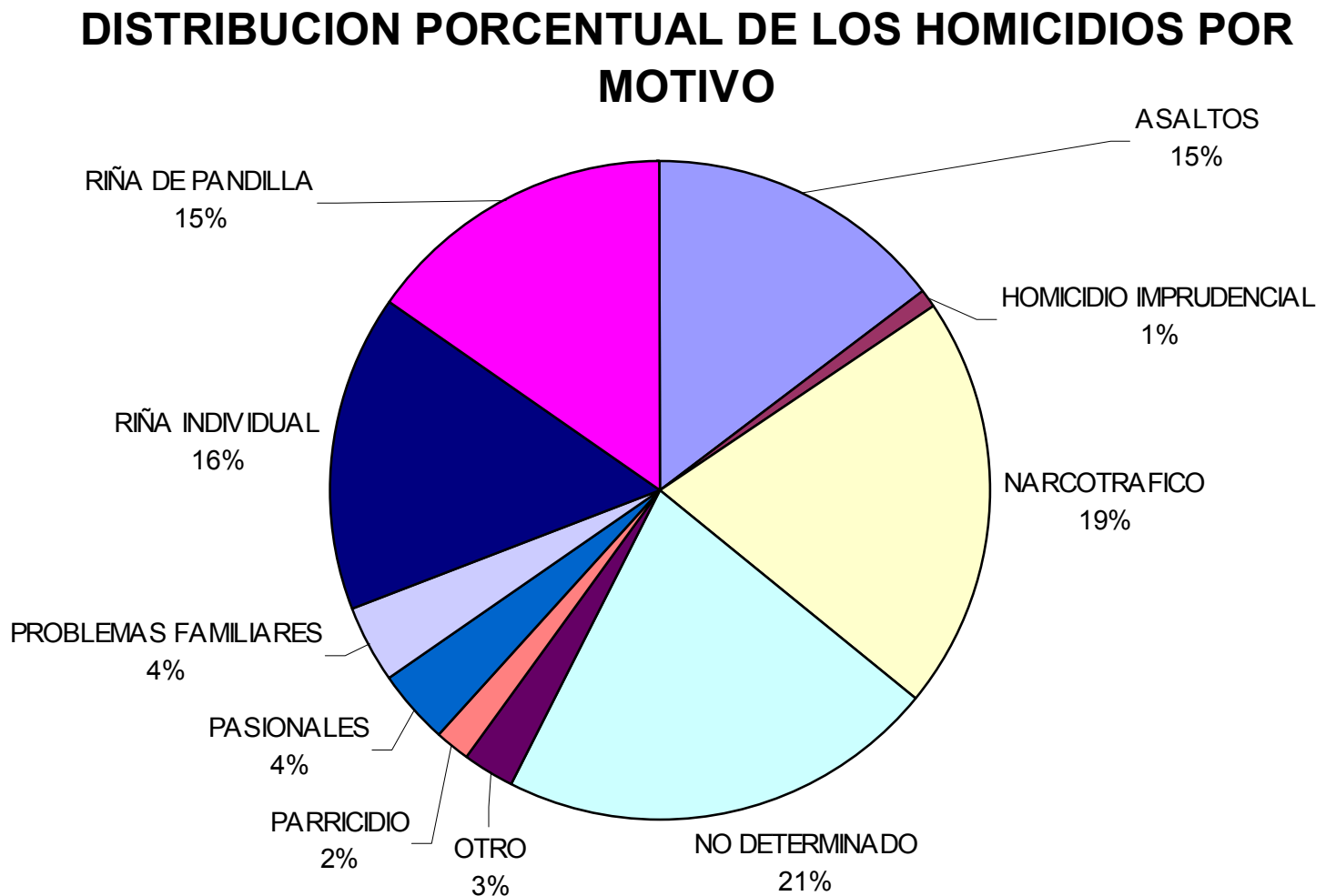
Homicides per 100,000 inhabitants in selected cities

1999

Dallas:	19.5	(20.5 in 1996, 33 in 1981)
New York:	10.5	(13.4 in 1996, 25.8 in 1981)
Los Angeles:	16.26	(20 in 1996, 29 in 1981)
Philadelphia	27.4	(27.1 in 1996, 21.5 in 1981)
Ciudad Juarez:	24.3	
Mexico D.F.:	20.7	
Marseille:	0.2	
Paris:	0.7	
Munich:	5.6	
Frankfurt:	6.9	
London:	2.2	
Tokyo:	1.6	
Kyoto:	1.2	
Chihuahua:	32	
N. Leon:	14	
Tijuana:	32	
Mexicali:	22	

HOMICIDES

Juarez: different forms of organized crime=more than 50%



Municipals income

Mpio. Tijuana	(EJERCICIO 2003)	%
IMPUESTOS	378,925,664	18.1
DRECHOS	183,297,795	8.7
PRODUCTOS	19,872,351	0.9
APROVECHAMIENTOS	124,410,867	5.9
PARTICIPACIONES	1,158,515,984	55.2
EXTRAORDINARIOS	233,126,109	11.1
INGRESOS	2,098,148,770	100.0

FUENTE: TESORERÍA MUNICIPAL DE TIJUANA

Mpio. Guadalajara	(EJERCICIO 2003)	%
IMPUESTOS	377,837,013	14.7
DRECHOS	153,864,789	6.0
PRODUCTOS	178,163,047	6.9
APROVECHAMIENTOS	169,110,765	6.6
PARTICIPACIONES	1,243,329,061	48.2
APORTACIONES FEDERALES	456,494,196	17.7
SUBTOTAL DE PART. Y APORT.	1,699,823,257	65.9
INGRESOS	2,578,798,871	100.0

FUENTE: TESORERÍA MUNICIPAL DE GUADALAJARA

Mpio. Chih.	(EJERCICIO 2003)	%
IMPUESTOS	286,486,444	29.4
DRECHOS	101,812,509	10.5
PRODUCTOS	28,166,451	2.9
APROVECHAMIENTOS	55,793,564	5.7
PARTICIPACIONES	311,073,336	32.0
APORTACIONES	189,544,637	19.5
SUBTOTAL DE PART. Y APORT.	500,617,973	51.5
INGRESOS	972,876,941	100.0

FUENTE: TESORERÍA MUNICIPAL DE CHIHUAHUA

Mpio. Cd. Juárez	(EJERCICIO 2003)	%
IMPUESTOS	387,979,586	23.4
DRECHOS	219,645,923	13.3
PRODUCTOS	40,730,193	2.5
APROVECHAMIENTOS	187,989,302	11.3
PARTICIPACIONES	444,523,436	26.8
APORTACIONES	375,622,398	22.7
SUBTOTAL DE PART. Y APORT.	820,145,834	49.5
INGRESOS	1,656,490,838	100.0

FUENTE: TESORERÍA MUNICIPAL DE JUÁREZ

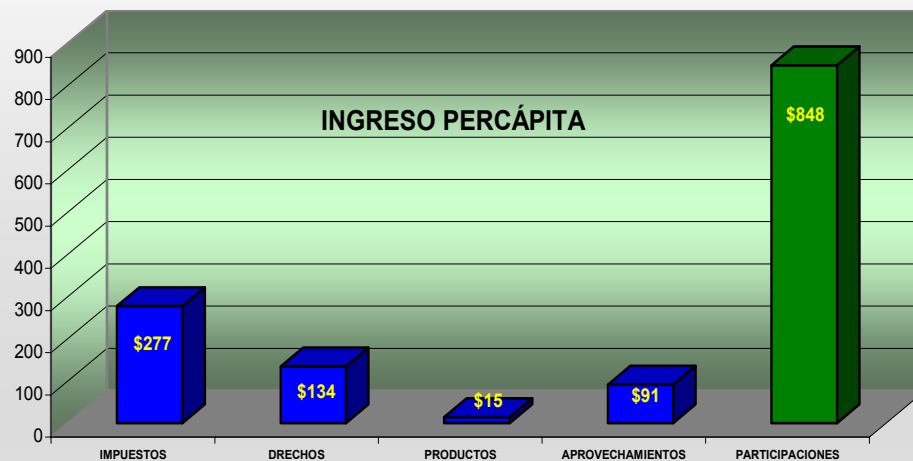
Comparativo de municipios

INGRESOS PER CAPITA

Mpio. Tijuana	POBLACIÓN*		
	1,365,801		
IMPUESTOS	277	20.3	
DRECHOS	134	9.8	
PRODUCTOS	15	1.1	
APROVECHAMIENTOS	91	6.7	
PARTICIPACIONES	848	62.1	
	1,366	100.0	

FUENTE: CÁLCULOS POPIOS CON INFORMACIÓN DE LA TESORERÍA MUNICIPAL DE TIJUANA

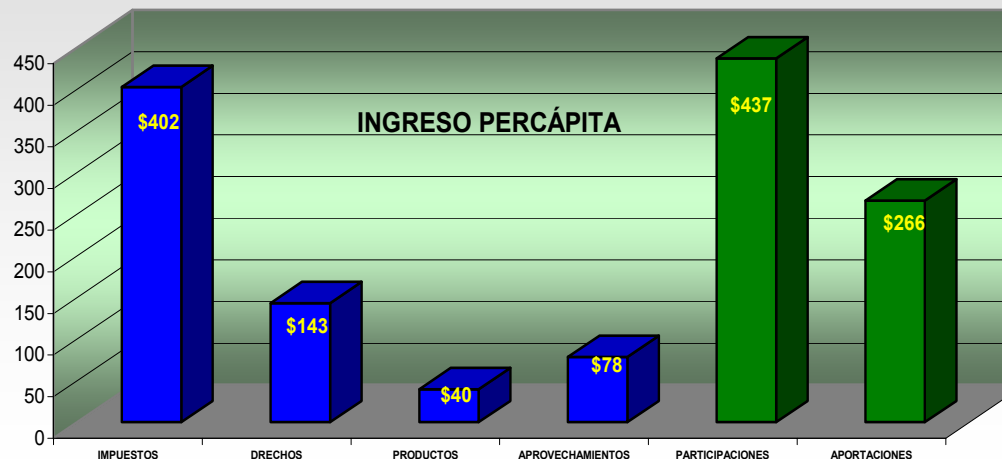
* PROYECCIONES DE CONAPO



Mpio. Chih. 2003	POBLACIÓN*		
	712,073		
IMPUESTOS	402	29.4	
DRECHOS	143	10.5	
PRODUCTOS	40	2.9	
APROVECHAMIENTOS	78	5.7	
PARTICIPACIONES	437	32.0	
APORTACIONES	266	19.5	
	1,366	100.0	

FUENTE: CÁLCULOS POPIOS CON INFORMACIÓN DE LA TESORERÍA MUNICIPAL DE CHIHUAHUA

* PROYECCIONES DE CONAPO



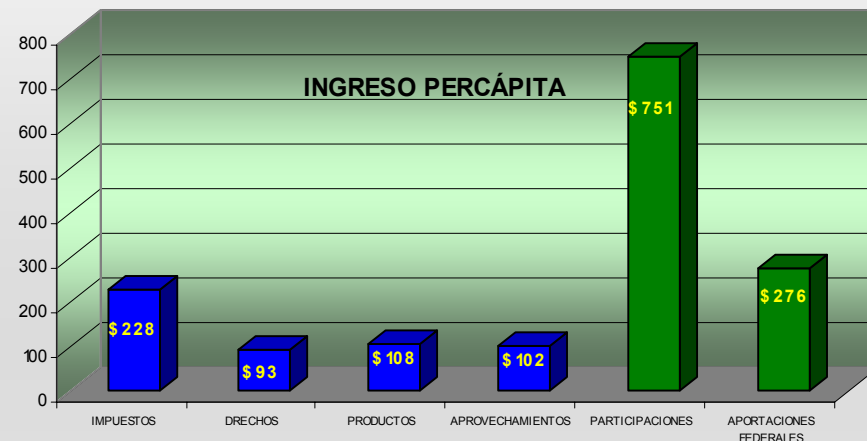
Comparativo de municipios

INGRESOS PER CAPITA

Mpio. Guadalajara 2003		POBLACIÓN*	%
		1,654,999	
IMPUESTOS	228	14.7	
DRECHOS	93	6.0	
PRODUCTOS	108	6.9	
APROVECHAMIENTOS	102	6.6	
PARTICIPACIONES	751	48.2	
APORTACIONES FEDERALES	276	17.7	
	1,558	100.0	

FUENTE: CÁLCULOS POPIOS CON INFORMACIÓN DE LA TESORERÍA MUNICIPAL DE GUADALAJARA

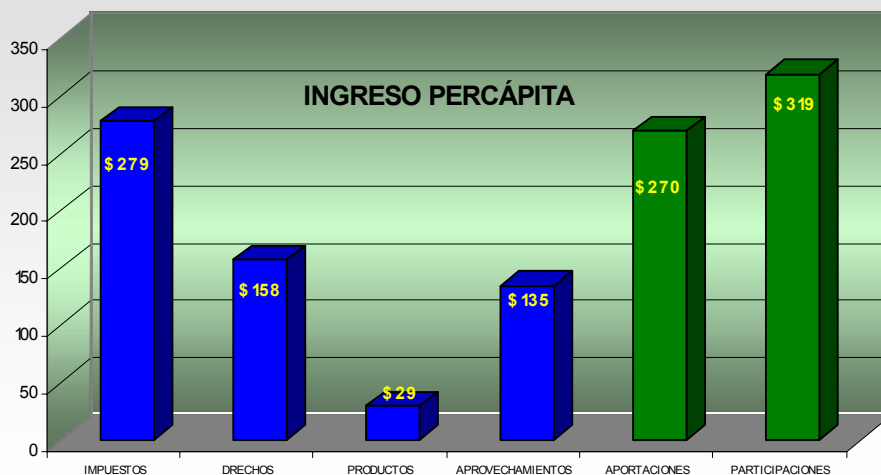
* PROYECCIONES DE CONAPO



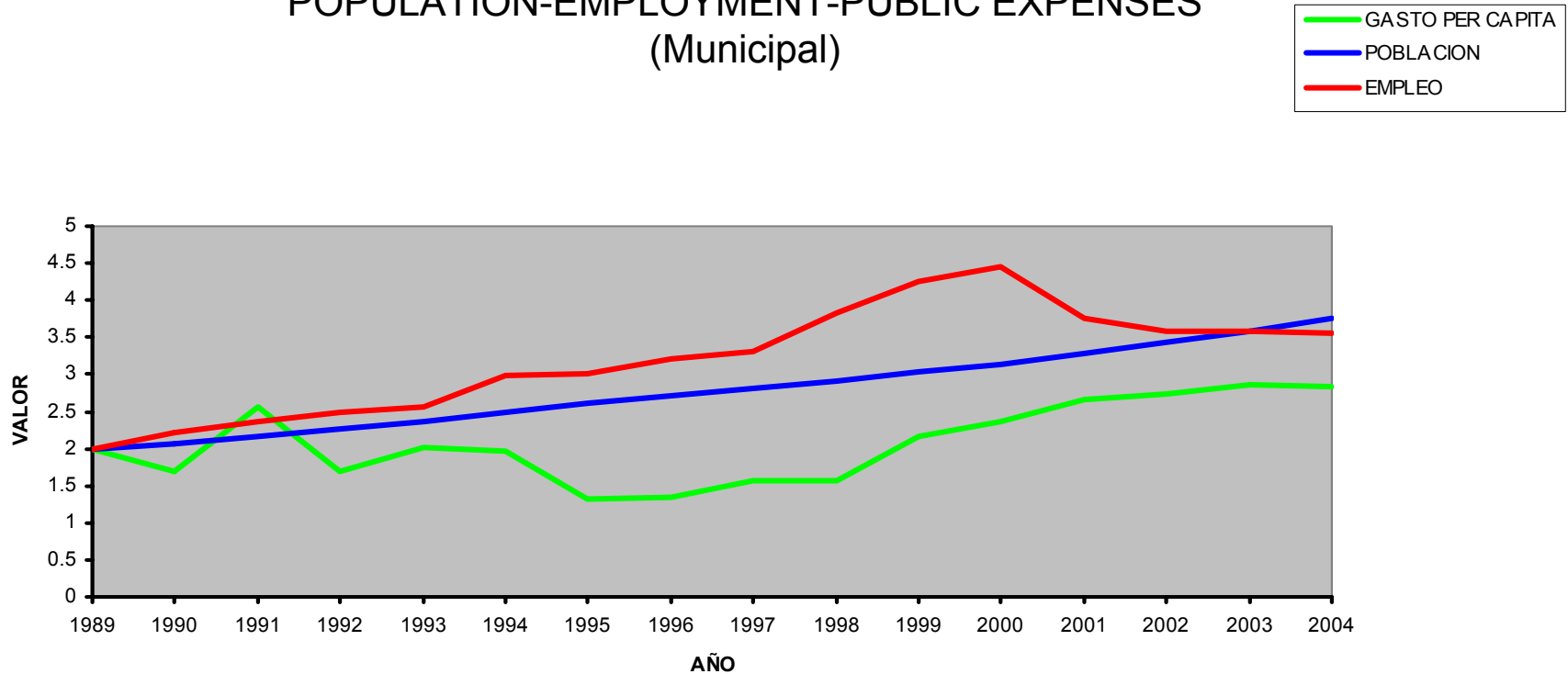
Mpio. Cd. Juárez 2003		POBLACIÓN*	%
		1,392,100	
IMPUESTOS	279	23.4	
DRECHOS	158	13.3	
PRODUCTOS	29	2.5	
APROVECHAMIENTOS	135	11.3	
APORTACIONES	270	22.7	
PARTICIPACIONES	319	26.8	
	1,190	100.0	

FUENTE: CÁLCULOS POPIOS CON INFORMACIÓN DE LA TESORERÍA MUNICIPAL DE JUÁREZ

* PROYECCIONES PROPIAS DE IMIP



POPULATION-EMPLOYMENT-PUBLIC EXPENSES (Municipal)



Municipal budget 2003 = \$126.3 million dollars

US\$90.7 doll. per capita/year

Infrastructure expenses 2003: \$47.2 million dollars

PUBLIC EXPENDITURE

OCDE

	PIB PESOS CORRIENTES	PORCENTAJE DEL GASTO EN RELACION AL PIB	POR CENTAJE EN GASTO LOCAL RECOMENDADO
		0.35	0.20
CIUDAD JUAREZ	156,447,500,000	54,756,625,000	10,951,325,000
CIUDAD DE MEXICO	1,410,500,000,000	493,675,000,000	98,735,000,000

DESCENTRALIZACION

		0.24	0.20
CIUDAD JUAREZ	156,447,500,000	37,547,400,000	7,509,480,000
CIUDAD DE MEXICO	1,410,500,000,000	338,520,000,000	67,704,000,000

GASTO REAL 2002	GASTO ADMINISTRATIVO RECOMENDADO	%	GASTO ADMTIVO REAL PARA 2002	PORCENTAJE
1,535,664,410	5,601,602,738	51.15	785,468,934	14.02%
72,936,100,000	55,676,666,500	56.39	43,944,900,000	73.87%
1,535,664,410	3,841,099,020	51.15	785,468,934	20.45%
72,936,100,000	38,178,285,600	56.39	43,944,900,000	107.73%

Transferencias federales

ingresos propios

impuestos

Ciudad de México

31,384

34,019

14,018 millones

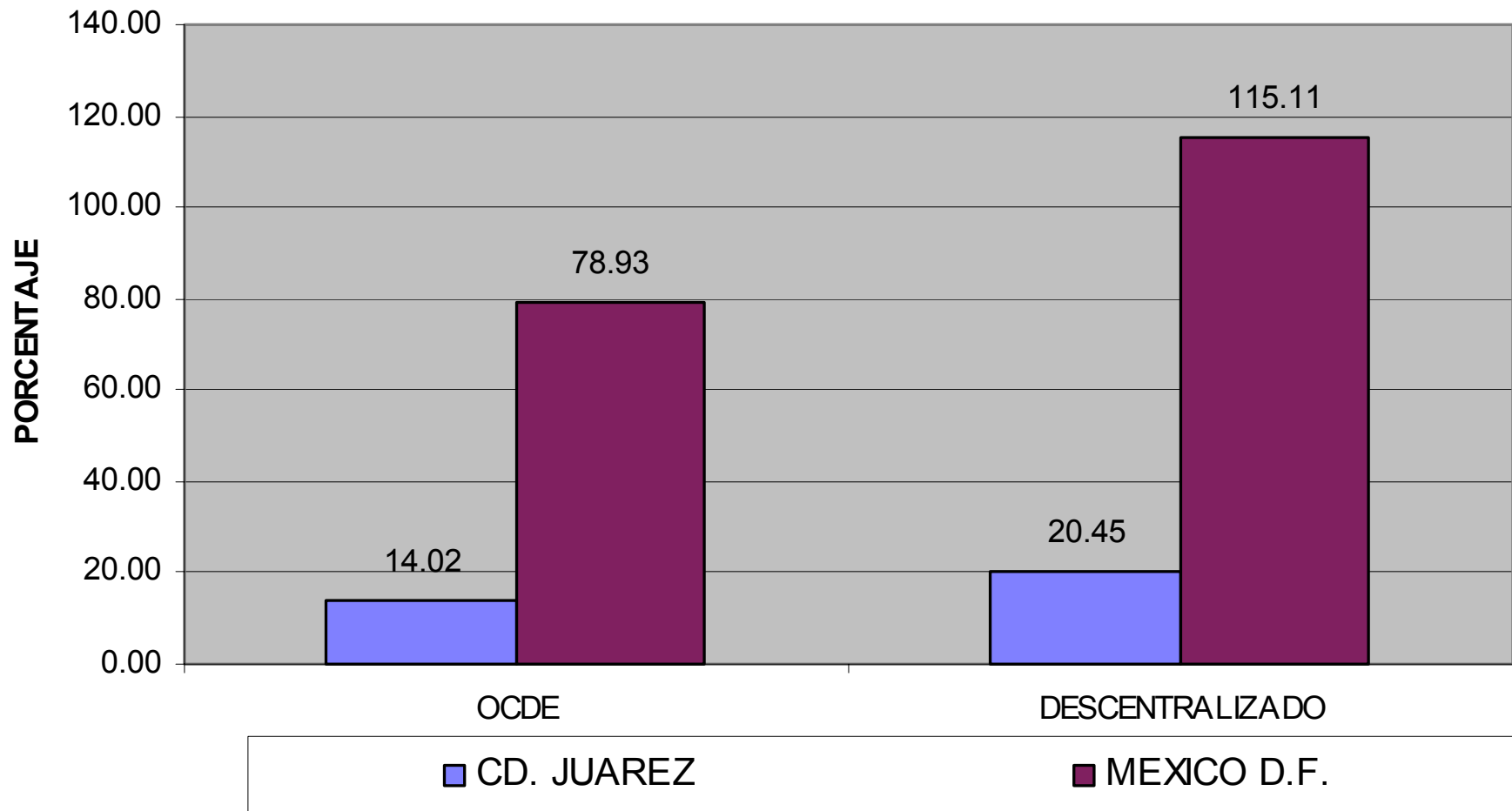
Ciudad Juárez

718

817

359

COMPARACION PRESUPUESTAL 2002



ADMINISTRATIVE COSTS

ADMINISTRATION AND OPERATION

	2002	GASTO POR HABITANTE	GASTO POR HECTAREA
GASTO CORRIENTE (Servicios personales, materiales y suministros)	785,468,934	591	36,314
			0
GASTO DE INVERSION	750,195,477		0
OBRA PUBLICA E INFRAESTRUCTURA	412,420,484	398	24,468
INMUEBLES MAQUINARIA Y EQUIPO	116,817,110		0
DEUDA PUBLICA	41,476,770		0
SUBSIDIOS Y TRANSFERENCIAS, EROGACIONES EXTRAORDINARIAS	179,481,112		0
TOTAL	1,535,664,411	989	60,782
US. DLLS	168,754,331	109	6,679
		1,330,000	21,630

GASTO POR HABITANTE 2002

Ciudad Juárez= 65 dólares

Ciudad de México= 997

Atlanta= 1,902

Seattle= 2232

Buenos Aires= 258

Recife= 335

Rosario= 809

Colonia= 3,599

Madrid= 547

GASTOS ADMINISTRATIVOS POR HECTAREA

CONCEPTO / Año	1995	1996	2002
EGRESOS TOTALES	16,266	16,107	30,910
ADMINISTRACIÓN	2,503	2,509	4,932
SEGURIDAD Y SERVICIOS PÚBLICOS	7,342	6,617	8,694
OBRAS PUBLICAS Y EQUIPAMIENTO	1,272	3,769	10,687
DESARROLLO SOCIAL	1,937	1,667	1,576
GASTOS A NIVEL GOBIERNO	3,212	1,544	5,021

GASTOS ADMINISTRATIVOS POR HABITANTE

CONCEPTO / Año	1995	1996	2002
EGRESOS TOTALES	305	302	503
ADMINISTRACIÓN	47	47	80
SEGURIDAD Y SERVICIOS PÚBLICOS	138	124	141
OBRAS PUBLICAS Y EQUIPAMIENTO	24	71	174
DESARROLLO SOCIAL	36	31	26
GASTOS A NIVEL GOBIERNO	60	29	82

Purchasing-power parity (2003)

Rank	Country	PPP total	PPP/capita	Population
		(\$ billions)	(\$)	(million)
	European Union	10,840	28,600	379
1	USA	10,400	37,600	290
2	China (mainland)	5,700	4,400	1,287
3	Japan	3,550	28,000	127
4	India	2,660	2,540	1,049
5	Germany	2,180	26,600	82
6	France	1,540	25,700	60
7	Britain	1,520	25,300	60
8	Italy	1,440	25,000	57
9	Russia	1,350	9,300	144
10	Brazil	1,340	7,600	182
11	South Korea	931	19,400	48
12	Canada	923	29,400	32
13	Mexico	900	9,000	104

PUBLIC EXPENDITURE IN % OF NBP

Developed countries	over 35%
OCDE average	45.8 %
MEXICO	21%

FISCAL REVENUES IN % OF NBP

OCDE average	32.4 % (1)
MEXICO	14% (2)

INCOME TAX IN % OF NBP

OCDE average	9.5 %
United States	11.6%
Canada	15.1%
Denmark	27.4%
MEXICO	1.8%

Notas 1 y 2. David W. Eaton y Javier Alberto Reyes calculan un 28% del PIB en promedio de recaudación de los países de la OCDE. El dato de que México recauda el 14% es de ellos. (27 de octubre de 1999)

Nota 3. Todos los otros datos son de Demetrio Sodi de la Tijera, 19 de octubre de 2002, Norte

PROPERTY TAX IN % OF NBP

Developed countries 2.5 a 3.0 %

Chile, Argentina 1.8 – 2.0 %

México 0.3%

US EXAMPLE: EL PASO, TEXAS:			
COLLECTS	TYPE	AMOUNT (% OF TOTAL VALUE)	OBJECT
	PROPERTY TAX	1.6	SCHOOLS
	IDEM	0.53	CITY
	IDEM	0.2	COUNTY
	IDEM	0.1	HOSPITALS
	IDEM	0.1	COLLEGE
CITY	TOTAL PROPERTY TAX	2.53	
CITY & STATE	SALES TAX		INFRASTRUCTURE
STATE & FED. GOV.	GAS TAX		HIGHWAYS

MEXICO EXAMPLE: .01%

Place oriented policies

BROAD, UNRELATED TO PLACE

- Financial schemes to produce houses
- New business and make grow existing
- Job generation
- Economic and financial needs for infrastructure -
- More private sector participation
- Formality, legality



ROOTED, URBAN

- The city: cradle of productive, cultural and democratic activity
- Innovation and care of resources
- Open Policies for investment and regulation
- Institutions and laws as common references and “cohabitation rules”
- Public-private synergies
- Social capital
- Located somewhere, in the territory

Changes from the bottom?

Contrasting reforms demands

BROAD, UNRELATED TO TERRITORY

- Fiscal: State capacities, formality,
- State's Services: avoid financial crisis, deal with Unions, modernize, privatize
- Political Reforms: Balance and Distribution of power, elections,
- Judiciary Reform: Distribution of responsibilities: Federal, States, (national police?), open trials

ROOTED, URBAN



- Fiscal: decentralization, local capacities, capital building, formality
- State's Services: education, health, pensions
- Political Reforms: Administration, actions, stability (reelection?), professional civil service, multiple and territory oriented responsibility (for city council, judges...)
- Judiciary Reform: basic lawful state

Consensus and a long way of institutional building

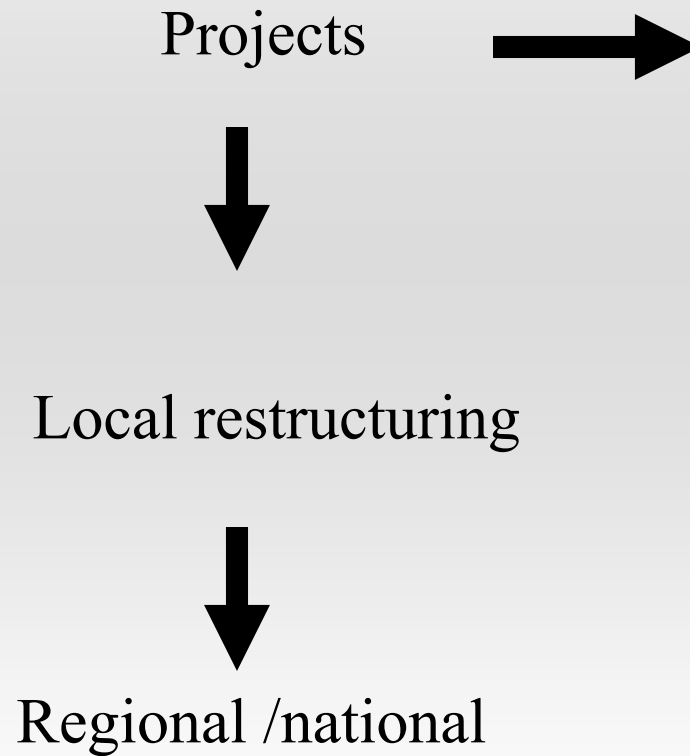
Cities in need of a spatial, cultural and social basis which would allow for a more healthy and sustainable development.

Unreachable basis, under the present conditions.

A shift or evolution for a sustainable approach, bringing structural reforms: fiscal, administrative, cultural, legal...

Traditional VS. more innovative efforts

Traditional VS. more innovative efforts



Bringing science to cities / helping cities to become science oriented

How to:

- Support networks, citizens' involvement
- Help cities to build structures: social, physical ideological
- Help them evaluate objectively public (and some private) initiatives
- Share methods and skills
- Use their own resources and innovative capacities
- Connect them to world's knowledge networks



