SOCIAL LEARNING AS A REQUIREMENT FOR RURAL DEVELOPMENT: THE CONNECTIVITY OF SALINAS, SAN LUIS POTOSÍ, MÉXICO

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Abstract

It is postulated that communities using social learning on rural planning will achieve sustainable development. The construction of roads integrates geographic spaces and it is a requirement for competitiveness and development of the communities. In Mexico, the construction of roads and its improvement use existing ways originated by the transfer of cattle or the pathways drawn over past times, without considering any municipal or local development plan.

One looked for to define a reference frame on the importance of the ways, first in Mexico, the state of San Luis Potosí and the behavior of investment in the municipality of Salinas de Hidalgo, San Luis Potosí and to outline an intervention method that allows to design criteria for the decision in the road construction using like planning tool the social learning.

Any alternative of road selection it is desirable that should include local actors weighting their needs along with the technical criteria as well under an IPMA competence baseline scheme.

Introduction

The construction of rural roads in different countries represents a substantial investment of contributions received or as a source of national, state o even local indebtedness with a differential load on the inhabitants of rural areas.

Investment in paved roads that connect two large cities is done through agreements between State-Federal mixed funds where each State provides membership for each road-section. The San Luis Potosi State Government agrees an annual operating programme with the Federal Secretariat of Communications and Transport operated through the State Board of Roads is responsible for build roads. However, the more extensive rural road network is responsibility of the municipalities as the smallest administrative unit. Therefore is an issue of importance, the way in which municipalities decide to guide their investment in rural roads infrastructure.

The importance of rural roads is accentuated by the competitiveness of rural producers to take their products to more convenient (nearest or competitive) market.

Cliquet (2006) pointed out the advantages of incorporating the geomarketing concept into businesses, but there has been no effort to link the geomarketing with successfull rural agribusiness opportunities. Some models have been established for modeling the behavior of business customers, business behaviour and on direct marketing components.

The geomarketing represents a form of business that you can apply as a planner for the development of municipal infrastructure policies intelligence. If we reduce the marketing mix in its four generic components: product, price, place and advertising, we will look for explain the

structural circumstances that are influencing the agribusiness in Salinas, San Luis Potosi in particular on the issue of investment in rural roads (Place).

Social learning has been postulated as an analytical tool for decision-making by collectives. (Kilvingtons/f).

Objective

The objective for this proposal is to define a framework on the importance of roads, first in Mexico level, then the State of San Luis Potosí and the behavior of investment in the municipality of Salinas of Hidalgo, San Luis Potosí and sketch an intervention to regulate criteria for decision in road construction method using social learning as a planning tool.

Methodology

The inventory of roads according to surface bearing in Mexico at the State level as main speed regulator was consulted. The main source of information is the Secretariat of Communications and Transports of the Mexican Government (www.sct.gob.mx), the data obtained are displayed in Annex 1. With this information, the road extension percentage within each State is obtained and a multivariate classification is made.

National roads definitions are below mentioned in increasing design complexity:

- **Improved rural road**: rustic land or stony road conditioned by the hand of the man according to local needs.
- **Roadbed**: Granular way composed of gravel, sand and compacted slime that allow the transit vehicle with speed restrictions.
- **Coated road**: route with a thin layer of asphalt or compacted gravel that interconnects rural villages or urban small.
- **Two-lane highway**: Road with geometric and structural design for terrestrial transport with a cruise speed of 80 km per hour in two-lane highway (one to go and other back).
- **Four lane highway**: Roads with geometric and structural design for terrestrial transport with a cruise speed of 80 km per hour in four lanes (two in one way and two in another sense) involving the increase of an existing road or a new route with optimization criteria in its design.

The orientation of the municipal investment in terms of roads was defined made by authorities in the State of San Luis Potosí. The main source of information was the Secretary of Social and Regional Development of State of San Luis Potosí (Secretaríade Desarrollo Social y Regional, SEDESORE). This database contains municipal investment regarding roads exercised by municipalities. The Fund for the Social Infrastructure at Municipality level and the Fund for the Strengthening of the Municipalities (FONDO PARA LA INFRAESTRUCTURA SOCIAL MUNICIPAL y FONDO PARA EL FORTALECIMIENTO DE LOS MUNICIPIOS) were analyzed during 2008 (www.sedesore.gob.mx).

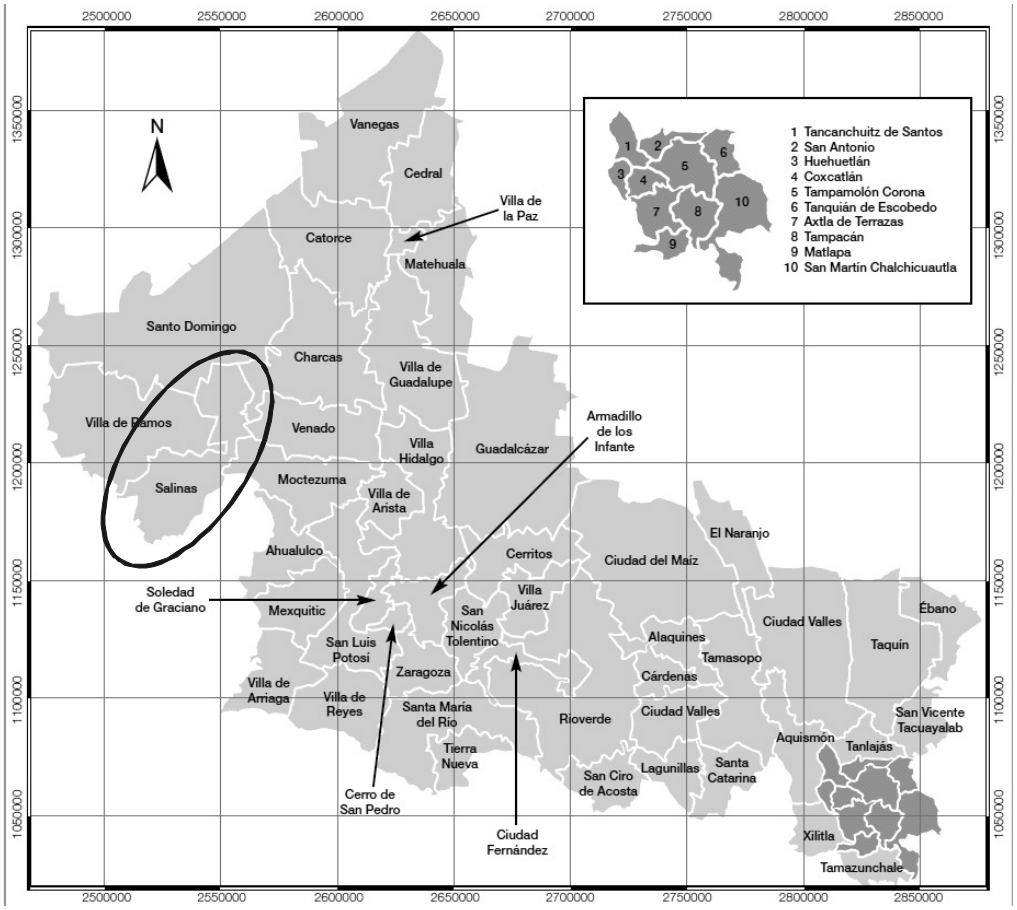

Figure1.Location of Salinas, San Luis Potosí, México (from PNUD, 2005)

Within the municipality of Salinas, we sought investment in roads made during the last decade through different municipal administrations (an administration a 3-year basis). The main source of information is mentioned Secretary of Social and Regional Development of State of San Luis Potosí (www.sedesore.gob.mx).

To perform the classifications we used SAS v 9.1 (Statistical Analysis System see SAS Institute (2004). Classification standardizes values and groups according to their affinity minimizing the variance of each formed groups (Wardmethod). The characteristics of each of the groups are finally obtained.

Finally a survey of the roads in Salinas was made during January, 2009 by using a GPS Trimble Juno ST and ArcPad version 7.1 to capture the geographic route, ground speed and the surface bearing of the roads that communicated to the different villages of the municipality of Salinas. The travel time from villages to Salinas was recorded using a vehicle according to recommended speed for each type of bearing surface (80 km/h for road paved (of two or four lanes), 60 km/h to coated road, 40 km/h for roadbed and 30 km/h for improved rural road). Measurement started from the center of the village to the outskirts of Salinas.

Results

On the main roads of Mexico

Figure 2 shows the classification tree according to surface bearing showing at the left side the State order (see annex 1) and the groups formed are depicted.

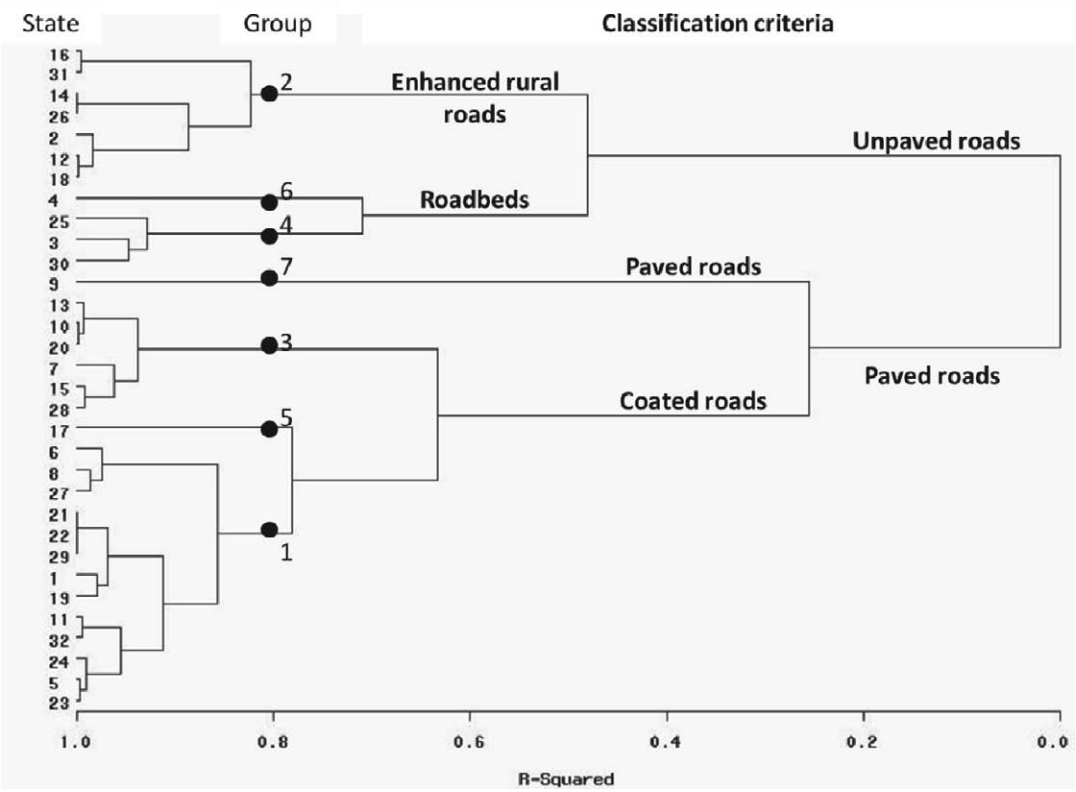

Figure2.Classification tree ofstate roads in Mexico.

The classification process defines 7 groups that explained 80% of the variability of surface bearing that each Mexican state has built along the years. Bearing surfaces groups were ordered by States where abound paved roads from two to four lanes explaining 37% of road extension; the second classification criteria was the abundance of improved rural roads with 30 % of variance; the third criteria was the presence of roadbeds with 21% of variance for a full explanation of 88.1% of road extension in Mexico.

Table1.Variance and its components in the Mexican road classification.

Variance / Variable	Firstcomponent	Secondcomponent	Thirdcomponent
CumulatedExplainedvariance	**0.372**	**0.671**	**0.881**
Enhanced rural roads	-0.363	0.676	-0.235
Roadbed	-0.088	0.205	0.901
Coatedroads	-0.380	-0.691	-0.041
Two-lanehighways	0.628	-0.100	0.223
Four-lanehighways	0.567	0.112	-0.285

The main features of each of these groups are given in table 2,independently of the extension it is observed a similar road proportion.

Tabla2.Road typology classification.

Group	Classification	Number of states	Enhanced rural road	Roadbed	Coated roads	Two-lane highways	Four-lane highways
1	Coated and paved roads	13	0 a 7%	0 a 1%	43 a 51%	39% a 49%	3 a 7%
2	Enhanced rural road and paved highway	7	30 a 56%	0 a 1%	19 a 38%	21 a 42%	2 a 3%
3	Coatedroads	6	0 a 11%	0 a 2%	55 a 65%	27 a 31%	1 a 4%
4	Mixedroads	4	11 a 33%	10 a 14%	30 a 50%	21 a 35%	1 a 4%
5	Two-lanehighways	1	-	-	19%	68%	12%
6	Twolane and roadbeds	1	11%	14%	5%	69%	-
7	Paved roads	1	-	-	-	53%	47%

Source: Own classification based on SCT information showing quartile 1 (25%) and 3 (75%).

Group 1, Coated and paved roads. Refers to States dominated over 45 % of two-lane highways and paved roads, in this group belongs the most States of Mexico: Tlaxcala, Querétaro, Quintana Roo, Coahuila, San Luis Potosí, Tabasco, Chihuahua, Nuevo León, Puebla, Colima, Zacatecas, Guanajuato and Aguascalientes.

Group 2, Enhanced rural roads and paved roads. This group is constituted bystates where more than 30% of the roads are enhanced rural roads without greater coating of bearing surfaces, and a combination of two-lane roads and coated roads. The states are: Yucatan, Michoacán, Nayarit, Guerrero, Baja California, Sonora and Jalisco.

Group 3, Coated roads. Refers to states where coated roads are more than 55% of bearing surface. It is the group of states with the largest roads network regardless of the extension on two-lane roads. States are identified as Chiapas, Hidalgo, Oaxaca, Tamaulipas, Mexico and Durango.

Group 4, Mixedroads. States where there is no predominance of any bearing surface. In this group are located states like Veracruz, Baja California and Chiapas.

Morelos is different from the other states in Mexico by having more than 68% of two-lane roads and having a significant investment in four lanes plus a null existence of terracería, roads and gap road that constitutes the **Group 5, two-lane highways**.

Group 6, Two-lane and roadbedsis identified as Campeche where the extension coated road is the youngest of all States, focusing on two-lane, terracería roads and gap road.

Group 7, **Paved roads**. Mexico City is distinguished in Mexico by the entity dominated paved road (two lanes or four lanes), 100 % of the roads are paved because is mainly the capital of the country.

The State of San Luis Potosí is located in Group 1 (coated and paved roads), 57% of the routes are coated roads (6,756 km) supplemented with 39% of two-lane highways (4,484 km) for a state extension in 2007 of 11,519 km of tracks.

The roads of San Luis Potosí

For orientation of municipal investment exercised by Municipalities regarding roads Fund for the Social Infrastructure at Municipality level and the Fund for the Strengthening of the Municipalities (FONDO PARA LA INFRAESTRUCTURA SOCIAL MUNICIPAL y FONDO PARA EL FORTALECIMIENTO DE LOS MUNICIPIOS) were analyzed during 2008 (www.sedesore.gob.mx). From data were separated the spending in construction, maintenance and repair of roads from remodeling of public squares, investment in schools, extension of the sewerage and drinking waternetwork as well as support to housing, tourism and historical sites.

A principal component analysis using Ward method was conducted to grouping the municipalities according to the variables: the **budget** spent on roads in thousands of euros; the **participation**on municipal budget expenditure on roads; and **investment per capita** in roads expressed in pesos per inhabitant of the municipality.

Table 4 shows the criteria for grouping municipal expenditure on roads: first classification criterion separate municipalities with greater participation on roads as well as greater investment per capita (77% of the variance with influence of 0.6); the second criterion places municipalities with greater budget spent on roads (95% of the variance with 0.85) apart from smaller budgets; and finally the third criterion differ municipalities with high investment per capita of municipalities with high participation in roads (100%- 0.72 vs 0.68).

Table3.Principal component on Budget dedication to roads at municipality level at Salinas, San Luis Potosi, Mexico.

Variance / Explanatory variable	Firstcomponent	Secondcomponent	Thirdcomponent
CumulatedExplainedVariance	0.774	0.951	1.000
Budget on roads (thousands ofeuros)	0.512	0.857	0.058
Municipality Budget participation (% of total municipal budget)	0.612	-0.317	-0.725
Per capitainvesment (euros per inhabitant)	0.602	-0.407	0.687

Municipalities according to expenditure on roads are shown in Figure 3. The municipalities that allocated greater participation, greater investment per capita and greater budgetary roads are located on the positive direction of the X axis (groups 4 and 5 means 4 municipalities); in the positive direction of the Y axis are separate those municipalities who devoted greater budgetary roads (Group 1: 1 municipality). In the crossings of the axes are municipalities with average behaviors (Group 2: 26 municipalities), note in the negative sense of the X-axis those municipalities who devoted less attention to the issue of roads in all three variables (Group 1: 19 municipalities) of all 58 municipalities of the State of San Luis Potosí, Mexico.

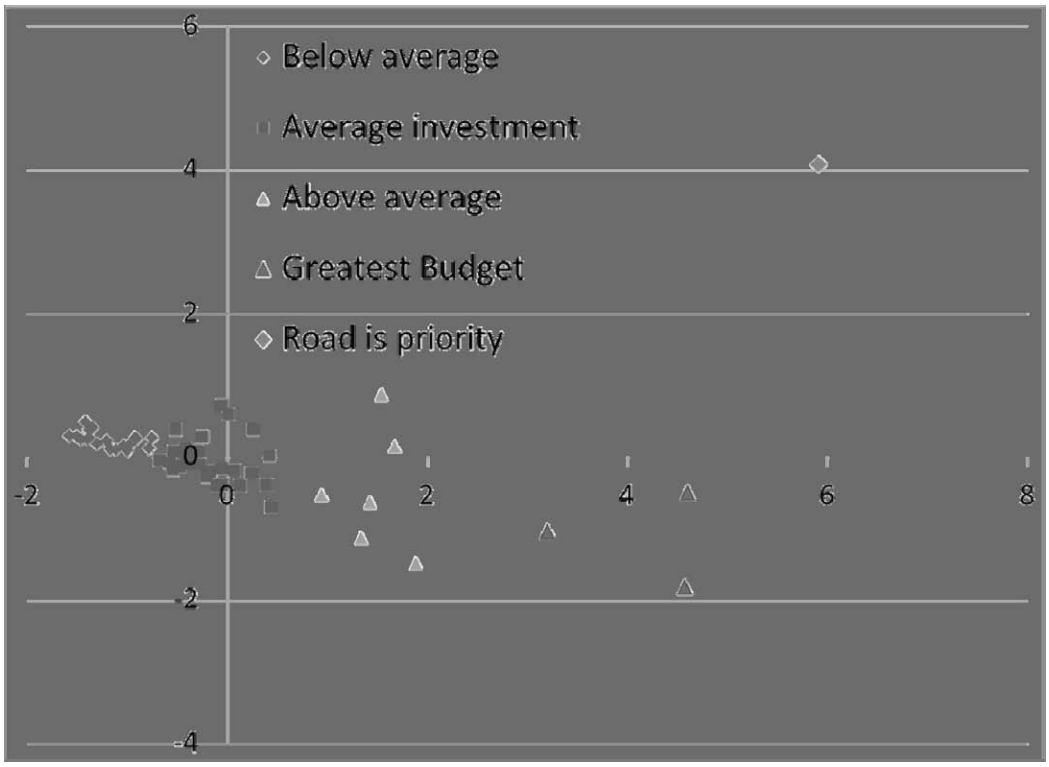

Figure3.Investment classification on roads at municipalities in San Luis Potosí, 2008.

The characteristics of 5 types of groups that explain 80 percent of the municipalities are listed in table 4. It is shown the average and the quartiles 25 % (q1) and 75 % (q3) of each group. The municipalities of the South-East of San Luis Potosí are the municipalities that have greater dedication to roads already considered making a strong investment more than 1,140 annual euros and with an investment of more than 65 euros per capita (groups 4 and 5) that corresponds to municipalities with a high annual rainfall.

Table4.Types of investment on road at San Luis Potosí.

Type of municipal investment	Number of municipalities	Municipal Budget (thousands of euros)	Participation on the Budget (%)	Percapita investment (eurosper inhabitant)
Investment below average (Group 1)	19	132 (45-223)	4.6 (2.0-7.9)	4.6 (1.2-6.4)
Average investment (Group 2)	29	354 (189-397)	16.5 (13.6-17.7)	17.6 (12.4-21.0)
Investment above average (Group 3)	6	753 (174-1,289)	34.8 (30.9-41.2)	38.8 (34.6-45.3)
Strong per capita investment (Group 4)	3	1,510 (1,141-2,157)	46.2 (42.2-51.3)	106.1 (85.4-132.9)
Roads as a priority (Group 5)	1	6,092	47.9	64.9

Source: Own classification based on SEDESORE, 2009 information

Bytheroads os Salinas

In the Salinas municipality during the past 11 years, the investment in roads (oriented in construction, maintenance and reconstruction) varies between 5% and 30% of the annual budget that receives the municipality. Smaller values dedicated to roads were given during the three-year period 2001-2003, management and administration 2007-2009 are again on smaller amounts of budget

Table5.Investment on roads at Salinas 1998-2008 (thousands of 2002-Euros)

Year	Construction	Manteinance	Rebuilding	Total	Municipality Budget	Participation (%)	Municipality Administration
2008	100.7	16.5	-	117.2	1,470.8	8.0	2007-2009
2007	28.6	94.0	-	122.6	1,186.3	10.3	2007-2009
2006	205.9	11.0	3.4	220.2	945.2	23.3	2003-2006
2005	144.7	27.8	-	172.6	1,094.0	15.8	2003-2006
2004	216.3	44.7	-	261.0	931.6	28.0	2003-2006
2003	87.5	-	-	87.5	906.2	9.7	2000-2003
2002	-	3.2	48.7	51.9	1,058.5	4.9	2000-2003
2001	76.5	0.3	-	76.8	849.8	9.0	2000-2003
2000	83.1	0.8	2.4	86.3	666.1	13.0	1997-2000
1999	75.1	12.9	-	88.0	658.5	13.4	1997-2000
1998	18.9	4.3	47.7	70.9	349.3	20.3	1997-2000

Note: The quantities expressed are deflacted to June 2002 (reference month for financial comparationsby Banco de México: inflation calculator) and converted in euros at the rate of change on December 31 2008: 19.56 weights by euro).

Source: SEDESORE, 2009

The survey of Salinas roads are shown in Figure 4, there are two paved roads that cross the municipalities in East-West direction connecting the main town to the regional economic poles of Zacatecas and San Luis Potosí, Capital of the State; communication from South to North is directed towards the municipality of Santo Domingo as axis connector to the northeast of San Luis Potosí.

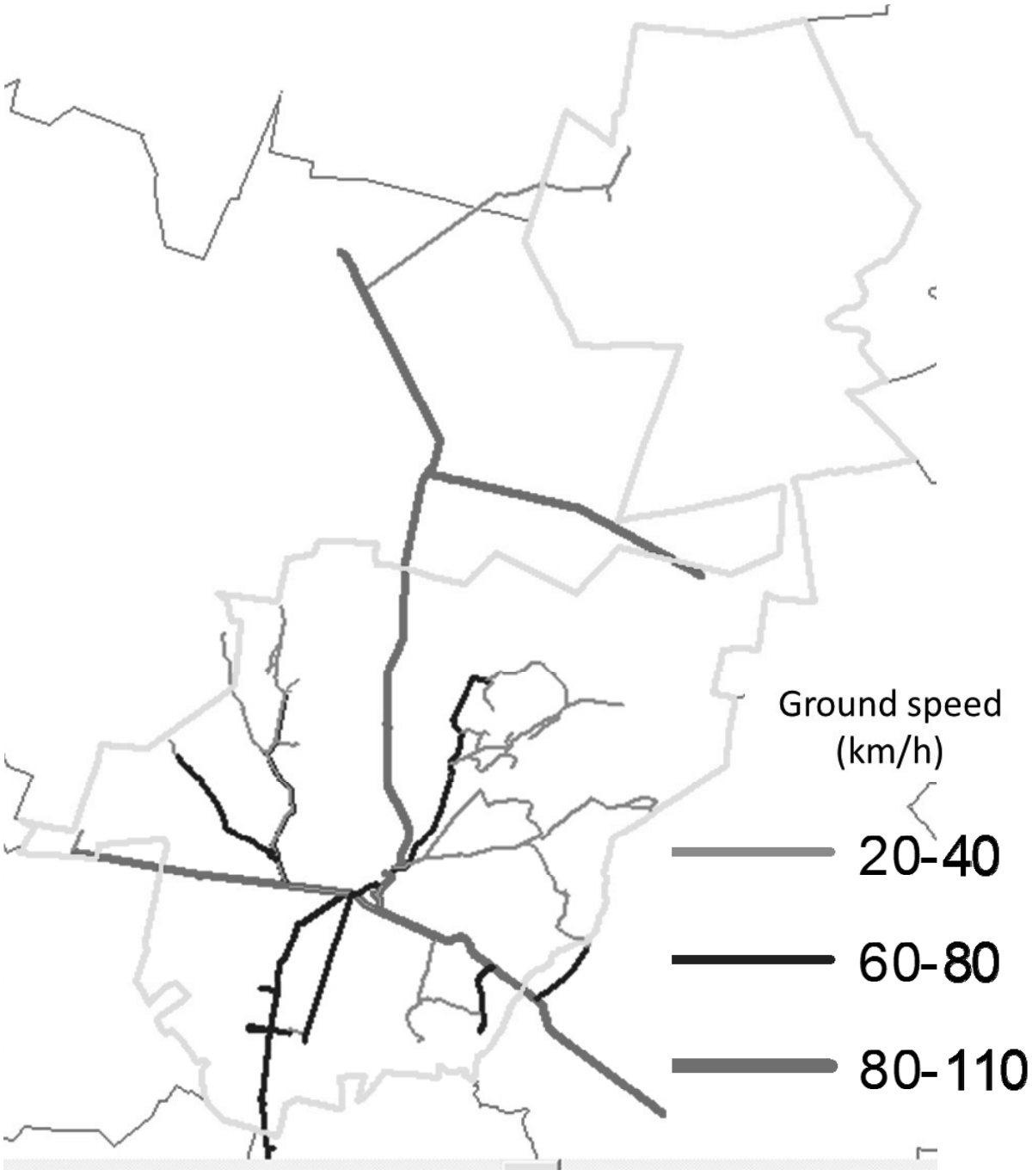

Figure4.Existent roads in Salinas, San Luis Potosí according to ground speed (2009).

Figure 5 shows the concentration of the population according to the travel time. 55% of Salinaspopulation lives in the municipal seat of Salinas de Hidalgo so do not implies a significant displacement of the municipality; 30% of the population lives less than 25 minutes and the remaining 20% of the population lives in populations of 25 to 45 minutes of Salinas. Only Mezquite and Estriboare towns located more than 100 minutes of the municipal seat representing 3% of the population.

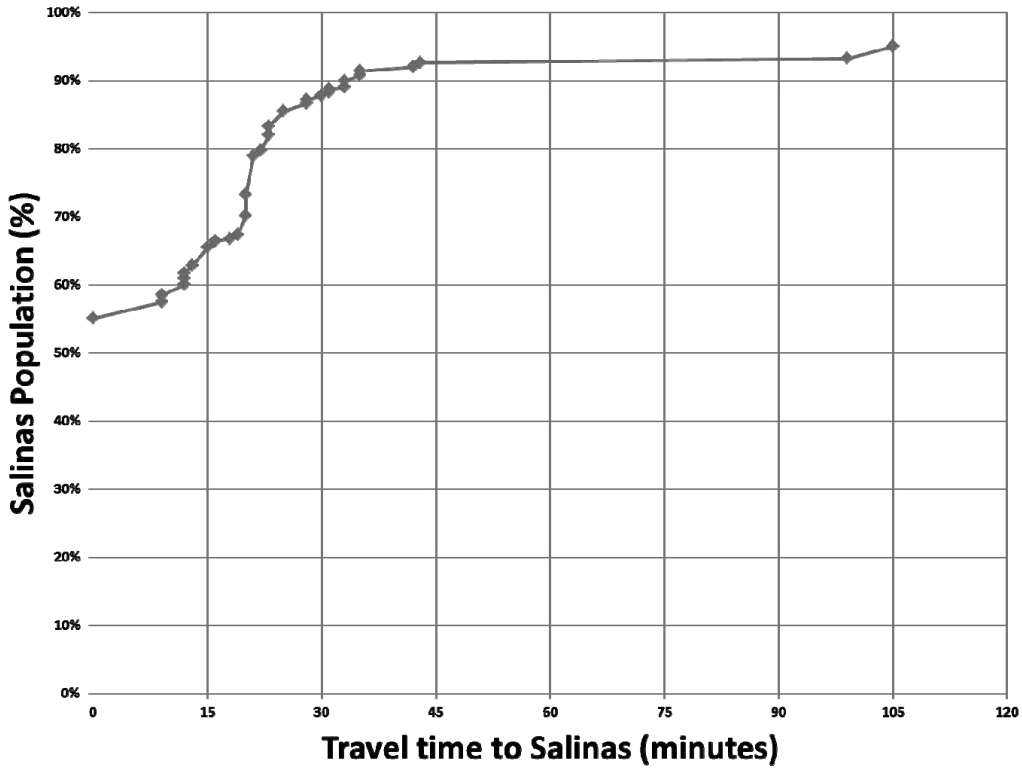

Figure5.Comparasionbetween measured and predicted travel time in Salinas, San Luis Potosí.

With this information it is defined the framework for a mechanism for improvement related to the construction of roads. Social learning can be the best strategy for rural road selection and can help to establish the premise that the decisions of a society can be improved with greater opportunities for dialogue and the way this dialogue generates ideas and motivates actions that go beyond meeting or collect a consensus of opinions.

A proposal for the definition of roads infrastructure policy must contain three pillars can promote social learning: A methodology for planning that involves stakeholders municipality city authorities, non-governmental agencies (civic foundations, organizations of agricultural producers, informal authorities), John Friedmann proposal on planning represents a frame of reference for Salinas (Cazorla, De los Ríos and Salvo, 2007).

A project management strategy that account to a citizens more aware of its role as an actor in development, so competences for the management of projection are a tool to ensure the quality of learning which can be attained by a municipality head (AEIPRO, 2006).

A Multicriteriadecision process allowtoo display various alternatives roads and should be technical proposal conducted by technical responsible for municipal road as the Directorate of Planning, Rural Development and Cadastre and Sustainable Rural Development Council (Dirección de Planeación, Desarrollo Rural y Catastroasícomo la Dirección de Desarrollo Rural Sustentable) of the municipality.

Conclusions

Roads in San Luis Potosí are predominantly are complemented by two lane paved roads lined roads.

In Salinas, San Luis Potosí, the public investment in roads are located between 24 and 125 pesos per capita, at the lowest state budgets on roads, and where eight of ten people is less than 25 minutes from the municipal seat.

References

AEIPRO. (2006). Bases para la competencia en la Dirección de Proyectos. Versión 3. Asociación Española de Ingeniería de Proyectos. International Project Management Association. Valencia, España.

Banco de México (2009). Calculadora de Inflación. Página Web: www.banxico.org.mx/polmoneinflacion/servicios/calcDeInflacion/calcDeInflac.html. Consultada el 7 de mayo de 2009.

Cliquet, Gerard. (2006). Geomarketing: methods and strategies in spatial marketing. Ed. Wiley-ISTE (International Scientific and TechnicalEncyclopedia). 327 p.

Cazorla, A; De Los Ríos, I.; Salvo, M. (2007). Desarrollo Rural: Modelos de Planificación. Universidad Politécnica de Madrid. Madrid, 2007.

Kilvington, Margaret Social learning as a framework for building capacity to work oncomplex environmental management problems. Documento Web: http://www.landcareresearch.co.nz/publications/researchpubs/Social_learning_review.pdf visitado el 24 de abril de 2009.

Programa de las Naciones Unidas para el Desarrollo, PNUD. Informe sobre desarrollo humano. San Luis Potosí. 2005. México, DF. 96 p.

SAS Institute Inc. 2004. Base SAS® 9.1 Procedures Guide. Cary, NC: SAS Institute Inc.

Secretaria de Comunicaciones y Transportes. Anuario Estadístico, 2007.

SEDESORE. Sistema de Información del Desarrollo Social y Regional. Secretaría de Desarrollo Social y Regional. Gobierno del Estado de San Luis Potosí. Pagina WEB: www.sedesore.gob.mx/SIDESORE/sidesore.html, visitada el 24 de abril de 2009.

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Annex

Annex1. National Road inventory acording to bearing surface (km), 2007.

State	Total roadextension	Enhanced rural road	Roadbed	Coatedroads	Two-lanehighway	Four-lanehighway	Group
MEXICO (National)	**360,075**	**66,569**	**10,149**	**156,184**	**115,557**	**11,616**	
Aguascalientes	2,247	299	-	760	1,091	97	1
Baja California	11,419	4,284	390	4,199	2,229	317	2
Baja California Sur	5,286	1,056	738	1,576	1,867	49	4
Campeche	5,514	608	790	270	3,789	57	6
Coahuila	8,337	-	-	4,314	3,296	727	1
Colima	2,109	141	80	882	823	183	1
Chiapas	22,226	59	1,024	15,521	5,353	269	3
Chihuahua	13,152	-	1,063	6,417	4,800	872	1
Distrito Federal	149	-	-	-	79	70	7
Durango	14,799	2,048	-	8,228	4,130	393	3
Guanajuato	11,875	1,561	-	5,139	4,697	478	1
Guerrero	17,644	5,751	142	7,222	4,259	270	2
Hidalgo	11,188	1,274	180	6,024	3,303	407	3
Jalisco	24,934	14,156	185	4,781	5,160	652	2
México	14,754	-	-	9,083	4,766	905	3
Michoacán	13,384	4,000	-	3,371	5,587	426	2
Morelos	2,021	-	-	391	1,381	249	5
Nayarit	6,445	1,996	-	2,429	1,854	166	2
Nuevo León	7,290	27	6	2,699	3,811	747	1
Oaxaca	21,262	2,435	-	12,948	5,742	137	3
Puebla	9,533	154	-	4,375	4,776	228	1
Querétaro	3,285	-	-	1,512	1,617	156	1
Quintana Roo	5,406	-	-	2,788	2,345	273	1
San Luis Potosí	11,519	-	104	6,576	4,484	355	1

State	Total roadextension	Enhanced rural road	Roadbed	Coatedroads	Two-lanehighway	Four-lanehighway	Group
Sinaloa	16,873	5,560	1,730	5,433	3,501	649	4
Sonora	23,978	13,476	-	4,412	5,281	809	2
Tabasco	8,664	-	550	3,861	4,059	194	1
Tamaulipas	13,803	-	192	9,044	4,288	279	3
Tlaxcala	2,582	-	-	1,187	1,291	104	1
Veracruz	24,563	2,696	2,975	12,377	5,929	586	4
Yucatán	12,337	3,643	-	2,534	5,886	274	2
Zacatecas	11,497	1,345	-	5,831	4,083	238	1

Source: Inventario SCT. 2009

Annex 2. Spending orientation on roads at municipality level in San Luis Potosí, 2008.

Code	Municipalityname	Budget (thousands of euros)	Participationon(municipality Budget)	Per cápitainvestment (euros)	Group
24001	Ahualulco	139.8	6	8	1
24002	Alaquines	67.3	5	9	1
24003	Aquismón	533.0	10	12	2
24004	Armadillo de los Infante	136.8	25	30	2
24005	Cárdenas	93.1	9	5	1
24006	Catorce	42.6	6	5	1
24007	Cedral	232.0	20	14	2
24008	Cerritos	342.3	22	17	2
24009	Cerro de San Pedro	163.9	45	50	3
24010	Ciudad del Maíz	371.3	14	12	2
24011	Ciudad Fernández	263.6	8	6	1
24012	Tancanhuitz	685.2	16	33	2
24013	Ciudad Valles	192.7	2	1	1
24014	Coxcatlán	230.2	7	14	1
24015	Charcas	234.5	17	12	2
24016	Ebano	71.9	3	2	1
24017	Guadalcázar	402.6	14	16	2
24018	Huehuetlán	50.4	2	3	1

Code	Municipalityname	Budget (thousands of euros)	Participationon(municipality Budget)	Per cápitainvestment (euros)	Group up
24019	Lagunillas	189.3	13	34	2
24020	Matehuala	908.3	17	11	2
24021	Mexquitic de Carmona	856.0	19	18	2
24022	Moctezuma	389.0	23	21	2
24023	Rayón	468.3	31	32	3
24024	Rioverde	977.0	14	11	2
24025	Salinas	164.7	8	6	1
24026	San Antonio	1,232.2	45	133	4
24027	San Ciro de Acosta	17.3	2	2	1
24028	San Luis Potosí	223.1	1	0	1
24029	San Martín Chalchicuautla	2,157.3	51	100	4
24030	San Nicolás Tolentino	128.8	18	23	2
24031	Santa Catarina	240.5	11	22	2
24032	Santa María del Río	1,288.6	35	35	3
24033	Santo Domingo	229.0	16	20	2
24034	San Vicente Tancuayalab	1,141.3	42	85	4
24035	Soledad de Graciano Sánchez	153.0	2	1	1
24036	Tamasopo	113.9	5	4	1
24037	Tamazunchale	6,091.7	48	65	5
24038	Tampacán	331.5	17	21	2
24039	Tampamolón Corona	623.8	32	45	3
24040	Tamuín	30.0	1	1	1
24041	Tanlajás	283.7	14	15	2
24042	Tanquián de Escobedo	4.1	0	0	1
24043	Tierra Nueva	44.9	3	5	1
24044	Vanegas	102.3	13	14	2
24045	Venado	152.9	14	11	2
24046	Villa de Arriaga	130.5	13	9	2
24047	Villa de Guadalupe	180.0	17	19	2
24048	Villa de la Paz	173.8	41	35	3
24049	Villa de Ramos	337.7	9	10	1
24050	Villa de Reyes	263.5	8	6	1

Code	Municipalityname	Budget (thousands of euros)	Participationon(municipality Budget)	Per cápitainvestment (euros)	Grop up
24051	Villa Hidalgo	148.3	16	11	2
24052	Villa Juárez	217.3	22	22	2
24053	Axtla de Terrazas	579.4	12	18	2
24054	Xilitla	1,798.1	25	36	3
24055	Zaragoza	299.9	12	13	2
24056	Villa de Arista	274.9	14	20	2
24057	Matlapa	397.5	15	13	2
24058	El Naranjo	317.5	29	17	2

Nota: Current Exchange at December, 31 2008: 19.56 Pesos per Euro.