

La depredación minera de los recursos naturales en el estado de Zacatecas, 2010-2018

Mining predation of natural resources in the State of Zacatecas, 2010-2018

ROBLES-SOTO, Saúl*†, AGUILAR-TORRES, Claudia Esther del Rosario, JIMÉNEZ-DÍAZ, Rigoberto and ORTIZ-ROMERO, Luis Humberto

Unidad Académica de Economía de la Universidad Autónoma de Zacatecas, México. Dirección: Avenida Preparatoria S/N, Colonia Hidráulica, Zacatecas, México, CP. 98068

ID 1st Author: *Saúl, Robles-Soto*

ID 1st Coauthor: *Claudia Esther del Rosario, Aguilar-Torres*

ID 2nd Coauthor: *Rigoberto, Jiménez-Díaz*

ID 3rd Coauthor: *Luis Humberto, Ortiz-Romero*

Received January 7, 2018; Accepted June 15, 2018

Resumen

Cuatro Docentes-Investigadores de la Unidad Académica de Economía nos hemos dado a la tarea de investigar los inconvenientes continuos que ocasionan en el medio ambiente las grandes empresas mineras en México y particularmente en el estado de Zacatecas. El objetivo del estudio es relacionar los costos-beneficios que desembolsan las mineras tanto extranjeras como nacionales que obtienen cifras impresionantes en cuanto a los ingresos que reciben y que no se corresponde con los impactos económicos que obtienen los pobladores asentados cerca de las empresas mineras. La hipótesis central gira en torno a lo siguiente: las empresas mineras de capital extranjero y nacional han ocasionado graves daños a la población asentada por años en lugares específicos, sin que se tengan medidas correctivas para ello. Se desarrolla una metodología basada en información oficial que al contrastarla con la realidad nos proporcionan elementos valiosos de análisis para proponer alternativas de solución a la problemática minera planteada desde hace tiempo por diversos agentes económicos. La contribución pueden ser alternativas de solución a una problemática que viven de manera cotidiana los habitantes de las zonas mineras en el estado de Zacatecas desde hace 18 años y requieren de inmediato ser atendidos.

Minería, México, Zacatecas, Empresas

Abstract

Four research faculty Academic Economics Unit have given us the task of investigating the ongoing problems that cause environmental large mining companies in Mexico and particularly in the state of Zacatecas. The aim of the study is to relate the cost-benefit disbursing both foreign and domestic mining companies get impressive numbers in terms of the income received and does not correspond to the economic impacts that get the people seated near mining companies. The central hypothesis revolves around the following: mining companies foreign and domestic capital have caused serious damage to the population living for years in specific places, without corrective measures are taken to do so. A methodology based on official information by contrasting it with reality provide us with valuable elements of analysis to propose alternative solutions to the mining issues raised long ago by various economic agents develops. The contribution may be alternative solutions to a problem living on a daily basis the inhabitants of mining areas in the state of Zacatecas for 18 years and require immediately be addressed.

Mining, Mexico, Zacatecas, Companies

Citation: ROBLES-SOTO, Saúl, AGUILAR-TORRES, Claudia Esther del Rosario, JIMÉNEZ-DÍAZ, Rigoberto and ORTIZ-ROMERO, Luis Humberto. La depredación minera de los recursos naturales en el estado de Zacatecas, 2010-2018. RINOE Journal- International Economy. 2018.2-3:30-38.

* Correspondence to Author (email: saul.robles@ymail.com)

† Researcher contributing first author.

Introduction

In Mexico they have developed over the last 18 years, mining projects mainly from foreign capital, but we must also say that it has a national capital from the richest men in the Mexican country.¹ These mining projects undertaken in large works have affected greatly the interests of the population living in places that once had some protection from government authorities.

However from 2000, with the indiscriminate opening to large mining companies, the adverse effects of the natives have been greatly affected. This paper presents important elements for the analysis of experts in the field, which include economists, environmentalists, engineers, politicians and other society in general, with a very defined purpose must be the protection of areas that are critical to survival in the country.

Recent examples of the involvement of an industry that has been supported by very large extent by government authorities, bypassing the members of the communities where mines are constantly installed will be highlighted. It should be noted that work is a direct investigation of significant issues in the state of Zacatecas, which has been affected as an entity by the mass arrival of foreign and domestic mining companies mostly seek economic gain rather than social benefit.

While the case is zacatecana entity, this does not prevent display relevant aspects of other states are also affected by the arrival of large mining. The development work is done as follows:

1. Historical aspects of mining in Mexico and Zacatecas.
2. Reality of mining in Zacatecas.
3. Biosphere Reserve in the state of Zacatecas 2016.
4. The loss of territory held by mining companies.
5. Conclusions

Hoping that this work will be useful for operators involved in the issue, seeking to reverse as far as possible the reality that exists in Mexico and Zacatecas with the mining industry in the last 18 years, there remains for us to continue to insist that mining can be beneficial not only for a very small segment of society, but can coexist without affecting the interests rooted in a population heroically resisting the mass arrival of deep-water mining companies.

Historical aspects of mining in Mexico and Zacatecas

The most important discovery of veins of silver in New Spain was in 1546, when Juan de Tolosa and his group reached the foothills of the Bufo, territory inhabited by the zacatecos. In the year 1550, Vazquez de Mercado takes possession of zacatecano northwest, finding rich veneros in Ranchos, Chalchihuites, San Martin, Sombrete and Avino. Subsequently these settlers Francisco de Ibarra is integrated.

Obtained during the years indicated large amounts of pure silver, employing a complex and expensive production process. To extract the mineral, and classify test it, washing, grinding, benefit by fusion or amalgam with mercury, requiring huge investments in shafts and tunnels, grinding mills and foundries.

So Zacatecas mining techniques needed large investments and processes for the production side, which prompted her to be the most important activity of the time.

The last decade of the eighteenth century had great shortage of capital, which larger sums of money added to explode the mines at greater depths with traditional methods began to undermine mining state of Zacatecas.

Until this period had it exploded mines based on individual ownership, but the lack of capital and higher investments required mining, opted for an innovative organizational structure: the form investment companies where participating partners through buy shares.

¹As it is the case of Carlos Slim, the richest sixth in the world (2018).

This new organizational form brought about substantial changes in the mining activity zacatecana region, the main enormous concentration in few hands of the means of production in a mainly Spanish very small mining group, and the great weakening of small native miners Zacatecas, which were eminently Creoles. This fact helps explain the constant and growing discontent of the Creoles who will be actively involved in favor of independence.

Mining has continued to date with the modality that large projects are now in few hands, excelling as already known in the year 2018, mainly Canadian foreign capital.²

Mining in Mexico and Zacatecas has been very important, in 2018, represents the fifth largest foreign exchange earner for the country, second only to the automotive, electrical, oil and tourism.

Mexico remains a leader in silver production and within the ranking of the top 10 producers of 18 kinds of metals, also 70% of the land area has some degree of geological development with great potential, which makes it very attractive for large mining companies.

The case of the state of Zacatecas is very similar to Mexico in their mining potential, in addition to remain the main silver products in the country.

Reality of mining in Zacatecas

According to data from INEGI, 2018, production lead, sulfur, silver, copper and coke in the state of Zacatecas it decreased compared to the year 2017 (data of February 2018). However, increased production of gypsum, non-coking coal, gold, zinc, fluorite and iron pellets, for the same period as indicated above lines.

Regarding silver, the decrease for this year 2018 was 5.5 percent, and that for the month of February 2017, production was 181 000 838 kilograms, while for February 2018, production was 171 903 thousand kilograms. We must emphasize that despite this annual decline of silver, Zacatecas state continues placing as the first producer of silver in the country.

With regard to gold production, this was one ton 721 kilograms in February 2017 and the same month, but the year 2018, production increased to one ton 859 kilograms, an increase of 2.4% over one year to another. Produce one gram of gold requires 380 liters of water, 850 grams of cyanide and electricity consumed by a household in a week and dynamiting and extract up to four tons of rocks.

Gold production for the state of Zacatecas is located in the second national place, only surpassed by the state of Sonora. Production of lead, Zacatecas is still placing in the first place nationally with an increase of 3.4 percent in February 2018 compared to the same month of 2017. went from producing 11 thousand 660 kilograms up to 12 thousand 069 kilograms.

For the case of copper was an increase of 6.6 percent in 2018 compared to the year 2017 in February, keeping the company zacatecana this second nationally. The salary you get the mining sector in the state of Zacatecas between the highest in the country, only surpassed in April 2018 by the state of Durango.³

In its annual comparison, the average salary in the sector in Durango is 204 thousand 140 pesos, equivalent to about 567 pesos per day, while in Zacatecas was 199,000 90 pesos per year, ie about 553 pesos per day .

This data is very representative, since the salary of miners in the state is 50% higher than the average of workers affiliated to the IMSS, which get an average salary of 234 pesos a day in the month of April 2018.

Based on indicators of the LEA, for the April 23, 2018, in the mining sector in the state of Zacatecas it had a total of 14 thousand 485 workers insured by the IMSS.

Making a compendium regarding the number of workers in the mining industry located in the state of Zacatecas and multiplying by the average salary received by these workers, give us a grand total of 8'010,205 pesos a day paid by mining companies (we do note that they are not considered the benefits via benefits by law and according to their unions get the miners each year).

²Especially with the Goldcorp mining.

³INEGI, Economic Census, 2018, Mexico.

If we multiply this number by day they receive on average miners in the state of Zacatecas, will give an annual amount of 2,883'673,800 pesos. By converting the previous dollar amount at the rate of 18 pesos per dollar, the figure will become 160'204,100 dollars.

If we compare the last dollar amount paid by the mining companies pay their workers, give us a huge disproportion, 4,210 million dollars is the profit accruing to mining in the state of Zacatecas per year, which when converted into pesos at a parity of 18 pesos per dollar provide us 75'780,000,000 million pesos.

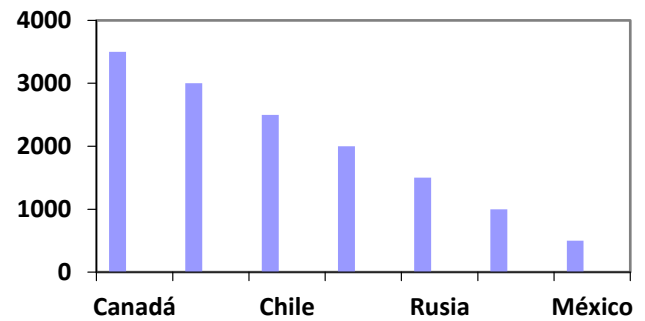
Discounting the workers' wages to revenue earned by large mining companies, the result is highly contrasting, pay only 2,883'673,800 pesos a year and receive 75,780'000,000 million pesos, leaving a number of 72,896'326,200 million pesos year.

Needless to say, the latter figure would detract from taxes and other annual costs with large mining companies, although we must say that would not change much.

As an example, we have the mining tax that was intended to collect in the state of Zacatecas and was denied by the federation at the latter's president EPN he was pressured by mining corporations both foreign and domestic, the amount for the state of this tax only amounted to 1,400 million pesos, a pinch if contrasted with the enormous benefits they get. The following note appeared in the newspaper La Jornada Saturday dated February 25, 2017, p. 14 corroborates this:

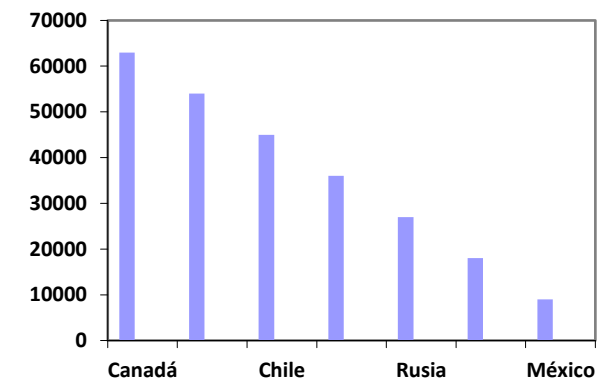
The Supreme Court of Justice (SCJ) agreed to hear a constitutional challenge presented by the Legal Counsel of the Federal Executive Branch against environmental assessment (known as environmental tax) approved in fiscal miscellany of Zacatecas, with which that entity seeks get a thousand 230 million pesos for penalties or taxes on mining, water and waste tank on the ground. It has not disclosed which of the 11 ministers shall prepare the case study.

Returning to the salary of miners in Mexico remain among the lowest in the world, compared to the five countries with mining guidance we realize this:



Graphic 1 wages in the mining industry in dollars per month in 7 countries
 Source: Prepared with data World Bank, Doing Business 2018.

While the 7 countries, Canada pays the highest salaries to their miners, Brazil pays \$ 3,000 a month, Chile 2,500 2,000 South Africa, Russia 1,500, China 1,000 and Mexico only \$ 500 per month. If we make a conversion to Mexican pesos (with a parity of 18 per dollar), the data remains very representative and are shown in graph No. 2.



Graphic 2 wages paid in the mining industry in pesos per month in 7 countries
 Source: Prepared with data World Bank, Doing Business 2018

The following data indicate heterogeneity will wage in seven miners 2018, referred to the Mexican economic system states. Immediately it highlights that there are states that receive higher salaries than others, despite performing the same mining activities, perhaps due to the relationship of unions with business.

State	Salary per year	Daily wage
Durango	214,140.00	594.00
Zacatecas	209,090.00	580.00
Chihuahua	188,880.00	524.00
Sonora	150,050.00	416.00
Coahuila	127,270.00	353.00
San Luis Potosi	122,220.00	339.00
Michoacán	110,100.00	305.00

Table 1 salary per year and per day in pesos 5 mining states of Mexico, 2016

Source: LEA with data from INEGI, STPS, SIAM, 2017

According to the latest information about wage to the working class mining in Mexico increases, based on the existence of two unions recognized by the authorities in the industry, one sits at home and obtained increases do not exceed 4% , the other based in Canada has obtained increases to wages of miners in the order of 16% on average, a situation that is still not remedied in the mining sector under the approval of large mining companies and the federal government.

All of the above can be released unmistakably the pediment that made the former governor of the state of Zacatecas, Miguel Alonso Reyes during 2016 to visit the parent company Goldcorp in Canada to apply for a grant to equip the band state , he requested one million pesos and will gladly extended the corresponding check, a pittance compared to the huge profits earned by the company in 2016. That size is the management of our state authorities. It also has year after year an allocation of financial resources granted by the federation called mining tax charges at the federal level.

Is granted on average annually to the state of Zacatecas the amount of 420 million pesos, to make the corresponding relationship between what is delivered via taxes and benefits that are seen every year by large mining companies you have the ratio is just 0.567%, ie a very insignificant amount. The most serious aspect of the matter is that government authorities at all three levels of government and major mining leaders say the derisory amount invested in social infrastructure boast. Ranging from domos for schools to laboratories for higher education institutions in the state of Zacatecas.

As can be inferred from the above, the relative benefits of mining with respect to the benefit to society is very unequal, which proves irrefutably that benefits a segment of the extremely small population and the bulk of those earnings it stays in Mexico, except in Zacatecas. Participation in national GDP make mining not lose importance in Mexico, the social benefits of mining are located in 24 of the 32 states of the Republic where there is mining thanks to the rich mining potential of Mexico, this allows it to be one of the main destinations for investment in mineral exploration in America

Biosphere Reserve in the state of Zacatecas 2016

Since last September 2016, with the inauguration of the new governor of Zacatecas, Alejandro Tello, has handled a problem between the federation and the zacatecana entity, which since 2014 through SEMARNAT⁴The Federal Attorney General for Environmental Protection and the National Forest and National Commissions of Natural Protected Areas have tried unsuccessfully to protect a considerable amount of viable for mining in northern Zacatecas state lands.

Victor Armas, a former state leader of the PVEM⁵ and appointed secretary of Water and Environment by the PRI governor Alejandro Tello Cristerna, reported that the Committee on Mining Investment Chamber of Commerce of Canada ruled against the draft declaration of Biosphere Reserve issued in 2014 ..

Weapons, whom the Supreme Audit disabled in 2010 for three years to hold public office because of alleged mismanagement in their management for the state government of Amalia Garcia Medina (2004-2010), is opposed to declaring reserve biosphere an area of 2 million 577 thousand hectares, representing 40 percent of the territory of the entity.

He argued that this designation would mean legal uncertainty for Canadian mining investments in Zacatecas.

⁴Secretariat of Environment and Natural Resources

⁵By profession a degree in law, without any knowledge about the environment in the state of Zacatecas

Said in an interview that through the efforts of state administration has already stopped the possible declaration that he would cast the Semarnat, and he personally communicated with Michael Harvey, chairman of Minera Canada Investment to inform employers that country should not worry, it will not affect the Zacatecas mining industry.

Likewise, Semarnat considered impossible become intends biosphere reserve such a large area of the entity, which would be higher than in the states of Tabasco, Tlaxcala and Colima. He added that reducing the proposed 2017 expenditures, resources many federal agencies will be reduced, and then, how will finance the care of 2 million and a half hectares? An army would be required!

That size is the protection of the biosphere by the official Armas, which incidentally has a specialty degree in law, without knowing at all the environment of the state of Zacatecas. It is found clearly that the state government officials together with Governor Alejandro Tello are serving large mining companies and not for the protection of zacatecano territory, affecting state resources that have a direct impact on the population.

Significant cases that have drawn attention to what we described above in the present International Conference on extractive mining, natural resources and territorial disputes, held during 7-10 May 2018, UAEUAZ,⁶ Mexico.

Lost in the hands of territory mining companies

The considerable loss of Mexican territory because of mining concessions is alarming in the past 24 years, highlighting the presidency of Felipe Calderon Hinojosa for the sake of modernity and globality opened the doors indiscriminately mining companies during the period 2006-2012.

Then count the last four presidential administrations in Mexico have granted concessions to mining companies is carried out.

⁶Academic Unit of Economics at the Autonomous University of Zacatecas, Mexico.

⁷Minera Integral Management System, 2016

⁸From Plutarco Elias Calles, to Gustavo Diaz Ordaz (1928-1970)

Concessions granted by the federal government several presidential administrations for mining in Mexico

Within the federal administration headed by presidents Ernesto Zedillo (1994-2000), Vicente Fox (2000-2006), Felipe Calderon (2006-2012) and Enrique Peña (2012-2018), they have been awarded grants to 27 thousand 204 companies mining. This is equivalent to 24 years of prianista administration, 1133.5 concessions made on average per year domestic and foreign capital to exploit territories of various kinds in 24 states.

The result of these concessions granted to mining capital in Mexico is equivalent in terms of hectares to more than 36 million. A truly impressive figure in the country. With regard to the concessions granted, whose registration has the Siam,⁷PAN governments far outweigh the rest of the PRI administrations emerged: Plutarco Elias Calles awarded five concessions; Pascual Ortiz Rubio, 3; Lazaro Cardenas, 10; Manuel Avila Camacho, 22; Miguel Aleman Valdes, 15; Adolfo Ruiz Cortines, 25; Lopez Mateos, 75; Gustavo Diaz Ordaz, 175. End of the nationalist period in Mexico.

Luis Echeverría, 222; Jose Lopez Portillo, 151 thousand; Miguel de la Madrid Hurtado, 985; Carlos Salinas de Gortari, 2 000 531; Ernesto Zedillo Ponce de León, 2 000 245; Vicente Fox Quesada, 11 thousand 721; Felipe Calderon Hinojosa, 11 thousand 817, and 2015, Enrique Peña Nieto, 416 thousand. Table number 2 gives us valuable information about economic models that have been developed in various historical periods of Mexico and the number of concessions granted to mining companies.

Economic model	Number of mining concessions
Nationalist ⁸	330
developmentalist ⁹	1,373
neoliberal ¹⁰	32,131

Table 2 Economic models in Mexico and number of mining concessions

Source: LEA, with data SIEM, SE, INEGI, various years.

⁹Luis Echeverria Alvarez and Jose Lopez Portillo (1970-1982)

¹⁰From Miguel de la Madrid to Enrique Peña Nieto (1982-2018)

With regard to the volume of hectares granted to mining companies in Mexico in the last 24 years, stands the administration of Felipe Calderon, and Ernesto Zedillo Ponce de León as that granted fewer hectares mining companies.

Sexenios	Number of hectares
Ernesto Zedillo	1'010,000
Vicente Fox	8'099,000
Felipe Calderon	24'073,000
Enrique Peña	3'160,000

Table 3 number of hectares granted to mining companies over the last 24 years in Mexico (1994-2018)

Source: LEA, with data SIEM, SE, INEGI, various years

The information in Table No. 3 says a thousand words, a transfer of land of various types (from ancient hills with historical value for the Indians, to set aside for care in Mexico biosphere areas). Historical figures that do not exist anywhere in the world, in 24 years have given 36'342,000 s hectares granted to mining companies in Mexico, a ratio of 1'514,250 hectares each year and most alarming is that not just PRI six years, surely the figure will grow bigger in the coming months.

Volume, Felipe Calderon gave concesionadas 24 million 73 thousand hectares; Vicente Fox authorized 8,000,000 99,000, followed by Enrique Peña Nieto, with 2 million 565 thousand, Ernesto Zedillo one million 10 thousand hectares.

All of the above entails a serious social problem by giving huge amounts of communal land to domestic and foreign private entrepreneurs without considering the consequences. With this irresponsible cast, especially Felipe Calderon, it ended up strengthening organized crime.

While it is true that mining resources are not the only ones who manage offenders, they do constitute an important part allowing the support of the logistics of these criminal gangs. Besides this, the lack of recognition of legal personality of indigenous peoples has created a vacuum, and this in many places has been occupied by criminal gangs, such as Michoacan, Guerrero, Chihuahua, Colima, Coahuila and Sinaloa, among other states.

Making a comparison summarily have to Lazaro Cardenas gave 18 million hectares to farmers in Mexico, which boosted agricultural productivity and social stability; meanwhile, Felipe Calderon delivered 24 million hectares via mining concessions.

Mining, being an economic activity has now become a matter of national security that should be reviewed by all institutions of the Republic, before situations of greater conflict and violence already suffering many indigenous peoples and ejidos generated in our country.

It is what we call in the present work continuous destruction of natural resources in the state of Zacatecas, 2010-2018, this is not only greatly affect the interests of society as a whole but degrades day day Mexican population tissue such concessions the worst granting huge tracts of land to mining companies.

These concessions have allowed since 1994, a production of 89 thousand tons kilograms of gold, which places the country as the leading gold producers in the world.

However, not only gold is extracted, but also large amounts of silver, lead, copper and iron. In the case of gold, extraction referred is very close to that recorded in the 300 years that the viceregal spread (183 tons); Independence stage and restored Republic (84 tons); porfiriato (531 tons); post revolution until salinista neoliberalism (350 tons). In almost 480 years, the volume of gold mined totaled 148 thousand tons.

Metals, exponential growth

Silver extraction recorded throughout history exponential growth. In the Viceroyalty 53 thousand 496 tons were mined; post stage of independence, 22 000 708; porfiriato, 48 000 305; postrevolutionary stage 60 000 1994 927. And last year, 74 thousand 784 tons. These numbers add up to 260 thousand 222 tons.

Mexican Revolution of 1993, the volume reached 5 million 432 thousand 288. In the past 25 years, 3 million 626 thousand 472, making a historic volume of 10 million 721 thousand 982 tons.

Copper mining also provided significant figures as follows: at the time of Porfirio Diaz, were extracted 633 000 438 tonnes; in the post revolution, production reached 4,000,000 407,000 526, and the administration of Ernesto Zedillo to the sum current record 7,000,000 833,000 204, totaling 12 million 874 000 268 tons.

Conclusions

290 miners in Mexico, 211 are Canadian companies; nobody is responsible for the damage they cause.

The list of health problems that causes this activity to residents and workers is long: hearing, respiratory diseases and some types of skin cancer.

They are worse when the wastes pollute rivers, very low wage levels.

Specialists in the field have years noting that in Mexico, the authorities put before the interests of mining on the welfare of the population.

Until July 2016, Mexico had granted 25 thousand 178 titles of existing mining concessions in 22 million hectares.; that extension covers the states of Veracruz, Quintana Roo, Campeche, Aguascalientes and Cd. De Mexico.

Mining in Mexico and Zacatecas is the most harmful to the environment, health and human rights, however, companies in this sector operate with the support of various government agencies.

Cause damage to health even promotes various cancers, respiratory diseases, lung by the dust generation, hearing the noise conditions that cause explosive and of course, death from accidents and negligence.

Cyanide for example, to extract minerals pollutes large scale and lands lose fertility.

Social impacts arising in mining areas focus on displacement by different ways, shifting populations and causes constant migration and conflicts even carries internal conflicts and community divisions between opposing mining and that They support them.

Most opponents are indigenous and poor communities.

The Ministry of Economy is the first granting the concession, regulates and promotes mining and enrolls signatures in a register of mining companies and companies with FDI.

Until July 2016, in Mexico there were 25 thousand 178 titles of existing mining concessions in more than 24 million hectares. The concession is for 50 years with possibilities to extend them 50 more, ie 100 years.

References

Banco Mundial, Doing Business 2015.

Burnes A., y Padilla J., *Zacatecas Hoy, nueve ensayos sobre economía y sociedad*, capítulos de Saúl Robles *Empresas en el estado de Zacatecas, importancia de las mipymes 1998-2010*, y Arturo Burnes, *La minería zacatecana ante los retos de un desarrollo regional con equidad, 1970-2010*, Ed. UAZ, 2014, México.

Darcy Tetreault, *Los mecanismos del imperialismo canadiense en el sector minero de América Latina*, artículo del texto Estudios críticos del desarrollo, Volumen III, número 4, primer semestre del 2013, Ed. UAZ, UAED, 2013, México.

GeoComunes, 2017.

IMSS, 2018, México.

INEGI, 2018, México.

Laboratorio de Economía Aplicada (LEA) UAEUAZ, 2018, México.

Mineriaenlinea, 2013, México.

NTR, periódico zacatecano, 1 de mayo del 18, México.

Periódico La Jornada, Alfredo Valadez Rodríguez, miércoles 2 de noviembre de 2016, p. 12.

Periódico La Jornada con fecha del sábado 25 de febrero de 2017.

Periódico La Jornada, Alfredo Valadez Rodríguez, 28 de agosto del 2017, p. 25.

Periódico La Jornada, Roberto Garduño, Lunes
14 de marzo de 2016, p. 6.
Mineriaenlinea, 2013, México
NTR, periódico zacatecano, 1 de mayo del 18,
México

Robles S., *Alcances y limitaciones del
Neoliberalismo en México y Zacatecas 2000-
2014*, Ed. Uaz, 2015, México.

Secretaría de Economía, varios años, 2018,
México.

Sistema Integral de Administración Minera
(Siam), dependiente de la Secretaría de
Economía (SE), 2016, México.

[www.sinembargo, mx/15-04-2018./3404994](http://www.sinembargo.mx/15-04-2018./3404994)