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Chapter 4 Maize and Indigenous Communities of Oaxaca:  
Two Victims of Neoliberalism

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### **Poverty, Development, and Globalization**

Since the early 1980s, we have witnessed a massive exodus of both rural and indigenous populations from the Mexican countryside to urban centers and to the United States. Remittances from abroad by 2006 exceeded \$23.054,0 million dollars, according to Banco de México, ranking second in foreign currency earnings only to oil revenues. Paradoxically, the depopulation and impoverishment of the Mexican countryside has occurred in a context of government policy that has financed and implemented important programs aimed to modernize Mexico's agricultural sector, in order to make it efficient and competitive in global markets. At the same time, other social programs are supposed to improve the living conditions of vulnerable farmers, especially those in indigenous communities. However, migration and rural poverty continue and the situation does not appear to be changing in the short term.

How do we to explain this apparent contradiction? It is clear that if indigenous farmers are leaving their homes because something is not working well: Is this due to the incapacity of the indigenous communities to adapt and to take control of the modernization processes? Is it a product of an erroneous public policy or perhaps the result of a deliberate one? Or is it due to some combination of these variables? While we

are speaking of complex social processes whose diversity resist a single explanation, I would argue that these processes can be comprehended if we focus on structural causes, and these are rooted in neoliberal policies, and specifically in The North American Free Trade Agreement (NAFTA). Since the early 1980s, Mexico's economic and social policies have been shaped by neoliberal doctrines and financial guidelines of institutions like the World Bank and the International Monetary Fund (IMF). Their application in Mexico, and the state of Oaxaca, has led to an increase of the poverty, marginalization, and rural out migration. Since the signing of NAFTA in 1994, which coincided with the indigenous revolt of the Zapatista Army of National Liberation (EZLN) in Chiapas, the Mexican state has worked to create the condition necessary to fulfill the objectives of NAFTA, which in the agricultural sector consists of putting into place a sustained strategy based on four central propositions of neoliberalism:

- a) Form profitable farms in areas held by smallholders.
- b) Privatize ejidos allowing rent, sell, lease lands, and to form partnerships with industrial farmers.
- c) Switch from subsistence to marketable crops.
- d) Encourage decentralization to facilitates projects and provide services and subsidies to productive sectors, while ignoring poverty. [2]

This strategy rests on progressive cuts in public investment in the rural sector, so as to create social conditions needed for external capital to enter. It also rests on creating the legal frameworks needed to guarantee free access to the natural resources held by ejidos and by village communal lands, and creating infrastructure that facilitates the

circulation of goods and services. This task has been done well, as some facts illustrate:

As Roberto Garduño and Ciro Pérez, 2002.state:

In the last 20 years a fall both in brute public expenditures and in the private credit extended to the agricultural sector has occurred. Present expenditures are barely 24 percents of those of 1980... This process has not been a simple fall in the total magnitude of credit and public cost, but one felt differentially by type of cultivated crop, affecting small producers (native-farmers, forest-farmer and fishing artisan) much more than commercial ones oriented toward production for export'. After 1980, public expenditures on this sector reached 35 billion pesos, of a total investment of 39 billion... In 2000, public resources had shrunk to 9 billion, and even if one adds total credit, total investment was only some 19 billion pesos. In any case, beginning with agreements with the international bank, above all with the letter of intent before the IMF, in 1985 the government initiated a process of reduction in price guarantees to producers. The process was accelerated as markets opened, even before NAFTA took affect. [3]

The reduction of support for agricultural sector is the result of deliberate policies, and rural poverty has increased as a consequence. The cuts to public expenditures that had previously enabled small holder production were a deliberate decision to discourage small producers and drive them out of agriculture. The general strategy was to make their efforts unprofitable by denying them access to credit and by diminishing infrastructural investment, and by practically abandoning technical training and extension programs. As a result, over the last 30 years Mexico has lost self-sufficiency in production of maize, sugar cane, cotton and timber products, among others; all of which are in great demand and needed in large quantities. The sole beneficiaries are a handful of multinational

companies with whom Mexican state has worked in the last decades, culminating in the signing of NAFTA, which demolished its protectionist tendencies, and opened the doors to the total liberalization of commerce and foreign investment in all areas of economic life within Mexico.

The drastic fall in prices of an array of once profitable agricultural commodities is due to pressure from the multinational chains on the one hand, and the non-support of agricultural capacity by Mexican authorities on the other. So much so that it is valid to ask ourselves if the discourse of free trade is not simply another way to extract everything from small producers. Such policies have changed the beneficiaries of Mexican agricultural production to multi-nationals that are progressively replacing both the caciques (political bosses) and middlemen who once held power and controlled commodities produced by peasants and smallholders. This is the case with coffee, rubber, henequen (agave), fruit trees, vegetables, grains, forage, etc., all of which are an important part of indigenous and peasant livelihoods. The new masters, the multinational companies, purchase raw materials at ever lower prices, and return modern canned and packaged foods, synthetic fibers and plastic goods that replace the production of traditional craft products. To this they add the sale of agrochemical products, whose high levels of use in the indigenous regions began in the seventies [5].

The decline or disappearance of important areas of production from the economy of indigenous producers represents, not just a true dismantling of the economic base of their communities and ejidos, but as local food consumption has been progressively replaced by industrially produced foods, widely promoted by the mass media in ways that make them appear synonymous with modernization and progress, has also clearly altered

their nutrition and health.

If we examine existing deficiencies in education, nutrition and health found the countryside; we find a rural panorama dominated by abandoned fields and phantasmagoric towns inhabited by the elderly and by women and children whose only hope is the shipment of money from their relatives abroad. [6]

According to Astorga Lira, neoliberalism's success rests

"on the ability ... to convince peasants to relinquish their land. The only way this can be accomplished is by impoverishing the rural populace, because otherwise they would be unwilling to sell their land... [And] Unless peasant producers sell their land, the model simply will not work. This is the reason why governmental subsidies supporting small producers were practically eliminated,... force them into debt, and why hunger subsidies have been created; at the same time easy lines of credit have been made available to agribusinesses who want to buy or rent land. The new neo-liberal institutional forms are part of an orchestrated plot to modernize agriculture farming, but, without the farmers." [7]

Among the most severe impacts of this process has been the fracturing of the historical pillar of peasant reproduction--maize, by the rural policies implemented since 1995 that have caused its cultivation to stagnate in spite of its great national relevance [8].

## **1. Mexican maize and NAFTA**

According to the agricultural section of NAFTA, Mexico must open its maize

market to free competition by progressively reducing import tariff quotas, which simply means that Mexico must improve its production efficiency if it is to compete with external supply. Nevertheless, judging by what has occurred the real goal seems to have been something else. For at least two decades, even before NAFTA, production has seriously declined whether measured in production, land area cultivated, or in falling consumption.

A key sign to the withdrawal of official support for maize production is significant reduction in credit granted by Banrural for its cultivation. According to Astorga Lira (1997)

“while [the] proportion of maize producers in Banrural investments grew from 23 to 42 percent, loans ... fell from 3 billion new pesos in 1980 to 1.5 billion new pesos in 1994. The reduction in credit availability was even more pronounced for maize producers who depend on seasonal rains than it was for those with irrigation systems" [7].

We can add that seasonal producers have been totally excluded from credit since 1994. Production has shrunk due to the adverse relationship between the steadily rising production cost and falling market prices. According to constant prices in 1994, in 1975 one metric ton of maize fetched a price of \$1,232 pesos; in 1997 it was already only \$571.40. Just between 1990 and 1994, the price fell by 40 percent. We are speaking about an impact on 2.7 million producers that depend directly on maize cultivation. But this is not something fortuitous, or caused by "the free market" in abstract [10], since within the agricultural agreements of NAFTA, maize was made a commercial prerogative of the

United States, following the argument that the United States has greater technological and productive capacity, and must defend and protect its agricultural industry.

And it is here, then, where we encounter the reason for the national policy of reducing its investment in corn, and, in general, preventing the development of solid national agriculture: the objective all along has been to favor importation of maize from the United States. Under NAFTA's provisions no distinction may be made between local companies and foreign producers, practically guarantees considering the notable difference existing between both countries. Subsidies and support of their respective producers guarantees that competition will favor the interests of the North American agricultural industry.

Table 1) Importation of Maize: 1985-1997

Año	Importaciones totales (ton métricas)	Por Conasupo (%)	Por importadores privados (%)
1985	2,223,500	73	27
1986	1,703,500	71	29
1987	3,602,900	59	41
1988	3,302,600	70	30
1989	3,648,700	55	45
1990	4,102,800	46	54
1991	1,421,700	3	97
1992	1,313,700	2	98
1993	208,600	36	64
1994	1,717,000	0	100
1995	2,400,000	0	100
1996	5,900,000	28	72
1997 <sup>a</sup>	4,716,000		
1997 <sup>b</sup>	1,294,103		
1997 <sup>c</sup>	3,071,237		

<sup>a</sup>Importaciones aprobadas para 1997.

Fuente: Consejo Nacional Agropecuario, Conasupo; ANEC.

<sup>b</sup>Importaciones efectivas durante el primer semestre.

<sup>c</sup>Importaciones totales probables para 1997 estimadas por la ANEC.

Maize importations with some off years grew between 1985 to 1997, based on 1985 baseline data. It is significant to emphasize the growth of private maize importers

are filling the space left behind in the market by the policy of reducing the state's role that was pushed hard by president Salinas de Gortari, the promoter of NAFTA.

Among other things these data mean is that the nation's food supply, a matter of strategic importance, is being left more and more to the private sector, specifically to multinationals since market tendencies favor the gradual concentration of the importation and distribution of maize into the hands of a few large partnerships that already control to large extent the food industry in Mexico. The biggest beneficiaries are without a doubt North American companies that are taking advantage of NAFTA's provisions and have flooded Mexico with cheap maize, as the following data illustrate:

In the first year of the NAFTA, 2.5 metric tons of maize was imported without tariff payments from the U.S.A. to Mexico. Under NAFTA, Mexico was to expand its import quota of duty free US maize by 3 percent a year for 15 years. Lowering trade barriers, however, did not last the stipulated time. By 1996, maize imports exceeded the quota by more than 3 million tons and all tariffs were discarded. Every year since its implementation, except 1995, maize exports from the U.S.A. have exceeded the NAFTA quota. Mexico lost more than U.S. \$2 billion in fiscal income between 1994 and 1998 because it did not collect maize tariffs on imports that exceeded the fixed quota. [11]

Trough 2008 the figures show that 751,000 tons. of yellow corn and 49,488 of white where imported from US.

Consequently, it is difficult to see how Mexican maize producers could ever compete with the external supply of maize generated by NAFTA. Mexican growers have seen prices, support and subsidies reduced, while the North American and Canadian producers enjoy both enormous support and increased access to the Mexican market. [12]

One might think that this would affect only commercial producers that send maize to the market; and not those small producers who plant maize solely to meet their own subsistence needs. The truth is that even for subsistence growers production has become uneconomic because of a number of factors including continuously rising costs of production inputs, the small size of their plots, and their location on marginally productive land, as well as the loss of the necessary manual labor for the cultivation because of increasing out migration. These small holders represent 64 percent of the total Mexico's maize producers.

Hubert Carton de Gramont notes that the Mexican government's policy of an open and deregulated economy has polarized the Mexican countryside. Some 15 percent of the producers have the productive capacity to compete within the present economic framework; another 35 percent have productive potential, but depend on support from governmental programs. The remaining 50 percent lack productive potential and the only future for them is to leave the agricultural sector, yet there is no existing or emerging economic national sector that can absorb them. [13] While there are some notable exceptions, this last category contains indigenous maize growers, and, given the absence of effective absorption, their only option has been to abandon their communities and lands, and search for fulfillment as national or international migrants.

Faced with this situation, civil and peasant organizations joined the campaign *El Campo No Aguanta Más*, ("The Countryside Can't Take Anymore") to ask the Fox government to renegotiate NAFTA, demanding that maize be excluded and that imports from the United States cease. Of course, the government has done nothing, except to make declarations to the effect that what was signed is signed.

Some analysts of NAFTA argue that restructuring maize agriculture production gave rise to major migratory flows. A comparison of two surveys conducted on ejidos in 1990 and 1994 reveals that migration reduced the average family size (Gordillo et al., 1994, 3.1). This same source showed that migration in 1990 occurs with higher frequency in individuals between 30 and 45 years of age compared to 1994 when it was greater for the group 20 to 30 years of age. Of the 21 percent for individuals between 20 and 25 years had left 54 percent traveled to the United States. For families with plots of land between 5 and 10 hectares, the percentage going to the US was even higher--64 percent.

To alleviate the crisis generated in the maize sector, (but more for social stability than anything), the Mexican state created programs like PROCAMPO, which provides small subsidies to maize growers based on amount of land planted. To maximize subsidies over the next 15 years, the program encourages growers to put more hectares into production by clearing forests and planting fallowed fields. This has caused severe ecological damage and reduced bio-diversity. PROCAMPO is also designed so that a good part of the money received flows to agrochemical companies, since the program compels the farmers use their products. In every case, PROCAMPO has not restrained migration or diminished poverty. On the other hand, PROCAMPO has generated corruption; many growers did not plant the land they had registered. Moreover, in many cases political criteria are used to distribute subsidies and to manage the program in such a way as to favor PRI's power in the countryside.

Except for assistance from PROCAMPO, there is a notorious absence of programs to promote appropriate technologies to increase productivity and allow small growers to recover self sufficiency, and efforts do not exist to expand the capacities of

peasant growers to benefit from better access to markets established under NAFTA. Apparently, the official political position is to continue supporting maize imports and to distribute imported foods and production technology.

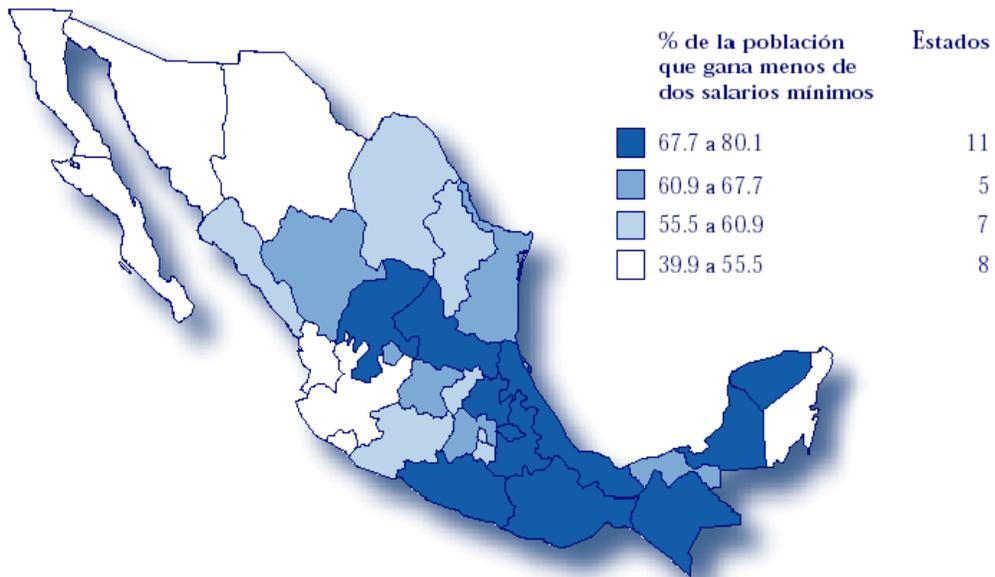
One of the most notable effects of neoliberal recipes, in line with the policies of the IMF, the World Bank and the free trade agreement, is the marked inequality that exists between the urban and rural population as shown in Table 2.

**Table 2 Proportion of the Poor Population in Mexico: 2005**

	Pobreza alimentaria	Pobreza de capacidades	Pobreza de patrimonio	% de población de 15 años o más analfabeta	% de población de 6 a 14 años que no asiste a la escuela	% de población de 15 años y más con educación básica incompleta	% de hogares con población de 15 a 29 años, con algún habitante con menos de 9 años de educación aprobados	% de población sin derecho-habiciencia a servicios de salud
Población 2005								
103,263,388	18.2	24.7	47.0	8.35	5.29	45.98	36.12	49.78

Source: CONEVAL, 2005

With such disparity, especially in the rural areas, where all poverty indicators grown in 8 years, there is little wonder that migratory processes, which once were restricted to certain states and regions, have significantly increased everywhere among indigenous communities and ejidos: it is currently estimated that 4 out of 10 of their inhabitants reside in urban centers [15] [16].



*Fuente: Estimaciones a partir de los datos del XI Censo de Población del INEGI.*

The map above shows that southern states, that concentrate the majority indigenous population, based on maize production for subsistence, and where the main indigenous coffee production areas are located, have the highest rates of lower income, fact that is behind the crescent migration process in rural-indigenous communities and ejidos. For

instance, annually there are about 200,000 Oaxaqueños who migrate to the northern states with about 150,000 of these go to the US as temporary or permanent migrants. Of these about 45 percent are women (Instituto Oaxaqueño de Atención al Migrante, 2006).

Migration and rural poverty have always been present in the history of Mexico, but they have been significantly accentuated in the last few decades as a result of the neoliberal strategy of promoting free markets and reducing the role of the state. In Oaxaca, the state with the greatest cultural and environmental diversity of the country, the effects of these policies have been manifested in an accelerated manner.

## **2 Maize and Neo-liberalism in Oaxaca.**

### **2.1 The State Context**

Demographically Oaxaca is characterized by a low population growth in good part due to strong out migration, where between 1990-2005, 74% percent of state's 570 municipalities presented negative or stagnat growing rates. The state's rural population has diminished to a little more than 53 percent, composed mostly of indigenous farmers, whose primary activities continue to be social reproduction. This means that an extremely high proportion of Oaxaca's population lives in extreme povert:.

39% municipalities have more than 50% of its population in alimentation poverty; 40% with more of 60% percent of population with cappailities poverty and 81% of municipalities with 81% of its population with patrimonial poverty. (With CONEVAL 2005 data)

### **2.2 The indigenous systems of production in Oaxaca [18]**

Oaxaca's indigenous agricultural systems display similar technological characteristics: the use of ancestral seeds, growing other crops with maize in the same milpas (fields), the use of manual tools, dependence on family labor, the use of traditional measures of land and volume, and an equivalent agricultural vocabulary, in many cases, the observation of the lunar calendar to establish days of sowing and harvest, and the accomplishment of ceremonies and rituals to propitiate fertility. The differences among their systems of production reflect differences in soils and specific climates that determine variations in their agricultural calendars, the types of seeds of maize and kinds of plants inter-cropped; frequency of weeding; the level of yields and the time land is fallowed. Where feasible plots of "tonamil" (a type of corn) are grown to take advantage of residual humidity or water flows to obtain a second annual harvest. Economic factors determine whether or not they use agrochemical products, temporary laborers for the harvest, as well as methods of transportation and storage.

The importance of maize to traditional agriculture is evident in that production occurs in 569 out of the 570 municipalities. Of these, 378 are indigenous with an annual sowing of in 325,000 hectares, of which 93 percent depend upon seasonal rains. Maize yield is about 1.2 metric tons per hectare compared to the national average of 1.9 tons. But if we disaggregate irrigated from non-irrigated yields, the difference in yield is even less with the average yield on non-irrigated fields is 0.79 metric tons per hectare.

Although this type of agriculture is centered on the production of maize and associated crops, the profusion of chemical inputs is bringing an end to inter-cropping resulting in diminishing diverse plots. Contemporary indigenous agricultural technologies

no longer conform to the integrated systems of the past, and some that formed ancient conceptions and practices of Mesoamerican and colonial agricultural traditions. At present, there is no viable alternative, neither productively or environmentally. The most adaptive would be to follow the original practices such as using ground cover, promoting soil retention, the conservation of humidity, and collective community work, among others.

Since the conquest, and even more intensely since the 19th century, Oaxaca's indigenous groups have participated in international trade: the fundamental difference is that before, it was a source of cheap or even free manual labor on plantations (established lands that had been expropriated from them), whereas now cultivation for the market is being done on ejido lands or on the communal lands. The neoliberal impact on social relations, production, nutrition, and environment of the neoliberal model being imposed is evident. The pressure to place additional lands into production, given soil, slopes and pluvial conditions, slash and burn techniques do not bode well for future production. Planting maize on slopes causes the continuous loss of soils and organic matter, progressively diminishing agricultural yields.

Aside from milpa cultivation, indigenous agriculture often includes the cultivation of cash crops for the market. Perennial crops have a notable place. Coffee holds first place, followed by maguey for mescal production, fruit trees, and vegetables. The importance of these cash crops for households explains the high percentage of individual or family plots. In many cases family gardens and orchards are tended by women and children. Garden plots and trees are not only an important source of food, but of spices, medicinal herbs, and decorative plants and flowers. Gardens and orchards are important

for the nutrition, production and economy of indigenous households are under appreciated, and many studies show they reflect the vast indigenous botanical knowledge. In the case of fruit trees (wild and cultivated) indigenous communities have ample knowledge of their cultivation, but they lack a strategy and efficient methods needed to take full advantage of them, hence even though many households have them, they do little to increase their income..

Coffee is an important crop for Oaxaca and it holds third place in Mexico's production coffee. Coffee is grown in 312 municipalities in all the regions of the state, except in the Central Valleys. Some 4,969 parcels comprising some 171,480 hectares are dedicated to coffee. About 55,000 producers, mostly in indigenous communities, depend on its cultivation. Of these, more than half have coffee plantations smaller than two hectares; and 17,150 between two and five hectares. Yields are low, running between five and six quintals (46 kilos) per hectare.

In indigenous areas, coffee is dry processed rather than washed. Coffee berries are manually de-pulped, and spread out to dry in the sun, then husked to produce café oro (literally gold coffee) which are then classified, and hand sorted. The lack of equipment and the urgent need for cash means that coffee is sold as beans (pergamino) by growers to "coyotes" (intermediaries) or to monopolistic enterprises that are then transform into café oro, toasted, and sold on the national and international markets. In 1989 the State Coordinator of Producers of Cafe was established (CEPCO) with 30 affiliated indigenous organizations as an alternative for obtaining better prices and credit, storing, transforming, to control production processes, industrialization, and commercialization of the coffee bean and, even, exporting mainly to Europe or US. As a result Oaxaca has

become the main producer of organic coffee after Chiapas.

Over and above its economic importance for these communities, the shade for coffee trees (especially varieties not grown in direct sunlight) is of great ecological relevance. Its importance for bio-diversity is undeniable: coffee plantations provide habitats and areas of protection for innumerable species of plants and animals. Not only are they important as preservers of biodiversity, coffee grown under shade trees also helps protect watersheds and to prevent soil erosion. Here we find yet another impact of neo-liberal strategies, (which by manipulation of prices) seeks to force peasants to abandon their coffee plantations (perhaps entirely) and migrate. The most worrying part of this is that this strategy seems to be working: out migration from coffee communities, which before was not common prior to this crisis, has increased. [19]

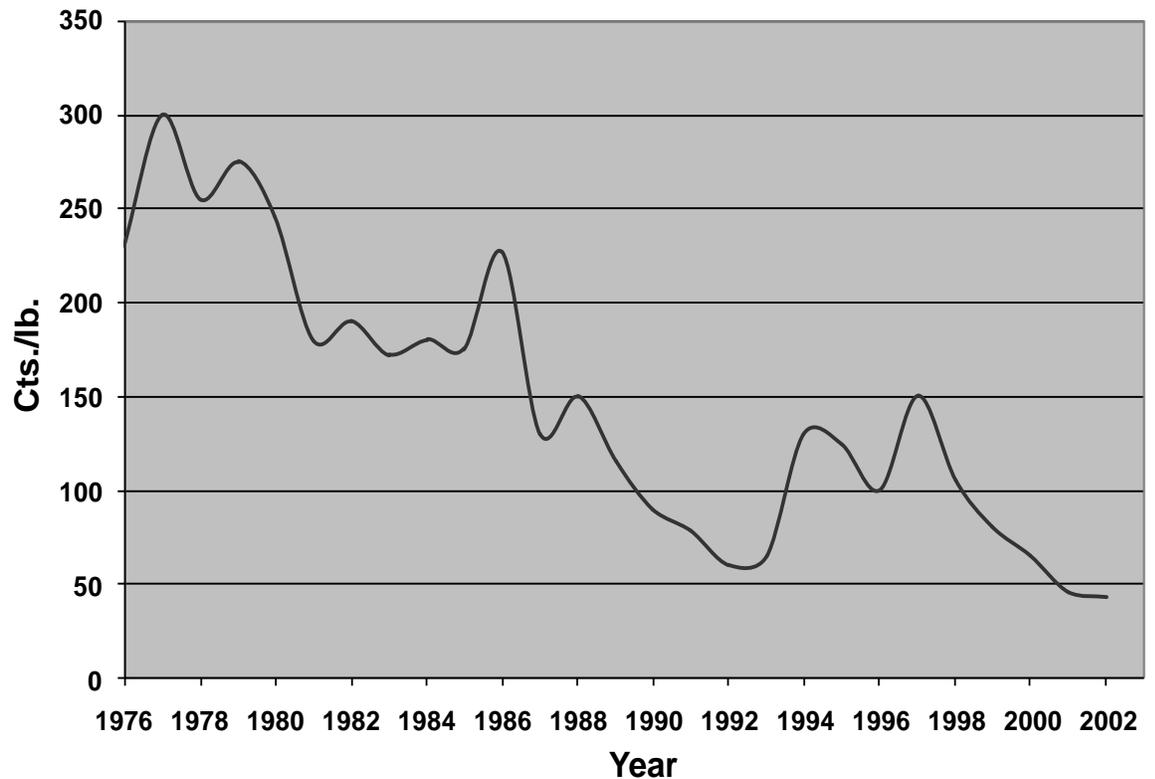
Economically, by the 1970s household income among Oaxaca's indigenous growers had become so dependent upon the sale of coffee that the logic of its production determined the order of priorities for other productive activities, and the use of the available work force. Its cultivation transformed access to and use of lands in these communities. Its adoption by Indigenous growers has given rise a great wealth of knowledge about how to adapt its production to local conditions that really deserves to be appreciated.

Production of maize and coffee are integrated into the world market. As globalization increases these crops acquire new social connotations, as well as economic and environmental implications, but under an increasingly uncertain context: land for coffee and maize production is bound closely to indigenous communities which over the medium term face the risk of disappearance. The fall in coffee prices following the

demise of the International Coffee Agreement (ICA) in 1989, which regulated coffee exports, was provoked by large multinational consortiums that sought to buy coffee at ever lower prices. Falling coffee prices aggravated the already worsening conditions indigenous communities had suffered since the Mexican economic crisis in 1982.

#### AVERAGE COFFEE PRICES IN THE NEW YORK STOCK EXCHANGE

1990 CONSTANT PRICES (Source: ECLA 2002)



Forestry and cattle ranching are also an important part of many indigenous communities and ejidos. Most of Oaxaca's forests are held by Indian communities.

Recent estimation shows that 90 percent of 3,106,956 hectares are located in indigenous areas [20]. These forests include 30 high-priority areas for conservation based on their high national and international biological value. Despite their enormous economic potential, with a few notable exceptions in the Sierra Norte and the Sierra Sur, indigenous communities do not view their forests as sources of commercial opportunity. Rather they limit exploitation of forest resources to primarily extracting wood and other raw materials needed to satisfy necessities for construction, nourishment, and health. Non timber commercialization exists on a small scale and involves diverse species such as orchids, palms, and seeds. In the Sierra Norte and the Gulf region 538 forest products are registered for commercial use [21]. This productive potential should be explored both to regulate exploitation of species as well as to establish sustainable strategies of diversification that would increase income in these communities, and protect these diverse ethno-botanical resources.

A notable characteristic of development thinking rests on the belief that raising cattle in tropical areas will solve the economic problems of rural populations. Undoubtedly, the expansion of cattle production is a direct result of Oaxaca's integration into world markets. Between 1992 and 1996 the percentage of state land dedicated to cattle production increased from 24 to 34 percent. As a result much of high and medium altitude tropical forests that covered great expanses of the Coast, the Isthmus and the Gulf have disappeared, and have been converted to pastures to reinforce the indigenous cattle, goat and sheep production. Because of deficiencies in systems of handling, pasturing, feeding and veterinary care of herds and flocks, neither productive nor economic expectations have been met.

Under this structure of production in Oaxaca, CDI (Commission for the Development of Indigenous Groups) estimates that 1,060 ejidos or indigenous farming communities exist. Eighty eight percent of the 297,311 beneficiaries manage their agricultural land as individual plots, but these communities have resisted formalizing this through PROCEDE, the official registry program offering to certify individual rights by granting titles, which would allow land to circulate freely on the market: Oaxaca's indigenous peasants know from experience that survival depends on keeping land in their hands, and so are distrustful of any initiative that interferes with their internal management. Of the 5,812,155 hectares belonging to indigenous communities, little more than 50 thousand have been registered. [22]

### **2.3 Oaxaca and Globalization**

From an international perspective, Oaxaca constitutes a strategic space within the structure of globalization and neoliberalism, derived from two closely linked factors. First, Oaxaca has the greatest biodiversity in the nation and transnational producers find it useful for foods, seeds, medicines, and for exploitation of its forest and marine resources. Second, the Isthmus of Tehuantepec is a place of geo-strategic importance for world trade and development of the Puebla-Panama Development Plan. [23]

Because such territories have legitimate owners, a legal obstacle which prevented their indiscriminate appropriation, gaining access to their natural resources was only feasible through legal and political means. Thus PROCEDE's registry program seeks to facilitate the entrance of private capital and to legalize the sale of ejidos and communal lands, that is, to incorporate them into a land market. As part of public policies designed

to pressure peasants into selling their lands, as already mentioned, PROCAMPO, was instituted to subsidize them as they leave their land. The Opportunities Program, under the rubric battling poverty, grants scholarships to stimulate school attendance and to take care of family health, especially that of women. Further assistance is offered by Programa Alianza para el Campo (Alliance Program for the Countryside), that distributes animals and agricultural production inputs especially during electoral or political events,

## **2.4 Maize in Oaxaca**

Liberalization policies have placed Oaxaca's maize producers at risk in the context of the ability of corporations to patent native seeds and opening the market for transgenic food. Their vulnerability is evident in the structure and size Oaxaca's maize producer sector.

- \*Oaxaca is one of 7 states with the highest number of producers.

- \*Seventy six and three tenths percent of the production units consist of 5 hectares or less, generally on land of poor quality and in unfavorable physiographical condition.

- \*Only 3.3% of the production units have access to irrigation.

- \*It produces around 3.9% of Mexico's maize, but with productivity rates similar to Mexico's 1964 average (INEGI)

- \*Oaxaca's producers are among the poorest of the population, and are dependent on the family labor and seasonal production, with 75% of producers growing maize for subsistence.

- \*Most producers belong to one of the 16 ethnic groups in Oaxaca.

In summary, maize production occurs on small farm holdings, often on slopes, with little access to irrigation. Combined with cut backs in support for the agricultural sector, the maize sector in particular seems to have an unpromising future. Faced with declining production of their basic staple, combined with soil erosion, increasing imports of grain, including transgenic varieties, little by little the ancestral capacity of indigenous communities is being destroyed. Yet despite everything, maize producers continue to subsist and to reproduce. And even diminishing maize cultivation does not mean they will give up the land. While there are indicators in Oaxaca that the privatization of ejidos is advancing, this advance is being checked by the creation of survival strategies sustained by migration whose principle aim is to maintain community life and its institutions, of course, under a dynamics of wide social flexibility.

Low productivity of maize in Oaxaca follows from a series of diverse factors: the inefficiency or absence of public policy to support restructuring; an unfortunate admixture of Mesoamerica and European ideas and technologies, combined with those from modern agriculture has resulted in an important loss of ancestral traditional agro-ecological knowledge, as well as notable advance of erosion. This last indicator – erosion--in certain places has reached alarming proportions. On some 1.8 million hectares erosion is accelerating and on more than 2 million hectares soil erosion is complete [24]. The exhaustion of land from years of agricultural use combined with factors like deforestation and the effects of agrochemicals translates into both declining productivity and the need to open new lands for cultivation (Gordillo et al. 1994; De Janvry et al.1995a and 1995b).

## **2.5 Transgenic Maize in Oaxaca**

In addition to the policies derived from NAFTA that reduced support for maize producers and opened the market to increased imports, producers as well as the population in general face yet another great risk--NAFTA policies governing intellectual property in relation to genetic resources. The trade agreement led to Mexico's adoption of the International for the Protection of Plant Species (UPOV), a new law the Federal Law for the Protection of Plant Species in 1996, and changes to the existing law permitting the patenting of life forms.

In Oaxaca, even before the Mexican state opened the door for the entrance of genetically modified organisms that had been closed in 1998, the danger was already present. Investigations by two Mexican government agencies, the National Commission of Bio-Diversity (CONABIO) and National Ecological Institute (INE), based on samples of indigenous maize from twenty Oaxaca communities and two more in the state of Puebla, found that 95% of these communities (21 out of 22) showed a rate of contamination with between 1% and 35% of indigenous grains containing signs of AND from OGM. Altogether, 8% of the 1,876 samples under study were contaminated by OGMs. At the Conference on Bio-Security in The Hague, Holland in April 2002, the director of CONABIO, Jorge Soberón, stated that this was the worst case of contamination by transgenic organisms reported anywhere in the world.

The principal source of direct genetic contamination in Oaxaca comes from maize imported from the U.S.A. Diconsa, the Institutional Mexico cereal distributor, facilitated the dispersion of this transgenic maize. The Mexican Commission on Bio-Diversity (CONABIO) and National Ecological Institute (INE) found 37% of the maize in a

Diconsa warehouse in Ixtlán (in the Sierra Juárez mountain range) in Oaxaca was contaminated. Thus, NAFTA not only threatens to eliminate the Oaxaca maize producer as a competitor by indiscriminately selling maize at least 25% cheaper than in the rest of Mexico, but through importation threatens to contaminate Mexican maize, and cause its genetic material to gradually disappear.

The environmental and cultural implications of the loss of the genetic diversity of the maize are diverse and relevant, especially for the small Oaxaca seasonal producers who make up the majority of the maize sector [26], since the environmental and agricultural conditions of production are closely tied to the following considerations:

[G]enetic diversity plays a security role in the strategies producers use against the risks, including droughts, frosts, winds, plagues and bad soil quality.... Traditional producers sow different varieties of maize at different times as a guarantee against the changes in the patterns of rain, climate, wind, plagues and soil quality. Certainly, the most suitable combination of seed varieties and dates of sowing were the most powerful technological resources that traditional producers counted on (Garcia Barrios et al., 1991, 174-175).

The Mexican state adheres to its declarations on intellectual property without reservation. These declarations are a death sentence for the genetic diversity of Oaxaca maize, and open the door to public health and environmental risks. The establishment and progressive expansion of transgenic cultivation, despite increasing resistance and criticism, apparently is insufficient to stop the avalanche of exports by the transnational companies Proctor & Gamble, Monsanto, etc. Late in 2004 the Mexican government

reinforced their actions by ratifying the ability to introduce and produce genetically modified food [27, 28].

Although the government claims that the consumption of these foods does not cause problems, at the moment there are indications that its digestion is linked to the development of allergies. Despite the meeting in March 2004 in Oaxaca of the Commission of Environmental Cooperation of NAFTA, the Mexican representative emphasized the innocuousness of transgenic food.

Then again, the Mexican government has been very careful not to specify the central threat of this policy to the definitive loss of genetic native material. The consequences of this policy will force growers to acquire genetically modified seeds instead of native seeds, which, when contaminated lose their capacity to reproduce naturally. To patent, that is, to privatize, the seeds, means an enormous source of potential income for the distributing companies; and, at the same time it represents yet another expense for the already unprofitable peasant producer. Since Oaxaca is one of the places with the greater number of native maize species, it is no wonder that the transnational companies see it with enormous potential.

This will mean losing the patrimony of one of the most important cultural and nutritional legacies that Mexico has given the world, which for peasants and indigenous groups is not only the equivalent of giving up one of the pillars of their identity but will increase the levels of rural poverty. Mexico is currently facing a trap similar to that represented by the massive introduction of agrochemicals and improved seeds into Mexican agriculture in the 1940s, which also fundamentally served to obtain large profits for transnationals. This not only contaminated soil and water and worked against genetic

diversity, but they also failed to translate into any improvement in productivity or better condition of life for producers.

## **2.6 The social and environmental risks of migration and changes in patterns of consumption in Oaxaca.**

In summary we face severe social impacts: principally the effects noted from the demographic transformation are in addition those caused by the loss of traditional knowledge of the environment and its appropriate management. This situation is well-known in most indigenous communities and ejidos, where young people emigrate, reinforced by messages of the mass media providing little motivation for remaining to do agricultural work in the face of unfavorable combination of debilitating tasks and poor benefits. As they leave, the result is the disappearance of the agricultural and environmental practices and traditional knowledge, which is accompanied by an increasing disillusionment of young people and unwillingness participate in meetings, decision making, and governmental systems in community life. If this situation is not reversed, it will, of course, open the way for abandonment and disinterest in conserving and preserving possession of land, patrimony, and the sustenance of indigenous community life. This context has caused a significant polarization in rural communities, where the phenomenon of migration is part of strategies oriented to preserve community life and maintain its forms of government. This is possible as long as population ties to the land persist, but when this breaks, as is beginning to occur among young people, and we are, perhaps, finding it difficult to predict future.

Another important change brought by the integration of the indigenous economy

into the global economy has been modifications in patterns of consumption. While an autonomous or self sufficient community may be an inspiration for its inhabitants, to subsist the indigenous towns must participate intensely in processes of commerce, where their natural resources and labor serve to acquire the necessary or sumptuary goods, which in many cases used to be made in the community. This is case for clothing and footwear, food, drinks, agricultural tools, construction materials, kitchen utensils, soap and fibers, among other articles. Their progressive substitution by industrial products not only increases the need for money to acquire them, but also means the disappearance of related work and traditional craft industries, reverberating in the loss of traditional knowledge on management of natural resources and the making of diverse goods, canceling opportunities to strengthen the community's productive structures or to generate employment through activities that take advantage of the regional knowledge and raw materials. Except for cases oriented exclusively toward external consumption, the fast decay of the community and family craft industries among others are examples of both loss of income and traditional knowledge. The weakening of indigenous economy by the introduction of the massive industrial products is an effective way that neoliberalism succeeds in its strategies of domination and increases its access to the natural and social resources of the indigenous communities of Oaxaca.

### **3 Conclusions**

1. Given the lack of effective options for public policy to improve the conditions of poverty imposed by neoliberal policies, migration to urban areas in Mexico and to the United States will continue to be the only social option for rural and indigenous

populations. Under these conditions, the loss of social capital will increase: the magnitude of this situation is expressed in the loss over the last 40 years of more than 17 million people, and if this migratory phenomenon had not happened, Mexico would have a population of more than 120 million. [30]

2. The Mexican state followed a development policy since 1982 guided by neoliberal principles emanating from directives of organizations like the IMF, the World Bank and of NAFTA which given the country the impetus to institute diverse legal dispositions to allow the opening up of national markets, privatization of communal land, as well as measures to protect intellectual property rights and remove protections for natural resources, all of which favor the economic interests of the large multinational corporations.

3. NAFTA represents, in fact, the extent to which the United States takes to protect its industrial and productive interests and, at the same time, to remove barriers protecting Mexico's economic-productive sectors.

4. The official policy in agricultural production has followed a strategy of reducing the availability of credit, and eliminating guaranteed prices and technical assistance to producers, leading production to stagnate and causing the loss of competitiveness, and putting the country at risk in terms of food security.

5. Within the scope of NAFTA, a program of tariff deregulation was established that allowed the massive importation of maize, including transgenic maize seed, directly damaging way of life of millions of Mexican peasants and threatening one of its most important identity patrimony,

6. Due to its biological diversity and the economic potential of its vast natural

forests, marine and mineral resources, Oaxaca is in the sights of the multi-national consortiums that control the production of food, medicines, perfumes, timber and wood products, metals, and in water management.

7. The impact of the fall in maize production in indigenous communities of Oaxaca, which is the base of its subsistence and cultural life, has increased poverty levels and is generating progressive depopulation of its ejidos and communities.

8. With the indifference of the federal and state authorities, the fall in the prices for commercial crops produced by the indigenous economies has increased the crisis in the indigenous rural sector of Oaxaca.

9. All this happens in the context of indifference and ignorance of the majority of the population, who have been manipulated and distracted by mass media, and by spokesmen and defenders of neoliberal policies.

#### ENDNOTES

1. Member of the Directive Board of the Grupo Mesófilo A.C.
2. Cfr. García Zamora, 2002
3. Roberto Garduño and Ciro Pérez, 2002.
4. Rodolfo García Zamora, 2002
5. Cfr. González R. Alvaro
6. The maps and tables come from the work of Nadal Alejandro, unless otherwise indicated.
7. Enrique Astorga Lira. "Frustrations and hopes for the farming economy", Rural Journal. Supplement of the Rural Journal, 26 February 1997.
8. The land is important for the value of products produced, employees hired its

participation is the most important in the country. Its cultivation expands in different geographic, ecological and social contexts, simultaneously incorporating diverse types of producers and technologies. On the other hand, the grain continues to be the nucleus of the national diet, providing most of the calories and proteins consumed by the population. (García, Zamora, *op. cit*)

9. Chapter VII of the FTA stipulated one immediate conversion of the tariff system for maize to one of quotas to be eliminated in the course of 15 years. Mexico decided an immediate quota without tariffs of 2.5 metric million ton of maize. This quota must extend to an interest composed of 3 annual percent, as of 1995. The import tariff that exceeds the quota was fixed at 206.9 percent from 1 January 1994 (approximately \$197 US dollars per metric ton). In the first six years of the FTA the tariff under quota will be reduced to 29.6 percent of the tariff base. After this period, the remaining tariff will be eliminated lineally during the subsequent nine years. For the fourteenth year of the FTA (2008), the quota without tariffs for maize imports will represent 3.6 metric million ton, and for the fifteenth year all imports will have a tariff zero.

10. The Free Trade Agreement (FTA) in fact does not promote "free commerce" as it is defined by its founder Adam Smith, who advocated for the flow of goods and services without inhibitions. Free trade agreements initiated by the U.S.A. maintain many restrictions on commerce while favoring its own products and corporations. The United States demands that their own structures of agricultural subsidies not be touched while demanding that other countries eliminate import tariffs and quotas.

11. Cf. S'ra De Santis, 2003.

12. Between 1994 and 2003, 26,155 million cubic meters of maize coming from the

United States entered the Mexican market, and according to the FTA, between 2004 and 2008, the number will be 14,054 million metric tons. (Nadal, Alejandro et al)

13. loc. cit, in García, Zamora, op. cit.

14 Ibid.

15 Cf. INI-PNUD, 2002

16 Emigrants provide a highly necessary source of income to some of the poorest regions of the South. According to statistical analysis, the remittances of the working emigrants of Guerrero and Oaxaca reduces by 2% the proportion of the population that lives in conditions of poverty, an apparently number of little significance, but it is almost equal to the results of the programs of poverty reduction, such as “Opportunities”. Temporary migration is also tied to an increase between 20% and 25% in the per capita income. World Bank, 2002.

17 National Council of Population, 2002.

18The data for this section comes from Profiles of the Indigenous Towns of Oaxaca, World Bank, Alvaro Gonzalez R. (Coord.)

19 González R. Alvaro y Mario Bolaños, 2004.

20 Cf. Rodríguez, J. Nemesio

21 García Rafael *et al.*, Mesófilo Group A.C., 1997.

22 SRA, 2004.

23. For additional references on the Isthmus and globalization see Rodriguez, J. Nemesio, 2003.

24. INEGI, 1994.

25. Loc. cit. in Nadal Alejandro.

26. See below in the text for supporting data.

27. Loc. cit. in Ortega Paczka

28 Cf. Bulletin of the SAGARPA, February 11, 2004: Mexico endorses the fulfillment of the Cartagena protocol signed with the United States and Canada, requiring transparency on the cross border movement of genetically modified organisms.

29 Mexico has been importing grain for animal consumption, as well as for the agro-alimentary industry, especially since 1996 for maize, soy and canola.

30 CONAPO, 2004, In the same way, Conapo indicated that in 96% of the 2,350 municipalities of Mexico, there exists some type of contact with the US, expressed through the migration and return to Mexico, as well as through monetary transfers made from the neighboring country to the north.

## **References**

### **References**

Enrique Astorga Lira. 1997. Frustrations and hopes of the agricultural economy, in The Rural Journal. Supplement of the Rural Journal, 26 February.

Banco de México. 2010. Ingresos por Remesas Familiares Banco de México\* Cifras estimadas con base a los resultados definitivos del Segundo Censo de Población y Vivienda 2005

World Bank. 1999. Strategy of development of the states of the south of Mexico Volume 1: Report Summary. September 2003 Profile of the Indigenous Towns of Mexico.

Carton de Gramon Hubert. 1995. The neo-liberal land: What are we talking about? The Rural Journal. Supplement of The Rural Journal, Mexico 1, November.

CONAPO. 2004. Socio-demographic indicators of Mexico.

CONEVAL. 2005. Poverty indicator of Mexico.

Mexico DeSantis S'ra. 2003. Control through Contamination: The U.S.A. Imposes Maize Transgenic and Free Commerce to Mexico and Central America. June.

Enciso Angelica. 1997. Rural Mexico: the crisis that arrived to remain". The Rural Journal. Supplement of the Rural Journal, 30 June. Mexico.

García Zamora Rodolfo. 2002. Agricultural crisis, Free Trade Agreement and International Migration in Mexico. Exposition presented to 2nd World-wide Congress on commerce and rural development. 24-25 October La Guardia, Rioja Alavesa, Spain.

García Rafael et al. 1997. Indigenous Ethno-botanic and Indigenous Markets in the La Sierra Norte mountain range in Oaxaca, Results Report. Mesófilo Group A.C.

Martínez José Manuel 2010. Mexico's corn importations raise in 2008 due to NAFTA. (CNNExpansión.com)

Roberto Garduño and Ciro Perez. 2002. The Free Trade Agreement of North America accelerated the fall of Mexican agriculture, in La Journal, Mexico, 28-11-02.

González Rios Alvaro. 1990. Indigenous Agriculture and Modernization: disastrous marriage? Indigenous America, Vol. L. Mexico.

González R. Alvaro and Mario Bolaños. 2004. Coffee and Biodiversity in the Corner of Ixtlán, Systematization of the Experience, Mesófilo Group A.C. Oaxaca.

INI-PNUD. 2002. State of the Economic and Social Development of the Indigenous Towns of Mexico, Second Inform.. Mexico.

Nadal Alejandro. N.d. Maize in Mexico: Some environmental implications of the Free Trade Agreement of North America. Colmex, Mexico, Document s/f.

Nigh Ron and Nemesio J. Rodríguez. 1995. Violated Territories, INI-CONACULTA, Mexico.

Sherman Robinson et al. 1991. Agricultural Policies and Migration in U.S.-Mexico Free Trade Area: A computable General Equilibrium Analysis, Berkeley University, December, CIDE, USA.

Rubio Blanca. 2001. Exploited and excluded. The Latin American farmers in the neo-liberal phase. Ed. Plaza and Váldes, Mexico.

Cortés Fernando, Daniel Hernández, Enrique Hernández, Miguel Székely y Hadid Vera.

2002. Evolución y características de la pobreza en México en la última década del siglo XX\*\_ Serie: Documentos de investigación 2 de la Secretaría de Desarrollo Social. México.

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