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<CT>Maize and Indigenous Communities of Oaxaca: Two Victims of Neoliberalism


{AU: Note numbers are not given after authors' names at the beginnings of chapters, as you had done originally. I moved note 1  the middle of the chapter's second paragraph. If you want it placed elsewhere (other than after your name here), let us know.}<CA>Alvaro

González Rios

<A>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 in Mexico and to the United States.

By 2006, Remittances from abroad ~~by 2006~~ exceeded \$23.054 million ~~dollars~~, according to the

{AU: Is this the 2010 source in the references? Also, earlier in the book this was Banco  Nacional de Mexico. Unless that's a different organization, the book's editors will decide


how they want the name to appear consistently.} Banco de México—~~ranking~~ second in foreign currency earnings only to oil revenues. Paradoxically, the depopulation and impoverishment of rural Mexico ~~has~~have occurred in a context of government policy that has financed and implemented important programs aimed ~~to modernize~~at modernizing the country's agricultural sector, ~~in order~~ to make it efficient and competitive in global markets. Although social programs are supposed to help improve the living conditions of vulnerable farmers, especially those in indigenous communities, migration continues and rural poverty does not appear to be changing in the short term.

How do we ~~to~~ explain this apparent contradiction? It is clear that indigenous farmers are leaving their homes because something is not working well. Is this ~~due to~~a result of their inability to adapt and ~~to~~of the modernization processes? Or is this phenomenon ~~ona~~ a product of erroneous neoliberal policies or perhaps even deliberate ones? While complex social processes ~~may be~~ behind this that defy a single explanation may be behind the phenomenon, I ~~would~~ argue that these processes are best understood if we focus on their structural causes rooted in neoliberal

policies, ~~and~~ specifically ~~in~~ the North American Free Trade Agreement (NAFTA).¹ Since the early 1980s, Mexico's economic and social policies have been shaped by neoliberal doctrines and reforms imposed by the World Bank and the International Monetary Fund (IMF). Their application in Mexico has led to increasing poverty, marginalization, and rural out-migration in Oaxaca. Since the signing of NAFTA in 1994, ~~that~~which sparked the indigenous revolt in Chiapas ~~lea~~d by the Zapatista Army of National Liberation (EZLN), the Mexican state has worked to implement NAFTA's objectives in the agricultural sector based on four central propositions of neoliberalism:

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<NL>1. Form profitable farms in areas held by smallholders.

<NL>2. Privatize *ejidos* (common property) and communal lands, either by issuing individual titles {AU: This didn't make sense as worded. Do the edits fix the problem, or did I misinterpret your intent?} ~~communal or to~~  ejido members or by allowing ejidos ~~or~~and the community to rent, sell, or lease their lands.

<NL>3. Switch from subsistence to marketable crops.

<NL>4. Encourage decentralization ~~in order~~ to facilitate projects and provide services and subsidies to productive sectors while ignoring poverty. (García Zamora 2002)

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This strategy was implemented through a series of progressive cuts to government programs that had supported peasants and small-farmer agriculture, essentially ruining or weakening their livelihoods and thus creating the social conditions needed for external capital to enter. This strategy also rested on creating the legal frameworks and infrastructure neededed for the free circulation of commodities, ~~so~~thereby opening access to the natural resources held by ejidos and ~~by~~ village communal lands to outside capital. As Roberto Garduño and Ciro {AU: In the references this is Perez; which is right?} Pérez ({AU: Provide the page of the extract.}2002),  in documenting the scale of these actions, state:

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<ext>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 [{AU: We don't normally change exact quotations, but percent should be singular.}](#)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[\[s\]](#) and fishing artisan[\[s\]](#)) much more than commercial ones oriented toward production for export. After 1980, public expenditures ~~on~~[\[in\]](#) 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 effect.[{AU: The source was given prior to the extract, so it is not needed again here.}](#) (Garduño and Pérez 2002)<end ext>

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Cuts to government support for ~~the~~ small-holder agriculture have increased rural poverty. Following neoliberal doctrines, a deliberate policy decision was made to discourage small producers and drive them out of agriculture. The general strategy was to make small-holders' production unprofitable by denying them access to credit, diminishing infrastructural investment, and ~~by~~ practically abandoning technical training and extension programs. As a result of these policies, over the ~~the~~ ~~past 30~~[thirty](#) years Mexico has lost self-sufficiency in the production of maize, sugar cane, cotton, and timber products, among others. The sole beneficiaries of these policies have been a handful of multinational companies with ~~whom~~[which](#) the Mexican state has worked closely in ~~the last~~[those](#) decades. The implementation of neoliberal policies of free trade has provoked a drastic fall in prices ~~of~~[in](#) an array of once profitable agricultural [products](#). These policies have changed the beneficiaries of Mexican agricultural production: multi-nationals are

progressively replacing the *caciques* (political bosses) and middlemen who used to hold power and control the commodities produced by peasants and smallholders. This is certainly the case with coffee, rubber, *henequen* (agave), fruits, vegetables, grains, and forage—~~which were once~~ important parts of indigenous and peasant livelihoods. Multinational companies—the new masters—are ~~not only~~ able to purchase raw materials at ever lower prices ~~but while~~ small-holders and peasants ~~are~~ increasingly ~~are~~ forced ~~to~~ not only ~~to~~ buy the modern canned and packaged foods, synthetic fibers, and plastic goods that are replacing their agricultural production and traditional crafts but also agrochemical products, whose use has been ~~high~~ extensive in ~~the~~ indigenous areas since the 1970s (~~{AU: Is this the source you mean?}~~ González Ríos 1990).

The decline of the economy of indigenous producers represents ~~not just more than~~ a true dismantling of the economic base of their communities and ejidos, ~~but as~~ industrially produced foods have replaced local production, ~~the consumers'~~ nutrition and health ~~of consumers has~~ clearly been altered. If we examine existing deficiencies in 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 ~~{AU: Note 2 gives source information for the maps and figures, which makes no sense here. Please relocate the note to an appropriate spot.}~~ abroad.² According to Enrique Astorga Lira (~~{AU: Provide the page of the extract.}~~ 1997), ~~neoliberalism's success rests~~

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~~[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 . . . ~~[to]~~ 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. ~~(Lira)~~<end ext>

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~~Among~~One of the most severe impacts of this process has been the fracturing of the historical pillar of peasant ~~re~~production—maize. Since 1995, rural policies ~~that~~ have caused ~~its~~ production to stagnate in spite of the crop's continuing national importance.³

<A>Mexican Maize and NAFTA

Under NAFTA, Mexico was required to 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. For at least two decades, ~~even~~ before NAFTA, the Mexican government's support for maize production washad been declining, whether measured in production, land area cultivated, or ~~in~~ falling consumption.

A key sign of the withdrawal of official support for maize production was the significant reduction in credit granted by {AU: Is Banrural a bank?} Banrural for its cultivation. According to ~~Astorga~~-Lira (1997~~ibid.~~): “~~w~~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.”


Since 1994, seasonal producers have been totally excluded from credit. As a result, production has shrunk ~~due to~~ as a result of the adverse relationship between steadily rising production costs and falling market prices. {AU: Provide source information for these figures.} According to constant prices in 1994, in 1975 one metric ton of maize fetched a price of {AU: Why do you have both a dollar sign and pesos? Is this figure dollars or pesos?} \$1,232 pesos; in 1997 ~~it was already only~~ the price had dropped to \$571.40. In the ~~four~~ years ~~between~~ 1990 ~~and~~ 1994, the price fell by 40 percent. This decline had an enormous impact, considering that 2.7 million producers depend directly on maize cultivation. This is not something fortuitous, ~~or~~ and it is not caused by the “free market” in the abstract {AU: You skipped from note 3 to note

5. Where should note 4 appear?}.⁵ It is written into the agricultural agreements of NAFTA that maize was to become a US commercial prerogative ~~of the United States~~, justified by the argument that the United States has greater technological and productive capacity than Mexico and is therefore ~~is~~ entitled to defend and protect its agricultural industry.

~~And it~~ is under these agreements, then, that we find the underlying rationale e for Mexico's policy of reducing its investment in corn and in general preventing the development of viable national agriculture in Mexico. The objective all along has been to favor importation of maize from the United States (table 5.1). Under NAFTA's provisions, no distinction may can be made between local companies and foreign producers, and g Given the notable differences between the two countries with regard to subsidies and support of their respective producers, ~~it is guaranteed that~~ competition will is guaranteed to favor the interests of the North American agricultural industry.

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Table 5.1 Importation of Maize, 1985–1997

{AU: The placement of the column headings was thrown off by the edits. They will appear in their correct positions once the edits are removed.}  Year Total Imports (metric tons)

	<u>% b</u> By Mexican state <u>(%)</u> ^d	<u>% b</u> By private importers <u>(%)</u>	
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 ^a	4,716,000		
1997 ^b	1,294,103		
1997 ^c	3,071,237		

Notes: ^aImports approved for 1997.

^bActual imports during the first semester.

{AU: Can you update this now that it's almost 2012?}^cTotal probable imports for 1997 estimated by ANEC.

^dCONASUPO (Compañía Nacional de Subsistencias Populares).

Source: {AU: This source is not in the references. Provide complete publication information, including the date, so we can add it.} ANEC (Asociacion National de Empresas Comercializadoras de Productores del Campo).

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With some off years, Mmaize importation with some off years, grewincreased between 1985 and 1997. As may can be seen in this-table 5.1, there has been a burgeoning growth in the percentage of private maize importers, who have moved into the vacuum left behind-as the state's reduced its support offor maize production under pPresident {AU: Provide a first name for Salinas de Gortari.}Salinas de Gortari.

Among other things, thisthese data shows that the nation's food supply—a matter of strategic importance—is being left more and moreincreasingly 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 most theof Mexico's food industry in Mexieo. The biggest beneficiaries are North American companies, whowhich, under NAFTA's provisions, 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~~were imported from the ~~U.S.~~United States without any tariff payments. Under NAFTA, Mexico was to expand its import quota of duty-free US maize by 3 percent a year for ~~45~~fifteen years. The gradual lowering of trade barriers, however, did not last the stipulated length of time. By 1996, maize imports had already exceeded the quota by more than 3 million tons, and all tariffs were discarded. Every year since its implementation, with the exception of 1995, maize exports from the ~~U.S.A.~~United States 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

{AU: In the references this is DeSantis (no space); which is right?}De Santis 2003). {AU: Provide the source for these figures.}In 2008, ~~the figures show that~~ 751,000 tons of yellow corn and 49,488 of white corn ~~were~~ imported from ~~US~~the United States.

Consequently, while ~~the~~ North American and Canadian maize producers enjoy both enormous support and increased access to the Mexican market under NAFTA, Mexican growers have seen prices, support, and subsidies reduced.⁶ 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 the ~~continuously~~continually rising costs of production inputs, the small size of their plots, their location on marginally productive land, and the loss of the necessary manual labor for ~~the~~ cultivation because of increasing out-migration. {AU: Provide the source for this statistic.}These smallholders represent 64 percent of ~~the total~~ Mexico's maize producers.

Hubert Carton de {AU: In the references this is Gramon; which is right?}Gramont (1995) notes that the Mexican government's policy of an open and deregulated economy has polarized the Mexican countryside. SomeAround 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 sector in Mexico that can absorb them (García Zamora 2002). While there are some notable exceptions, this last category ~~contains~~ includes indigenous maize growers; ~~and~~, given the absence of effective absorption, their only option has been to abandon their communities and lands and become national or international migrants.

Some NAFTA analysts ~~of NAFTA~~ argue that the maize imports have given 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 during that period (~~source is not in the references. Provide complete publication information so we can add it.~~) Gordillo et al. 1994:3.1). ~~This~~ The same source showed that in 1990, migration occurred it was individuals 30 ~~and~~ to 45 years of age ~~who went in~~ migrated with the highest frequency. After 1994 ~~the highest level of migration~~ was among individuals ~~from~~ 20 to 30 years of age ~~who were going~~. Of the 21 percent ~~for~~ of individuals between ages 20 and 25 ~~years of age~~ who had migrated, 54 percent went to the United States. For families with plots of land between 5 and 10 hectares, the percentage ~~going to~~ who left for the United States was even higher—64 percent (*ibid.*).

To ~~placate~~ ease the crisis generated in the maize sector (~~but~~ ~~albeit~~ more for social stability than anything else), the Mexican state created programs ~~like~~ such as ~~define~~ PROCAMPO, which provides small subsidies to maize growers based on the amount of land planted. ~~What year is the starting point?~~ To maximize subsidies over the next ~~15~~ fifteen 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 to use their products. While PROCAMPO has not restrained migration or diminished poverty, it has generated corruption, as 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 political 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. No efforts have been made to expand ~~the capacities of~~ peasant growers' capacity 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~~ NAFTA—is the marked inequality that exists between the urban and rural populations, as shown in ~~F~~ figure 5.1. With such disparity—especially in the rural areas, where all poverty indicators have grown ~~{AU: “over the past eight years” means since 2003; is that correct?}~~ over the past eight years—it is little wonder that migration, ~~which~~ once ~~was~~ restricted to certain states and regions, ~~have~~ has significantly increased everywhere among indigenous communities and ejidos. ~~{AU: I deleted “currently” because a decade-old statistic is not current.}~~ It is ~~currently~~ estimated that ~~4-outfour~~ 4 of 10 of ~~10 of their~~ ten inhabitants reside in urban centers (INI-PNUD 2002).⁷

<Fig. 5.1>


As ~~the map above~~ figure 5.1 shows, the areas of highest out-migration are in the southern states, where the majority of the indigenous population is concentrated. These are also Mexico's poorest states, where the economy is based on subsistence maize and coffee and ~~where~~ large segments of the population worked ~~ed~~ ejido, or communal, lands.

While migration and rural poverty have always been present in ~~the~~ Mexico's history ~~of~~ Mexico, the neoliberal strategy of promoting free markets and reducing the role of the state ~~have~~ has significantly accentuated out-migration over the ~~lp~~ past few decades. In Oaxaca, the state with the greatest cultural and environmental diversity ~~of the country~~, the effects of these policies

have greatly accelerated out-migration. Annually, ~~some~~ 200,000 Oaxaqueños migrate to the northern states, with about 150,000 ~~of these~~ going to the United States as temporary or permanent migrants. Of these migrants, about 45 percent are women (~~{AU: This source is not in the references. Provide complete publication information so we can add it.}~~ Instituto Oaxaqueño de Atención al Migrante 2006).

<A>Maize and Neoliberalism in Oaxaca


~~The~~ State Context

Demographically, Oaxaca is characterized by ~~a~~ low population growth, ~~in good part due to~~ largely because of strong out-migration, ~~where b~~ Between 1990 and 2005, ~~{AU: 74 percent of states is confusing here because you are discussing just Oaxaca. If you mean of all Mexican states, can the sentence be moved to a section with a broader focus?}~~ 74% percent of states and 570 municipalities ~~presented~~ had negative or stagnant growth 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 poverty: in 39 percent of municipalities, ~~have~~ more than 50 percent of ~~whosethe~~ population is food-insecure; in 40 percent of the ~~municipios~~ municipalities, more ~~of~~ than 60 percent of the population is made up of the unskilled poor; and in 81 percent of municipalities, more than 80 percent of the population lacks insufficient income to meet basic needs (~~With~~ CONEVAL 2005 ~~data~~).

~~The i~~ Indigenous ~~s~~ Systems of ~~m~~ Maize ~~p~~ Production in Oaxaca

Oaxaca's indigenous agricultural systems ~~display~~ are characterized by the use of ancestral seeds, growing other crops along 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.⁸ In many communities, agriculture is based on observation of the lunar calendar to establish days of sowing and harvest and the ~~accomplishment~~ performance of ceremonies and rituals to propitiate fertility. Differences between systems of production

~~between~~among communities reflect differences in soils and specific climates that determine variations in ~~their~~ agricultural calendars, the types of maize seeds ~~of maize~~ and kinds of plants inter-cropped, frequency of weeding, ~~the~~ level of yields, and ~~the~~ time the 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 farmer uses agrochemical products, and temporary laborers for the harvest, as well as the methods of transportation and storage employed.

{AU: Provide source information for the figures in this paragraph.}  ~~In all but one of Oaxaca's 570 municipalities~~ Traditional maize agriculture is practiced in all but one of Oaxaca's 570 municipalities. Of these, 378 are indigenous municipalities that sow a total of 325,000 hectares annually; ~~of these~~ 93 percent depend ~~upon~~ seasonal rains. In these communities the maize yield averages about 1.2 metric tons per hectare, ~~as~~ compared ~~to~~ with the national average of 1.9 tons. But if we disaggregate irrigated from non-irrigated maize, we find that non-irrigated fields only yield an average of 0.79 metric tons per hectare.

{AU: You just defined milpa.} While in this type of traditional milpa (~~cornfield~~) agriculture maize ~~was used to be~~ grown with beans, ~~and~~ squash, and other associated crops, the wide use of chemical inputs is bringing an end to inter-cropping and diminishing the diversity of crops grown in plots. Contemporary indigenous agriculture no longer follows the integrated systems of the past, some of which employed ancient conceptions and practices descended from Mesoamerican and colonial agricultural traditions.

Although Oaxaca's indigenous groups have participated in international trade ever since the eConquest as a source of cheap labor, ~~(the difference~~ now is that ~~now is that~~ cultivation for the market is being done on ejido ~~lands~~ or ~~on the~~ communal lands. The impact of neoliberal policies on social relations, production, nutrition, and the environment is increasingly evident in the pressure to place additional lands into production. Given soil, slope, ~~s~~ and pluvial conditions and the use of slash-and-burn techniques, such pressures to put land into production does not bode

well for the future. 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 [here](#). 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. While ~~such~~[these](#) garden plots and trees are an important source of food and nutrition, most indigenous households are unable to take full advantage of them. ~~h~~[H](#)ence, even though many households have ~~them~~[such plots](#), they do little to increase their income.

Maize in Oaxaca

Neoliberal liberalization and free trade policies have also placed Oaxaca's maize producers at risk in the context of the ability of corporations to patent native seeds and [the opening of](#) the market for transgenic food. Their vulnerability is evident in the structure and size [of](#) Oaxaca's maize producer sector:

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[{AU: Provide sources for all the statistics in this list.}](#) <NL>1. Oaxaca is one of ~~7~~[the seven](#) [Mexican](#) states ~~in Mexico~~ with the highest number of maize producers.

<NL>2. Seventy ~~six~~ percent of maize production occurs in fields of 5 hectares or less, generally on land of poor quality and in unfavorable physiographical conditions.

<NL>3. Only 3.3 percent of ~~the~~ production units have access to irrigation.

<NL>4. Oaxaca produces around 3.9 percent of the maize in Mexico, but its yields per hectare are similar to Mexico's 1964 average ([{AU: If this is supposed to be a source, it is not in the references; further, INEGI has not been defined. If it is a source, provide complete publication information and define the acronym.}](#) INEGI).

<NL>5. Dependent on family labor and seasonal rains, Oaxaca's producers are among the

poorest people in the state, and 75 percent ~~of them~~ grow maize for subsistence.

<NL>6. Most producers belong to one of the ~~16~~sixteen ethnic groups in Oaxaca.

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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, Mexico producers face yet another, perhaps even greater risk rooted in NAFTA policies that governing intellectual property in relation to genetic resources. NAFTA led to Mexico's adoption of the {AU: A word is missing here: International
WHAT for the Protection of Plant Species. In what year was it adopted? We include
acronyms only when they are reused in a chapter. UPOV is not reused, so I deleted
it.} International for the Protection of Plant Species ~~(UPOV)~~; to a new law, the Federal Law for the Protection of Plant Species, in 1996; and to changes to the existing law permitting the patenting of life forms—all of which have profound implications for maize production.

{AU: Provide source information for the statistics in this paragraph.} Even before the Mexican state opened the door for the entrance of genetically modified organisms (GMOs), the danger was already present in Oaxaca. Investigations by two Mexican government agencies, the National Commission of Bio-Diversity (CONABIO) and the 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 percent of these communities (21 ~~out~~ of 22) showed a rate of contamination with between of 1 percent and to 35 percent of indigenous grains containing signs of {AU: Define NDA.} NDA from genetically modified organisms ~~(GMOs)~~. Altogether, 8 percent of the 1,876 samples under study were contaminated by GMOs. {AU: Provide source information for Soberón.} At the Conference on Bio-Security held 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.

{AU: Provide the source(s) for the statistics in this paragraph.} The principal source of

direct genetic contamination in Oaxaca comes from maize imported from the ~~U.S.~~United States. Diconsa, the ~~Institutional Mexico~~INE's cereal distributor, facilitated the dispersion of this transgenic maize. ~~{AU: CONABIO and INE were just defined.}~~The Mexican Commission on Bio-Diversity (CONABIO) and National Ecological Institute (INE) found~~discovered that~~ 37 percent of the maize found in a Diconsa warehouse in Ixtlán (in the Sierra Juárez ~~m~~Mountain range) in Oaxaca was contaminated. Thus NAFTA ~~not only~~ threatens to eliminate the Oaxaca maize producer as a competitor not only by indiscriminately selling maize at a price at least 25 percent ~~less~~lower than the prevailing rate in the rest of Mexico but also through importation, ~~also~~which 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. ~~since~~The environmental and agricultural conditions of production are closely tied to these se following considerations:

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<ext>Genetic 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. ({AU: This source is not in the references, although there is a García et al. 1997. Is that what you mean to cite here? If not, provide full publication information for Garcia Barrios et al. 1991. Please supply all your missing sources in an electronic format.}Garcia Barrios et al. 1991:174–175)<end ext>

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If the Mexican state continues to adhere to its declarations on intellectual property without

reservation, these declarations are ~~both~~ a death sentence for the genetic diversity of Oaxaca maize, and they open the door to public health and environmental risks. Given the momentum and power underwriting the progressive expansion of transgenic cultivation, despite rising resistance and criticism, nothing seems able to stop the avalanche of exports by the transnational companies Procter ~~&~~and Gamble, Monsanto, ~~et~~and others. ~~In Late in~~ 2004 the Mexican government gave these companies even greater license by ratifying the agreements allowing them to introduce and produce genetically modified food.⁹

The Mexican government has been very careful not to specify the policy's 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 p~~Patenting—that is, ~~to~~ privatizing—the seeds ~~would~~ means constitute an enormous source of potential income for these transnational 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~~ has one of the greater numbers of native maize species of any Mexican state, it is no wonder that the transnational companies see its ~~with~~ enormous potential.

If these transnational companies do come to dominate seed production, Mexico will ~~lose~~ one of the most important cultural and nutritional legacies ~~that Mexico~~ it has given the world. For peasants and indigenous groups, giving up control over maize directly threatens one of the pillars of their identity and will assuredly increase the levels of rural poverty. The trap Mexico is currently facing is very similar to the one ~~that Mexico~~ the country fell into with the massive introduction of agrochemicals and improved seeds into Mexican agriculture in the 1940s, which also fundamentally ~~served to~~ obtained large profits for transnationals. Agrochemicals not only contaminated soil and water but also worked against genetic diversity and ~~also~~ failed to translate into any improvement in productivity or better conditions of life for producers.

Because maize production in Oaxaca ~~is done~~ takes place on small farms—often on slopes—

with little access to irrigation, given the cuts in governmental support for the agricultural sector, the future of maize growers seems particularly unpromising. Faced with declining yields, accelerating soil erosion, and increasing maize imports, 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. Although maize cultivation may be declining, this does not mean indigenous communities 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 principal aim is to maintain community life and its institutions, of course, under a dynamics of wide social flexibility.

The 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, which has resulted in an important loss of ancestral-traditional agro-ecological knowledge; as well as a notable advance of erosion. This last indicator—erosion—in certain places erosion has reached alarming proportions. On some around 1.8 million hectares of land, erosion is accelerating; and on more than 2 million hectares, soil erosion is complete (AU: This source is not in the references. Provide publication information in an electronic format.) INEGI 1994). The exhaustion of land from years of agricultural use, combined with factors like such as deforestation and the effects of agrochemicals, translates into both declining productivity and the need to open new lands for cultivation (AU: Not one of these three sources is in the references. Provide complete publication information for all three in an electronic format.) Gordillo et al. 1994; De Janvry et al. 1995a, and 1995b; Gordillo et al. 1994).

The sSocial and eEnvironmental rRisks of mMigration and eChanges in pPatterns of eConsumption in Oaxaca

Neoliberal policies have had a severe set of social impacts on Oaxaca small producers. In addition to the demographic effects of migration transformation and those caused by the loss of labor, out-migration also threatens the transmission 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 mass-media messages of the mass media providing that give the demographic little motivation for remaining to and do agricultural work in the face of an unfavorable combination of debilitating tasks and poor benefits. As they young people leave, agricultural and environmental practices and traditional knowledge are threatened; as they young become ever more committed to wage work, they become less interested in agriculture and less willing to participate in village meetings, decision-making, or in its government, and community life. If this situation is not reversed, it will, of course, open the way for the abandonment of indigenous community life and to a disinterest in conserving and preserving possession of the land, which is its patrimony. This is already a cause of significant polarization in rural communities, **{AU: You just said that migration is weakening community life and village governments; I'm thus unclear how it can be part of strategies oriented to preserve that life and government. Am I misreading this? If not, please reword to eliminate the seeming contradiction.}** where the phenomenon of migration is part of strategies oriented to preserve community life and maintain its village forms of government. **This is Preserving and maintaining village life and government is** possible as long as population ties to the land persist, but when these ties break, as is beginning to occur among young people, and the future becomes less predictable.

<A>Conclusion

{AU: In this section you had a series of numbered points. That style does not match the conclusion section of other chapters in the book. I therefore converted the points to paragraphs. Be sure the grouping of sentences is acceptable.} Given the lack of effective public-policy 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 Mexico's rural and indigenous populations (CONAPO 2004).¹⁰

The neoliberal development policies of privatization that the Mexican state has followed since 1982, of privatization and which culminated in NAFTA of include free trade, protection of intellectual property rights, and the removal of protections for natural resources and which culminated in NAFTA, all favor the economic interests of the large multinational corporations. NAFTA represents, in fact, the extent lengths to which the United States takes will go to protect its industrial and productive interests and, at the same time, to remove barriers that protecting Mexico's economic-productive sectors.

Following neoliberal tenant tenets, Mexico's official policy in agricultural production has {AU: I suggest this change to avoid the echo "Following . . . follow"; okay?} followed been a strategy of reducing the availability of credit and eliminating guaranteed prices and technical assistance to producers. leading This has caused production to stagnate, and causing the led to a loss of competitiveness, and putting the country's food security at risk in terms of food security. Within the scope of NAFTA, a program of tariff deregulation was established that allowed the massive importation of maize—including transgenic maize seed—which has directly damaging way of affected the way of life of millions of Mexican peasants in a negative way and threatening threatened one of its their most important aspects of identity: patrimony.

Because of its biological diversity, vast natural forests, and marine and mineral resources, Oaxaca is in the sights of the multi-national consortiums that that are vying for control of the production of food, medicines, perfumes, timber and wood products, and metals, and in as well as water management.


The impact of the fall decline in maize production in the indigenous communities of Oaxaca, which is the base of its the state's subsistence and cultural life, has increased poverty levels and is generating progressive depopulation of its ejidos and communities. With the indifference of the federal and state authorities indifferent to their plight, the fall drop in the prices for commercial

crops produced by ~~the~~ indigenous economies has increased the crisis ~~in~~among Oaxaca's indigenous communities.

All ~~of~~ this ~~has~~ happened~~s~~ in the context of indifference and ignorance ~~of~~among the majority of the population, who have been manipulated and distracted by mass media and by ~~spokesmen~~spokespersons for, and defenders of, neoliberal policies.

<A>Notes

1. ~~The author is a M~~member of the ~~D~~irective ~~B~~oard of the Grupo Mesófilo A.C.

{AU: On the figure and table themselves,  give other sources for both. Is this note really needed? It confuses the issue more than it clarifies it.}2. The ~~maps~~figure and tables ~~come~~are from ~~the work of Nadal~~ Alejandro Nadal (n.d.), unless otherwise indicated.

3. The land is important ~~for~~because of the value of ~~the~~ products produced, **{AU: The rest of this sentence makes no sense, and I am at a loss to suggest a fix. Please reword for clarity.}**~~employees hired its participation is the most important in the country. Its~~Maize cultivation ~~expands~~has expanded into 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 consumes (García Zamora ~~op. cit~~2002).

{AU: Provide source information for the statistics in this note. Be sure to add the number for the note to the text. The wording did not make sense to me. I attempted to clarify it, but I may have misinterpreted your intent. Please let me know if the changes are acceptable.}4. Chapter 7 of ~~the~~ NAFTA stipulated ~~one~~an immediate conversion of the tariff system for maize to one of quotas to be eliminated ~~in~~over the course of ~~15~~fifteen years. Mexico decided on an immediate quota without tariffs of 2.5 ~~metric~~million metric tons of maize. This quota must extend to ~~an~~include 3 percent annual interest ~~composed of 3 annual percent~~, as of 1995. The import tariff ~~that~~on amounts that exceeds the quota was fixed at 206.9 percent ~~from~~ ~~starting on~~ January 1, 1994 (approximately US \$197 ~~US dollars~~ per metric ton). In the first six

years of ~~the~~ NAFTA, the tariff on amounts under quota ~~will be~~ was reduced to 29.6 percent of the tariff base. **{AU: Is this what actually happened, now that the dates have passed? Please update.}** After this period, the remaining tariff ~~will~~ was to be eliminated lineally during the subsequent nine years. ~~For~~ During the fourteenth year of ~~the~~ NAFTA (2008), the quota without tariffs for maize imports ~~will~~ represented 3.6 million metric ~~million~~ tons, and ~~for~~ during the fifteenth year all imports ~~will~~ were to have zero tariffs ~~zero~~.

5. ~~The Free Trade Agreement (NAFTA)~~ 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. United States maintain many restrictions on commerce while favoring ~~it~~ the country's own products and corporations. The United States demands that ~~their own~~ its structures of agricultural subsidies not be touched while demanding that other countries eliminate import tariffs and quotas.

6. Between 1994 and 2003, 26,155 million cubic **{AU: Correct that you want meters here and tons in the next sentence?}** meters of maize ~~coming~~ from the United States entered the Mexican market, ~~and a~~ according to ~~the~~ NAFTA, **{AU: It's almost 2012. Please update the amount.}** between 2004 and 2008 the number will be 14,054 million metric tons (Nadal Alejandro et al. n.d.).

13. loc. cit, in op. cit.

7. 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~~ in Guerrero and Oaxaca reduces ~~by 2%~~ the proportion of the population that lives in conditions of poverty by 2 percent; ~~an apparently~~ That number ~~of~~ might seem ~~little significance~~ insignificant, but it is almost equal to the results of ~~the~~ programs of poverty reduction, such as **{AU: Who instituted this program? When?}** “Opportunities”. Temporary migration is also tied to an increase ~~between~~ in per capita income of 20% percent and to 25% percent in the per capita income. **{AU: This source is not in the references. Provide complete publication information in an**

electronic format. World Bank 2002).

8. The data for this section ~~comes~~ from Profiles of the Indigenous Towns of Oaxaca, World Bank, ~~Alvaro Gonzalez R.~~ (Coord. 1999).

9. {AU: Should this source be added to the references?} 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.

10. {AU: I moved the source to the text. Please define CONAPO.} ~~CONAPO 2004, In the same way, Conapo~~ CONAPO (2004) indicated that ~~in~~ 96% percent of ~~the~~ Mexico's 2,350 municipalities ~~of Mexico, there exists~~ have some type of contact with the United States, expressed through ~~the~~ migration and return to Mexico, as well as through monetary transfers made from the ~~neighboring country to the north~~ United States.

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