

Heterogeneity in agrarian practices as a strategy to adapt to global processes; the case of Santa Cruz (Chilapa, State of Guerrero, Mexico)

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Abstract: This study case is based on the community of Santa Cruz, municipality of Chilapa, from the State of Guerrero, Mexico. The data obtained from interviews, local groups of discussion and participant observation, allowed us to learn the heterogeneity of agrarian practices, processes of change and the established relationships among the social actors, as well as their relationship with natural resources; in the framework of modernity and their incidence on social strategies of rural reproduction. In the diversification of the agrarian practices, where those culturally appropriated to assure the subsistence and the modern that look for the local development are combined, one finds the cultivations of maize and tomato, and cattle, mescal and mescal production, practices that have strengthened networks that enable social cohesion.

Key words: agrarian practices, peasant strategies, local actors.

Resumen: El estudio de caso se basa en la comunidad de Santa Cruz, municipio de Chilapa, en el estado de Guerrero, México. Los datos obtenidos de entrevistas, discusión de grupos focales y de la observación participante permitieron conocer la heterogeneidad de las prácticas agrarias, los procesos de cambios y las relaciones establecidas entre los actores sociales, así como su relación con los recursos naturales, en el marco de la modernidad y su incidencia en las estrategias sociales de reproducción campesina. En la diversificación de las prácticas agrarias, donde se combinan las culturalmente apropiadas por la población para asegurar la subsistencia, y las prácticas recientemente introducidas que buscan el desarrollo local se encuentran los cultivos de maíz y jitomate, la producción ganadera, del petate y del mezcal; prácticas que han fortalecido redes que permiten la cohesión social.

Palabras clave: prácticas agrarias, estrategias campesinas, actores locales.

Introduction

The scholars of the rural environment have emphasized the consequences brought along by economic globalization and the gradual governmental abandonment of subsistence agriculture (as from the 1960's decade), such as the stressed competitive participation in new markets, the forgetting of peasant agricultural practices, migration and even exodus (Yúnez-Naude and Bárcenas, 2004; Barkin, 2006; Canabal and Flores, 2004; Massieu *et al.*, 2005; Sánchez-Daza and Martínez, 2005). In parallel to this trend, other studies seek to revalue traditional agriculture trying to overcome the dichotomy between the agricultural-rural sector and the marginal role assigned to it in development, aiming to break the narrow economic paradigm wherein it has been placed and move it to the context of politics and institutions (Pérez, 2001). One of the lines of revaluing are the studies with a perspective centered on the local actor; not only does this line consider the current complexity of the rural environment as a consequence of exogenous factors conceived in the wider processes of the neoliberal markets, which influence and configure social and agrarian processes in the communities, but also recognizes peasants as actors, as they in their limited spaces of action set up strategies to solve the problems they face to deal with their subsistence (Baños, 2003; Long, 1996).

Gerritsen (2004) and Paredes (2003) consider there are few studies that support the idea that local answers have diversified in order to face the strikes from globalization; hence, recognizing the complexity and importance of rural studies with a vision centered on peasant strategies is accepting their heterogeneity and not their dissolution as they enter into broader processes.

Our research is framed into the perspective of diversity; we focus on the rescue of the concept of agrarian practices, from the methodological approach of agrarian styles. On the one side, because this concept examines both the complexity of social relations and the differentiation in economy; and on the other, because it shows the relevance that control of land has both in the interrelations with the processes or exogenous factors and the agro-ecological conditions. In this way, our working hypothesis starts from the premise that heterogeneity in accessing strategic resources to survive, as a specific structure of the agricultural and forestal labor process allows

understanding basic patterns generated in the agrarian practice at the community level as an answer of local actors to the change processes and taking into account some that might contribute to a sustainable development. To do so and to analyze the social context in the heterogeneity of practices, in addition to deepen into the relations around them (agrarian practices) in a concrete community: Santa Cruz in the municipality of Chilapa, State of Guerrero, Mexico, the case study was based upon the qualitative method; three research techniques were applied: in-depth interviews, focus-groups and participant field observation between 2007 and 2008.

The study considers peasants and their household-family¹ groups as the central local actors, because of their incidence level in decision-making and their active participation in agrarian practices, which, on their own, are related to natural resources. The peasant incidence on their subsistence is not, however, autonomous or alien to the hegemonic social and economic structures the action is subjected to, so our analysis sees heterogeneity as the response to those superior levels of the production processes. It turns interesting to underscore the relations generated between the structuring factors and the local agrarian practices, without overlapping one upon the other or developing subaltern categories. Thus, the context of globalization is considered a dynamic, complex process of economic, political and socio-cultural interactions between different actors, agencies, sectors and international and local levels, whose ideas, merchandise and people circulate according to technological innovations to permit the flows (Held and McGrew, 2000). This way and without reaching the agrarian styles, this article analyzes the agrarian practices as answers or strategies; in them we approach the complexity as a dynamic phenomenon that appears in the type of cultivation, the agricultural and social practices, the relations between productive agents, agricultural products and supplies.

¹ For this study the term peasant(s) refers to the group of people who practice agricultural activities as one of their subsistence strategies, which may be or not the main source of incomes for their households and the social reproduction of the family. The household is the vital space where familial relations are born to make a living; it is important to underscore that these relations between the members are generally hierarchical and asymmetrical, according to gender and the age of each of them (Vizcarra, 2002).

Agrarian practices and their conceptual restrictions

Post-structuralism states that modernity is not new and the current globalization is merely the expression of its radicalization and universalization. Moreover, it considers that hybrid, local, mutant alternative or multiple modernities have appeared as forms to resist absorption and assimilation into global processes, discriminatory and excluding; it is characterized by the theoretical knowledge that is produced from self-reflexivity on the processes of moving local life from its context (de-contextualization), hence, its proposal is directed to the need to relocate local life in the place. This stance tries to explain how society is created in the language, significations and representations, that is why it analyzes upon who and how knowledge is produced, because to a good extent reality is thus produced; its relevant actors are the local communities, new social movements, NGO's and every knowledge producer (Escobar, 2002).

As for development, two scenarios of change are proposed: the first is to deepen the neoliberal model in a broad sense, beyond the economic reasoning; the second is that of multiple modernities, where the prevailing development is still resisted or negotiated in the communities to make it something different. The methodological challenge implies learning to reinterpret conventional development and read the quotidian practice in order to reconstruct the local and regional, and to rethink development (Escobar, 2002). It is about approaching and understanding peasant reality with its multiple relations and interrelations that generate strategies according to its endogenous and exogenous conditions, as responses, resistances, or adaptability changes before the broad and global processes which seek a vertical hegemonic integration; these strategies are expressed in agrarian practices (Gerritsen, 2004).

The concept of strategy is framed into a vision of development that differs from the conventional, where the local becomes relevant as it generates alternatives for a broader community development and where there are two important ideas:

The first is that survival strategies become a complex whole, determined by the economic sphere, and also the social, political and cultural spheres. The second idea is that in different spheres and even with a certain degree of nonattachment of some family nucleuses from their communities, population reproduces, reinventing survival modalities and identity forms (Canabal, 2001: 26).

In the same way, agrarian practices consider the analysis of the basic patterns of peasant production as an organized flow of activities along time, taking into account two basic components to understand their complexity: the former which is centered on the actors (peasants); and the latter which considers the way the field tasks are carried out, paying attention to all the actors who interact, such as governmental agents, development promoters, private enterprises, intermediaries and other politically significant actors for local life. This implies recognizing the multiple realities and their diverse social practices; of their capacity to process local experiences and the wit to face hard conditions. Besides agricultural and livestock activities, we observe the relation local actors have with natural resources, mainly forestry, because interaction relations and processes of mutual and constant transformation are established. Since these relations are neither linear nor ahistorical, the diversity of agrarian practices, even in territories with similar agro-ecological characteristics, differ from one another through historic and social processes, indeed because of their relational character among local actors and those who incorporate them, from here heterogeneity. Certainly, Gerritsen (2002) notices that the continual and heterogeneous transformation of nature, agriculture, livestock and forestal plants favors a certain capacity for the appearance of new development schemas; nevertheless, in social relations there are power interests between groups in the same or different communities, which may establish determinate control mechanisms for each agrarian practice and benefit some over the others.

Indeed, Ploeg (2008) points out the need to observe nuances of sociopolitical dynamism in every practice, since social relations between productive agents and changes in the type of cultivation and agricultural practices generate social and political tensions at all the levels, above things when the productive dynamic transforms the use of land, management and control practices of the natural recourses.

Among the levels of conflict which call to attention, we find those that appear inside the households, between genders and generations, and communities, since arrangements agreed or not account for the survival strategies. These conflicts almost always go hand in hand with processes that make the existing social inequalities deepen; because of this it is important to take as a starting point the analysis of the ways that support decision-making in agrarian practices, as well as the relations that are weaved around them in broader and global contexts of the agricultural and labor markets. Following Long (1996: 53), there is “a pattern of multiple peasant answers as a product of the combined effects of globalization and localization, of local situations that change as they become part of global processes, at the time that global conditions acquire a meaning in relation to specific local conditions and through the discernment and strategies of local actors”. Because of this, communities are essentially heterogeneous in terms of the peasant strategies to face difficulties in production and other problems. Hence, understanding the practices of the peasants in managing natural resources and the way they perceive and face their relations with the environment and society implies considering aspects of heterogeneity, complexity and sociopolitical dynamic, both at the household and at the rural community (Gerritsen, 2002).

The global context and Chilapa, Guerrero

In Mexico, local populations somehow interact with globalization, either by the consumption of goods, mercantile interchange, influence of ideas, the flow of people, information and representations. In the agricultural aspect, interaction comes from other more regulated levels, such as international agreements, in the case North American Free Trade Agreement, NAFTA, signed in 1994, whose results for rural populations are questionable. For instance the annual average growth of the sector from 1982 to 2006 was 1.3%, and the 1994-2006 NAFTA period was 1.8%, even if the agro-alimentary trade of Mexico with the world increased in 12.3% on an annual average. This means that the agro-alimentary trade model does not foster the growth of the agrarian sector as a whole (García, 2007; Suárez and Polanco, 2007).

And in this toil of insertion into worldwide free trade which demands homogenization and productive specialization, it may be said that the peasants have been put to fight transnational agro-industrial monopolies, even if there are few concrete development options (Barkin, 2005; Canabal and Flores, 2004). This situation has negatively impacted on peasant communities, as poverty and international marginalization increase (Massieu *et al.*, 2005).

In this panorama, the neoliberal model based on fomenting commercial production and competitiveness has had to deal with some obstacles in the State of Guerrero. Firstly, because most of its rural population is poor and practices traditional agriculture (94% of the agricultural surface is seasonal, and livestock rearing is of the extensive kind) (INEGI, 1997), conditioned by its biophysical and socioeconomic environment.² Other part of the population, mainly urban, is closely related to national and international tourism in cities such as Taxco, Acapulco and Zihuatanejo, and the rest are employees in governmental and educational institutions and in other professional services; industry is minimal. There is no link between the different productive sectors, and the existing relation deepens the social and regional inequalities in the state, which as a matter of fact is located among the three states with a high marginalization degree, where 89% of its municipalities is highly and very highly marginalized (Conapo, 2000). It also has a “mid-high” Human Development Index (HDI), holding the 30th place in the country (out of 32 states) (PNUD, 2002). On his own, Bustamante (2005) affirms that in rural communities there are manifestations of poverty and forced migration linked to a generated environmental crisis, such as pollution and soil erosion, deforestation, water scarcity and pollution. And as in traditional peasant agriculture, the main cultivation is maize, which

² Most of the localities, 98.2% in 7,718 there are, has under 2500 inhabitants which according to INEGI (2000) are rural and with this criterion 42.4% of the state population is rural; however, if we particularize these localities, 87.53% of them has populations under 499 people, who only represent 18% of the total population. In contrast, only in 16 localities (0.2%) with 15000 people and more, 39% of the urban population is to be found. The city of Acapulco alone represents 19.8% and its municipality 23.44% of the inhabitants of the state (INEGI, 2000). According to the VII Agricultural Census, 91.3% of the surface accounted from the census is an ejido (INEGI, 1997).

is planted in differentiated surfaces depending on agrarian, topographic and socioeconomic conditions; in this case 74% of the producers sows in surfaces smaller than 3 ha, 16.4% from 3.1 to 5 ha, and only 9.6% on surfaces larger than 5 ha (Cervantes *et al.*, 2005).

The municipality of Chilapa de Álvarez is part of this reality. It is located in the central region of the state and it has agriculture as a main economic activity, it takes up 44.9% of the employed population (INEGI, 2000); it has an index of very high marginalization and its HDI is “medium low” (Conapo, 2000).

In the municipal head many of the offices of the federal and state governments are settled there, and the most important shopping places are also there. It has two established markets and the weekend “street market”, where all manner of agricultural, forestal and non-timber products are sold, as well as crafts from the communities. In this market concur local and regional sellers and buyers, and to a lesser extent people from Tixtla, Chilpancingo and Acapulco, as well as from the state of Morelos.

Agriculture is seasonal in 95% of the arable surface, and its main cultivation is grain maize (98.2% of the annual cultivations), followed by peanut, yam, bean, Mexican turnip, tomato and chickpea. The rest of the surface (5%) is irrigated (rivers and creeks) and vegetables and flowers are planted. Livestock rearing is extensive in crossbreed bovines, sheep, pigs and backyard fowl (Sagarpa, 2002). The agricultural activity makes the markets and street market dynamic at the weekend, wholesale and retail sale take place, and they are places where the peasants purchase their tools, medicines for their livestock, agricultural supplies, mainly agrochemicals to fight plagues and diseases, herbicides and seeds.³

³ Since in the last 15 years the institutional policies for the countryside do not consider technical assistance for traditional agriculture, agrochemical stores have grown in importance as technical advisors for peasants, at the time they promote and sell their products; thus establishing a reciprocal relation between both and giving a new commercial dynamism in the municipality. This aspect will be later approached.

Santa Cruz, the community under study

It is located 16 km northeast from Chilapa Municipal head and it is reached by the Chilapa-Ahuacotzingo road; due to its altitude, 1,280 m.a.s.l., has a temperate climate. It has a population of 375 people, of which 193 speak Nahuatl language; the inhabitants dwell in 70 households and 11 have a female head. Nine out of ten households have a dirt floor and no more than two have piped water, sewerage, toilet or W.C. (INEGI, 2005). A third part of the population is illiterate and its schooling average is 3.35 years (INEGI, 2005), the main productive activity is the agricultural with 74% of the employed population, of which 46.5% reported being unsalaried, and 26% receives up to one minimal wage (INEGI, 2000).

The local authority is represented by the municipal commissary⁴ (equivalent to municipal delegate) and the ejido council,⁵ both have a structure and functions regulated by the Law of Free Municipality (*Ley del Municipio Libre*) and the Agrarian Law (*Ley Agraria*), respectively; it has however an informal autochthonous structure composed of the “prominent”, the “commander” and his “soldiers”. The authorities in the ejido are appointed for three years and are the responsible for agrarian and productive issues and the access to natural resources; both instances make important decisions as an assembly and as a majority consensus.

Prior to the regulation of the ejido by the Program of Certification and Regulation of the Ejido (Programa de Certificación y Regulación del Ejido, PROCEDE) in 1994, the hierarchical structure to become a communal authority was rigid and was reached through a ladder of community services (soldiers, assistant, alternates, mayordomos), where the neighbors and children of ejido owners who were not recognized by the assembly could not take part. Because of this, PROCEDE is mentioned as an incidence factor in making the compulsoriness of community service flexible; nowadays, they face the dilemma of leaving things as they are —some do not seem

⁴ Organic Law of the Free Municipality of the State of Guerrero, art. 35.

⁵ The ejido council is composed of a president, a secretary and a treasurer, titular and alternates. The vigilance council is composed of a president, two secretaries, titular and alternates.

this right— or searching for innovative mechanisms to preserve, at least partially, the previous criteria to have a more responsible social perspective.⁶

[...] here it is bad, sometime we chat with some of my ejido-holder partners who are about the same age... about what we are going to do (Don Ciro B. 54 years, March 2008).

Other factors which have altered, to some extent, the functionality of local authorities were mentioned, such as Protestantism and migration; on the former they influence because of their attitudes in collective tasks. As it is expressed by the following opinion:

For example, if we are making a work the coming year and he is the assistant, he won't do it. In public work he will not do it. We do not see it right, because if we are doing a communal work, a work by everyone, for instance the road, we repaired it, and they don't want; roads, springs to be cleaned and they do not want (Don Ciro, 54 years, March 2007).

And the latter causes variability in attendance to assemblies (local authorities are not allowed to emigrate while on their charge).

Agrarian practices

In all sorts of peasant agriculture there is a close relation of natural resources and agrarian practices, where access is regulated by community agreements and, in the case of land, by federal government regularization programs. The administration of forestal resources and water falls on ejido authorities who, on their own, make decisions according to particular circumstances, generally in an assembly nevertheless. The use of the former in agrarian practices is mainly centered on the exploitation for fencing posts, pigsty construction, backyard pens, sticks for tomato cultivations and elaboration of tools for agricultural and livestock work and distillation of mescal.

The administration of land by ejido authorities is quite limited by the application of PROCEDURE and it is considered that there would be closer control in the aperture of new cultivation areas, since cases as the one presented below have appeared:

⁶ Data from the Basic File of the ejido (1999) show that the certification of plots promoted by PROCEDURE took place in 1994 with 134 ejido owners.

[...] here people seem to be serene, but no, there is much disorder. Because here there is always one who has a little plot near the mountain and in this plot they cut some trees down and they want to go beyond (they want to gain terrain) and start to cut... then later someone also arrives and also cuts down trees, they are two, then three, and from there... and just someone arrives and says, you have cut down trees, let me make a clearance, and (so) it goes; and then the vigilance council has to go and see (ejido commissary, 44 years, October 2007).

The practice of clearances had been common because of the population growth, configuring a negative relation between agricultural activity and forestal resources, as shown by data in table 1. Taking into account that the collective considers from the inception of the ejido (1954) that:

Yes; there were more woods, many oaks, teuixtle, cacahuite, dark oak... it was a very dense forest over there... [pointing at a hill with cultivations] (group interview, September 8th, 2007).

The close relation of productive activities with natural resources is inferred; in this case it is observed that the agricultural has increased twice as much against forestal surface, resulting in a perturbed forestal zone, with a consequential ecological impact.⁷ Conversely, more relevant in types of cultivations is chickpea which has been substituted by tomato.

Worth mentioning is the fact that nowadays peasants have ceased practicing the clearance of hills, as the exploitation of firewood (sale and exchange) has been subjected to regulation. Even if this regularization is implemented by governmental institutions, the peasants have adopted these measures with no resistance, considering advancement in environmental protection decision-making.

⁷ Perturbation is any event that occurs along time and breaks the structure of an ecosystem, moreover it changes resources, availability of substratum or physical environment. Perturbation in ecosystems is understood as every human action that reduces the suitability of organisms in the biosphere, and which may be caused from food production, demographic movement and growth, settlements and urbanization, search, acquisition and consumption of water and other natural resources, use and modification of soil, among other actions (Bolaños, 1990).

Among the measures that can be mentioned we find: the prohibition of extraction in spring areas, the definition of a conservation area and the reforestation of heavily perturbed areas with pine and maguey.

Many of these actions were a response to the effects of forestal degradation, mainly in the face of the dramatic diminution of water in creeks and springs; ecological awareness arose from the depletion of water (utilized in the household) from said systems and not so much from the clearance itself. The necessity to have water along the year fostered the making of communal decisions to build two rustic dykes which supply water to animals and complementary watering for tomato, under a strict schema of administration by the ejido authority so as not to waste it. At family level, small “roped” wells were dug, and also water is brought from higher places with hoses.

In the search for environmental alternatives, the socioeconomic ones were also considered, such as the construction of a community mescal factory to take advantage of the wild maguey, abundant in the region (which they already grow at small scale). In this way, groups of peasants work from February to May, obtain personal incomes and the community is funded for their celebrations from mescal sales.

In the process of anthropogenic perturbation,⁸ we see that livestock activity does not have an impact similar to agriculture because of its scarce presence in the peasant units and because of the mobilization they experience. It has been demonstrated that a serious problem of rearing livestock is that it does not allow the recovery of ecosystems; as plots for agriculture are opened and abandoned, the ecosystems do not recover because of the pressure put by livestock on these areas, what is more, it reflects on the populations of maguey in dry season (Quintanar, 2003).

The realization of agrarian productive practices is not a simple process, in them there are other sub-processes of a different nature (social, cultural

⁸ The ecological importance of the human factor has been evidenced by a growing number of studies which have demonstrated the existence of multiple impact forms. The negative human influence on ecosystems is called anthropogenic perturbation. In many cases the changes induced by direct or indirect human causes can affect the environmental quality, as well as the future management options (Bolaños, 1990).

and economic) that are interrelated with external factors, redefining the ways of peasant survival, where the phenomenon of migration has an important role.⁹ The different productive activities detailed below shape the agrarian structure and configure the agrarian practices of the community of Santa Cruz, which undoubtedly have been products of different transformation stages in agriculture and in the access, use and availability of forestal resources, which have propitiated diversification as a part of the peasant strategies.

Agriculture

In Santa Cruz diversified activities in space and time are carried out. In the first place, the population devotes circa half a year to work in seasonal agriculture, with cultivations such as maize, bean and calabaza, and uses traditional technology adapted to weather changes or economic needs, whose end is self-consumption and surplus sale in the same community. In the second place, with 30% of the producers, also seasonal with complementary irrigation, the relatively recent (1990) incorporation of tomato with “modern” technology, which is planted and harvested in differenced times and whose destination is the regional market; this “new” cultivation was started by the experience from migration to agricultural fields, combined with the initiative of a foreign producer to experiment with cultivations in ejido terrains in adequate conditions of slope and drain.

Previously, the residual humidity in soils was utilized in the months of October and November to grow chickpea, which was destined for self-consumption and local market; now, tomato has rapidly substituted it, mainly because the regional market has opened income alternatives for peasant households, and because of other not less important reason, chickpea has had a severe disease called “reddish” or “chahuistle” (generic autochthonous name for plant diseases), with cyclic outbreaks, which has contributed to generally discourage its growth, despite it is part of the traditional local food.

⁹ Temporary migration has taken place as of 1970 to Sinaloa, mainly; nowadays it is less intense and more diversified in destinations, among which are included the U.S. Temporary and national migration allows every six or seven months the return to agricultural activities, and therefore, to the participation in agrarian decision making.

One of the changes in the growth of tomato has been technologic, as the old agricultural practices have been left behind, such as preparation of land, plowing, hoeing, and weeding of the land, which make extensive use of family work force. In turn, tractors and herbicides become indispensable for the new cultivation; as a matter of fact, it has included in the lexicon of work processes “to seal the land”, to say that work force is no longer necessary in the land.

Almost all do this, they seal the land, they do not use the plow any more (Don Santos, 44 years, July, 2008).

These changes are not comparable whatsoever to innovation from tradition, despite they are not antonymous; certainly, change is necessary in peasant life, however the use of tractors and the application of herbicides or fertilizers do not come from observation-experimentation and generation of peasant knowledge. Nonetheless, the ways of appropriation of new techniques derived from broader economic systems with better technology recreate, indubitably, a process of learning as they are incorporated to their local knowledge (Chemoux, 1997).

On the other side, in relation to tomato, its introduction into agrarian practices in ejido lands started about 18 years ago. In the beginning, some producers introduced tomato in seasonal conditions in small plots; as a niche was promptly found in the regional market which transcend Chilapa, they were soon in the need to apply complementary watering in the last stage of development, they also started to have different times of sowing and harvesting to look for better prices.¹⁰ It may be said that the development of this cultivation has taken place based on the influence of factors both endogenous and exogenous, which as a whole have generated new social relations with other actors external to the community. As it is summarized below:

- Access to land. All the ejido owners have plots of 2.4 ha on average, some even have seven plots, with small surfaces of up to half a hectare. There are 96 peasant who have plots of up to 3 ha, 26 have from 3.1 to 5

¹⁰ It is important to mention that the price of tomato varies from one day to another, or in the same day, depending on the offer and demand.

ha and only 8 have surfaces larger than 5 without surpassing 10 ha. To grow tomato there are agreements to hire or lend the land on surfaces larger than their own.

-Availability of labor force in the same community; although there are temporary migration (about 20% of the population), there is work force to be hired in certain stages of tomato production, such as sowing, complementary watering and harvesting. For this last activity women are preferred. A day of work is paid from 80 to 90 MXN, without food, or else 70 MXN with food included. According to different producers, growing tomato has partially impacted on national migration.

-Capacity to associate with defined rules; the pre-established agreements of investment, land and labor force provision and revenue distribution has allowed better access to production factors (labor force, lands and capital), as well as technical advice. It is worth mentioning there are neither funding nor technical advice from institutions.

a) Association of peasants from the same community who provide investment capital or lands.

b) Agreements with migrants to the U.S., mainly relatives, who fund with remittances the growth of tomato.

My cousin went to work to the U.S., he was there for a while and with the bread he made, he returned, married and then decided, he has another brother there who helps him, there are two who live there, but one of them sends him money, he orders as a boss... to set a tomato orchard... kinda¹¹... that boy is getting it right (Don Ciro, 54 years, October 2007).

c) Association with sellers of chemical products from Chilapa, securing technical advice and supplies to grow tomato.

¹¹ The term is variable in time and place. Muñoz (1963) describes, referring to the municipality of Chilapa, that the owner provides the land, seed and half the cost of sowing; the sharecropper gives the rest and the harvest is equally divided. Whereas, Vásquez (1994) defines three modalities to produce “in halves” depending on the location of the plots (slopes) and quality of soils, however it is always the sharecropper the one who supplies the labor force in the whole process, varying the shares of the harvest. In this case, tomato producers present a new modality: the sharecropper is characterized by supplying money or agrochemicals, and the owner provides the land and labor force, revenues are equally shared.

[The ones who sell agrochemicals] they don't work, but give medicine, I mean one gives medicine, another works (focal group interview, September 2007).

d) Credits for chemical supplies in businesses in Chilapa.

We buy everything, the only who gives us credit is Eugenio [owner of a store of agrochemicals], not for so long, say eight days (Don Eleuterio, 30 years, September 2007)

- Internal agreements to manage and construct rustic infrastructure to store rainwater, which they use for complementary watering; this allows having different sowing seasons.
- Access to technical advice to sow and to fight plagues and diseases of tomato, through the sellers of agricultural supplies, heavily conditioned to reliable clients, loyal to the merchant.
- Access to information on price fluctuations from merchants in Chilapa regional market or from the sellers of agrochemical supplies in Chilapa who sometimes advise on the internet.
- Commercialization in the market and street market in Chilapa, where the best tomatoes are offered in wholesale to buyers from Acapulco, Chilpancingo and Tixtla, and to a lesser extent to local buyers from Morelos; the lower quality tomatoes are offered in retail to local merchants and other buyers. There are also cases where wholesale buyers arrive directly to the community to buy at better prices in mainly October and November.

Livestock

In the community one finds a backyard system of animal rearing (breeding of fowl, pigs, ox and goats) and also the system of extensive grazing (bovine and ovine livestock). They let their livestock freely graze in privately-owned forestal lands during rainy season; after harvesting, the animals are taken to the plots to use maize stover and then, in dry season, they kept the animals in an ejido plot with a shepherd and in the backyard or a pen at night.

There are no large-scaled livestock exploitations, only one person has 20 heads and three or four have from six to ten, the rest of the peasants (circa 90%) has one or two animals, with the purpose of carrying out agricultural tasks (mainly to sow) or to move products, firewood or water. Only four people produce cheese in rainy season for self-consumption and local sale, and about 20 people have goats from three to twenty animals. In this practice natural grass and other plants, such as sprouts and weeds, are utilized.

Although the relation of bovine livestock with agriculture has changed with the instruction of new technological elements in stages where plow was used, peasants make efforts to acquire work animals, and their relation with agriculture has provoked that before rainy season (April-May) certain commercialization dynamism is observed inside the community and with others as well.

Other modifications are referred to social relations (rather than economic) which they had with Coacoyul ejido, where until 2003 they moved their animals to leave them freely grazing in the rainy season in return of an economic share, which had a considerable increment, and the requirements were increased, such as personally present the livestock to the ejido council to account for it.

Almost everyone went, but later they stopped because we were charged more, at first we were charged 10 pesos per animal, but the offspring did not pay, but later they have been increasing, it goes from 100 to 200 pesos per animal (Don Cubertino B., 45 years, December 2007).

In the face of this, peasants were forced to think of something so as not to lose their small herd, which has been considered as a saving-investment practice¹², as exemplified:

My truck broke down when I was carrying firewood and I had no money to fix it, I had to ask my wife (a thousand pesos) because I knew she had sold some sows and she had money (Don Eugenio B., 43 years, May 2008).

¹² In the case of an emergency or family need, the animal represents a way to obtain resources fast in order to solve partially or completely their problems.

Initially a group of five people, and then the majority, decided to hire at a lower cost privately-owned forestal lands, which neighbored the ejido, and leave there the livestock freely grazing¹³ during rainy season. From this situation it is perceived how social cooperation bonds between ejidos which lasted generations, in views of reproducing a peasant “livestock” production system, were eroded and replaced by a more monetary relation. Notwithstanding, in turn, other sort of social, economic, and productive relations have been generated; in this case with the owners of the property. Likewise this situation strengthened internal processes of collective decisions, to such extent that they have tried to improve the cattle by means of bulls with better genetic quality.

We take care that mating happens with improved cattle, we do not like them to mate with other mongrel... here no mongrel bull is tolerated, if you agree you can bring them in... but the old and mongrel ones will be castrated, that's why we are letting you know. Spay it, if you want to bring your bull. If it has worked and you want to take it there, take it (Don Cubertino B., 45 years, December 2007).

Because of these decisions, in recent years livestock commercialization has become dynamic in the community with the presence of small livestock holders and peasants who go there to sell, buy or swap livestock. This flow of commercial dynamism is increased with the improvement of the livestock, which has permitted better prices and regional recognition.

[...] because they already come from Ahuacotzingo (adjacent municipality), they come to sell [...], in April they pay the most because they are going to use it (for the plow) (people from the focal group, September 2007).

In relation with technical advice, this comes from the veterinary merchants from the municipal head, who also they sell the product they recommend; to do so, relations of personal advice, or else by telephone, have been established and if necessary the veterinary visits livestock in the ejido

¹³ In 2007, all the peasants took their animals to this plot, and the valid fee was 250 MXN per animal. From this agreement the proprietor obtains incomes, fence reparation and also an annual supply of mescal produced by the farmers (sharecropping), using the wild magueys found in the property.

when required. These relations have grown strong concomitantly with the improvement of livestock, due to its higher sale value, however the peasants have also acquired new technical knowledge (vaccines, medicine dosages) for a better use and management of livestock resources.

[...] I also shoot them, and then I only go to see him (the veterinary merchant) and tell him I want my medicines, sell them to me, but I am going to prepare them, I only him I want them to be prepared (Don Cubertino B., 45 years, December 2007).

Petate production

A large part of peasant households produced petate in an artisanal manner, using as a raw material Soyate (Rock) Palm (*Brahea dulcis*) which exists in the ejido and the region. Despite being a natural resource of easy access, its production has not stopped being a marginal activity, the prices paid have always been low; truth is, it generates a fixed income that allows them to have a little cash at hand. Besides, it requires much work, at least two women are needed for two days to produce one petate; another may be that the size of the palm has decreased, for a palm of at least of 30-45 centimeters is need to be part of a petate.

Previously the production and sale of petates provided the families with important resources, nevertheless as both migration and the growth of tomato increased, it no longer was profitable for many households where men and women took part in elaborating and selling them.

Nowadays, only some women still produce petates in their free time, even so at a regional level this activity is still a relevant source of incomes for many an indigenous households, in spite of the intermediaries of this product.¹⁴

Moreover, as a part of the transformations of peasant rationality, this productive activity is currently perceived as non-profitable, thereby, scanty attractive, which has contributed to its abandonment. The women still engaged in this activity sometimes buy a roll of palm at 45 MXN, with which they make two petates which they sell in the community at 40

¹⁴ Tecoanapa is a Nahuatl community close to Santa Cruz, which virtually lives on this artisanal product, selling to intermediaries.

MXN each, and if they consider the cost of work, the profit is minimal, as they require at least two eight-hour days of work. The value of palm has increased because of the labor force necessary to cut it —recollection in the field— is scarcer by the day, and at the same time, once the petate is finished, they find competitive and reduced markets, as there is access to other products that substitute them and which are more comfortable such as beds and mattresses.

Almost no money is made; we only do it to work on something and to buy sugar, rice, salt... (ladies from Santa Cruz and Tecoaapa, May 2008).

In comparison with other communities close to Oaxaca, where the fabrication of palm lace¹⁵ is in charge of men and women of all ages as it is considered a secondary activity, for they weave while they look after the cattle, in meetings or at home, in Chilapa there is fierce competition in the regional market for this product. Because of the lack of profitability and given the offer of substitutes for petate, masculine population in Chilapa has lost interest in producing it, leaving it as a redoubt to women. However, the interviewed men who have stopped weaving palm justified their abandonment saying they are more interested in growing tomato.

Mescal production

In opposition to the detriment of petate production, production of mescal has been noticeably on the rise in the central region of the state; this region is recognized for its traditional production of mescal in rustic or artisanal distilleries.

Papalote maguey (*Agave cupreata*) is naturally reproduced in different sorts of soils and even in rough and rocky areas; in recent years however, it has been grown in plant nurseries with the participation of producers and support from federal and state programs. It is worth mentioning that the initiative came from local actors, who started to operate the project, and it later was retaken together with the governmental institutions.

¹⁵ In fact, the oldest female interviewees acknowledge that a lot of the palm they work with comes from Oaxaca.

In 1994 we started to make reforestation; we began producing in 1993 and in 1994 reforesting. Today we are near three thousand reforested hectares with papalote maguey. In the nurseries we make the pachole (cut the seed and germinate it). Then transplant it in the hills. We select the magueys here. Year after year we have been harvesting them (Don Albino T., 42 years, December 2007, Sanzekan Tinemi Organization).

With the boost from other communities in the region, in collaboration with Group of Environmental Education (Grupo de Educación Ambiental, GEA), an NGO, and institutional support from state and federal governments, Santa Cruz entered into the expansion and incursion of new markets. As a matter of fact, nowadays there are two mescal distilleries which carry out more careful processes in the selection of maguey and in the production of mescal through some modern equipment.¹⁶ Both distilleries are already undergoing certification, according to technical regulation by the Mexican Council of Certification of Mescal, with which they are working on the improvement of the facilities and on the process of production in views of increasing the quality and, thereby competitiveness in the market. Among other factors of health/innocuousness order, these distilleries have introduced into their processes an equipment to cook maguey, which will reduce the time in the oven from four days to only eight hours; the intention is also cut down on the use of firewood (oak) and promote the sustainable management of forestal resources.

Most of the production of these factories is delivered to the Sanzekan Tinemi organization,¹⁷ which, supported on state and federal programs, fosters the production project and its commercialization at national level. They run the corresponding quality analyses, put it in glass jars as it has been the tradition in artisanal or rustic fabrication, label it with the name of the

¹⁶ The two producers from Santa Cruz are immersed in this new process, as other producers from the zone, who in 2000 made the Association of Maguey and Mescal producers from Chilapa (AMMChi). Eighty-seven people in total are grouped and they produce some 40 thousand litters per season (Don Albino T., 42 years, December 2008).

¹⁷ This organization was created in 1990 as Societies of Social Solidarity, from the Community Council of Supplience of Chilapa, then they created areas of work in: production and commercialization, crafts, reforestation, management of natural resources and support to producers.

organization and the name of the Mescalero Master as well, then they store it in a cellar, recently inaugurated in its first stage in 2007. The collective aim is to preserve the local culture of mescal, as a commercialization strategy in a fiercely competitive market.

Some final considerations

In the face of globalization, where the circulation of capital, labor force, products and ideas are more influencing by the day in the social and economic regulation of peasant communities, the privatization and concentration of both economic resources and knowledge reinforce the stressed social inequalities, cause the appearance of rather original responses because of their adaptability and creativity as strategies of peasant social reproduction, as it was witnessed in this research. Even if this is a case study, the methodology we used to distinguish the agrarian practices which reconfigure a community allows showing that their diversification might contribute in the medium term to the wellbeing of the peasant households and also the environment which supplies the resources.

The study likewise underpins the strengthening of the idea that the diversification of market-oriented agrarian practices generates important incomes, which not only benefit the households but also involve the community and the region. Likewise, we observe that diversification brings innovation, technology transfer and market adaption along. Even though it was not the aim of this work, we can infer that the diversity of agrarian practices in Santa Cruz has generated job posts and income at local level.

Separately, this diversification has broadened the capability of people to recognize themselves as social actors; even if fair relationships are not necessarily created among the population, since in each practice there are power relations, asymmetries and hierarchies that can cause more inequalities between genders, households and communities, at least in a broader space of interpretation these problems become invisible in the valuing of the very survival strategies which manage to preserve traditional agricultural practices (maize) and they are combined with the new ones (tomato, mescal, including migration and other) and in the strengthening of some networks of producers from the incursion in new markets and access to institutional resources. It may be said, in a broader interpretation sense, that heterogeneity

allows to a certain point social cohesion, nevertheless its drawbacks are left to be discussed in an analysis of the micro-social.

Indeed, the social and economic relations established in each agrarian practice help reduce and share risks of entering new markets, however they do not always reduce the vulnerability of the household members, as the scarcely profitable and residual activities in the dynamic of change are still attributed to women. It is worth mentioning that similarly to many regions of the country, migration toward the U.S. is considered an essential part of the life projects of most young people; in fact, currently remittances are an indispensable resource to develop agrarian practices. Migration and remittances are also a vehicle to establish new relations with exogenous actors, somewhat facilitating innovation, adaptation and coexistence of agrarian practices. Finally, in order to learn the social differences inside and between the households, we would have to deepen into aspects that have to do with gender and age relations, bearing in mind the perspective of ethnicity and social mobility in the dynamic of the reconfigurations of peasant life and its agrarian practices, which allows defining agrarian styles.

Annex

Table 1
Agricultural and forestal transformations in Santa Cruz, Chilapa, Guerrero, reflected in the surface devoted to them

Period	Cultivations	Sup (ha)	Vegetation	Status	Sup (ha)
1954	maize-calabash, bean, chickpea	148.72	Oak, oak-pine Low deciduous forest	"conserved"	311.27
2007	maize-calabash, bean, tomato	313	Oak, oak-pine Low deciduous forest	perturbed	160.3

Source: fieldwork (2007), GEA (2006).

Bibliography

- Baños Ramírez, O. (2003), *Modernidad, imaginario e identidad rurales, el caso de Yucatán*, Mexico: Colegio de México, Centro de Estudios Sociológicos.
- Barkin, David (2005), “Hacia una comprensión de la nueva ruralidad”, in Massieu, T. *et al.*, *Los actores sociales frente al desarrollo rural*, tome 2, Mexico: AMER, Praxis, Conacyt, Gobierno de Zacatecas.
- Bolaños, Federico (1990), *El impacto biológico. Problema ambiental contemporáneo*, Mexico: Universidad Nacional Autónoma de México, Instituto de Ecología, Colección Posgrado 7.
- Bustamante, Tomás (2005), “El desarrollo rural de Guerrero debe hacer que el campo sea nuevamente opción de vida”, in Cervantes, Antonio and Tomás Bustamante [coords.], *Desarrollo rural en Guerrero, problemas y propuestas de cambio*, Mexico: SRA, Universidad Autónoma de Guerrero.
- Canabal, Beatriz [coord.] (2001), *Los caminos de la montaña, formas de reproducción social en la Montaña de Guerrero*, Mexico: Universidad Autónoma Metropolitana-Xochimilco, Centro de Investigaciones y Estudios Superiores en Antropología Social (CIESAS).
- Canabal, Beatriz and José Flores [coords.], (2004), *Montañeros. Actores sociales en la Montaña del estado de Guerrero*, Mexico: Universidad Autónoma Metropolitana-Xochimilco, Universidad Autónoma de Chihuahua.
- Cervantes, Antonio *et al.* (2005), *Estratificación de productores agropecuarios del estado de Guerrero*, Chilpancingo: SAGARPA, PRODUCE, Universidad Autónoma de Guerrero, Gobierno del Estado de Guerrero.
- Carpeta básica del Ejido de Santa Cruz, (1999), *Acta de posesión definitiva y deslinde de división de ejidos, relativa al poblado de Santa Cruz, Municipio de Chilapa, Estado de Guerrero*, Dated on February 12th 1952. RAN.
- Chemoux, Marie (1997), *Trabajo, técnicas y aprendizaje en el México indígena*, Mexico: Centro de Investigaciones y Estudios Superiores en Antropología Social (CIESAS), Casa Chata.
- Conapo (Consejo Nacional de la Población) (2000), “Marginación por entidad federativa”, in *Índice de marginación 2000*, Mexico.
- Escobar, Arturo (2002), “Globalización, desarrollo y modernidad”, in *Corporación Región, Planeación, participación y desarrollo*, Colombia: Organización de Estados Iberoamericanos.

- García, Rañó (2007), “Cultivando el campo tras 25 años de neoliberalismo”, in *La jornada del campo* (supplement), 18/12/2007, num. 3, Mexico.
- GEA (Grupo de Estudios Ambientales A.C.) (2006), *Listado florístico, caracterización de la vegetación y evaluación de la zona de reserva del Ejido de Santa Cruz, Municipio de Chilapa de Álvarez Guerrero*, final report, Mexico: COINBIO.
- Gerritsen, Peter (2004), *Estilos agrarios y la forestería comunitaria*, Mexico: Universidad de Guadalajara, Centro Universitario de la Costa Sur.
- Gerritsen, Peter (2002), *Diversity at stake. A farmers' perspective on biodiversity and conservation in Western Mexico*, Doctorate thesis, Wageningen Universiteit, Holland.
- Held, David and Anthony McGrew (2000), *The global transformations reader. An introduction to globalization debate*, Great Britain: Polity Press.
- INEGI (Instituto Nacional de Estadística, Geografía e Informática) (1997), *El sector agropecuario y forestal en el estado de Guerrero*, VII Censo Agropecuario, Aguascalientes, Mexico.
- INEGI (2000), *Tabulados básicos. XII Censo general de población y vivienda*. Aguascalientes, Mexico.
- INEGI (2005), *II Conteo general de población y vivienda*, Aguascalientes, Mexico.
- Long, Norman (1996), “Globalización y localización: nuevos retos para la investigación rural”, in Hubert Carton and Héctor Tejera [coords.], *La sociedad rural mexicana frente al nuevo milenio*, vol. 1, Mexico: Universidad Autónoma Metropolitana–Azcapotzalco, Universidad Nacional Autónoma de México, Instituto Nacional de Antropología e Historia, Plaza y Valdés.
- Massieu, Yolanda *et al.* [coords.](2005), “Manejo de los recursos naturales y tecnológicos en el marco de la globalización”, in *Los actores sociales frente al desarrollo rural*, Mexico: AMER, Conacyt, Gobierno de Zacatecas, Praxis.
- Muñoz, Maurilio (1963), *Mixteca – Nabua – Tlapaneca*, Memorias del Instituto Nacional Indigenista, vol. IX, Mexico.
- PNUD (United Nations Development Programme) (2002), *Índice de desarrollo municipal en México*, CD –ROM.

- Paredes, Myriam (2003), “Heterogeneidad social: ¿quiénes participan en las Escuelas de Campo? Estilos agrícolas de pequeños agricultores de Carchi y oportunidades de intervención respectivas”, in *Revista de Agroecología*, LEISA, Nune, vol. 19. Available at: <<http://www.leisa.info/in dex.php>>.
- Pérez, Edelmira (2001), “Repensando el desarrollo rural. Hacia una nueva visión de lo rural”, in Giarracca, Norma [comp.], *¿Una nueva ruralidad en América Latina?* Argentina: CLACSO, Agencia Sueca de Desarrollo Internacional.
- Ploeg, J. (2008), *Rural Development, challenges and interlinkages*. Available at: <<http://www.jandouwewanderploeg.com/in dex.php>> (February 18th 2008).
- Quintanar, Eduardo (2003), “Los sistemas de manejo de territorio en la ganadería campesina en la región centro montaña del estado de Guerrero, México”, doctorate thesis in Agro-ecology, Universidad de Córdoba, Spain.
- SAGARPA (Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación) (2002), *Año agrícola*, Delegación Guerrero, Mexico.
- Sánchez, Germán and Ma. Eugenia Martínez (2005), “El padrón de reproducción global: la integración de los estados del sureste mexicano”, in revista *El Cotidiano*, January — February, year/vol. 20, num. 129, Mexico: Universidad Autónoma Metropolitana, Azcapotzalco.
- Suarez, Víctor and Iván Polanco (2007), “Datos duros, saldos de las políticas neoliberales 1982 -2006”, in *La jornada del campo* (supplement), 18/12/2007, num. 3, Mexico.
- Vásquez, Sabás (1994), *Los sistemas de producción agropecuarias en la región de la Montaña de Guerrero: Los casos de las comunidades de Ocotitlán y Tamalacatzingo*, Master thesis, Mexico: CP-CEICADAR.
- Yúnez, Antonio and Fernando Bárcenas (2004), “The agriculture of Mexico after ten years of NAFTA implementation”, in *Documentos de Trabajo*, num. 277, Banco Central de Chile.
- Vizcarra, Ivonne (2002), *Entre el taco mazahua y el mundo. La comida de las relaciones de poder, resistencia e identidades*, Mexico: Universidad Autónoma del Estado de México, Gobierno del Estado de México.

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