Agroecological farming, climate change and migration in marginalized areas of Mexico

La agricultura agroecológica, cambio climático y migración en áreas marginadas de México

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ABSTRACT

Anthropogenic climate change, migration and agriculture are concepts intimately linked to each other and each one has effects on society as a whole, this document aims to elucidate the contribution of a paradigmatic change of subsistence agriculture for food production, in comparison with the incorporation of agroecological practices in agriculture in marginalized areas that can be friendlier to the environment and the conservation of natural resources, which allow greater opportunities for the rural population to settle. The proposal and results expressed in this document indicate the possibility of making a change in food production in areas that have historically been relegated and that the Government of Mexico has placed special interest in supporting, through the Production for Well-being Program. , implemented by the Ministry of Agriculture of Mexico and the National Institute of Forestry, Agricultural and Livestock Research, through the Technical Support Strategy in 11 production chains, which receive direct support, technical support and financing in production projects. Under the methodology of learning by doing and field schools as a method of knowledge transfer. To date, 2,200 field schools have been established, serving more than 450 municipalities in 27 states of the Mexican Republic, and 190 researchers, 1,139 technicians or professional service providers, and 7,000 young people participating in the program of Youth Building the Future.

Keywords: technical support, agroecological practices, field schools, migration.

RESUMO
Mudanças climáticas antropogênicas, migração e agricultura são conceitos intimamente ligados entre si e cada um tem efeitos na sociedade como um todo, este documento visa elucidar a contribuição de uma mudança paradigmática da agricultura de subsistência para a produção de alimentos, em comparação com a incorporação da agroecologia. práticas agrícolas em áreas marginalizadas que podem ser mais amigáveis ao meio ambiente e à conservação dos recursos naturais, que permitem maiores oportunidades de fixação da população rural. A proposta e os resultados expressos neste documento indicam a possibilidade de realizar uma mudança na produção de alimentos em áreas historicamente relegadas e que o Governo do México tem especial interesse em apoiar, por meio do Programa Produção para o Bem-Estar, implementado pelo Ministério da Agricultura do México e pelo Instituto Nacional de Pesquisas Florestais, Agropecuárias, por meio da Estratégia de Apoio Técnico em 11 cadeias produtivas, que recebem apoio direto, apoio técnico e financiamento em projetos produtivos. Sob a metodologia do aprender fazendo e as escolas do campo como método de transferência de conhecimento. Até o momento, foram estabelecidas 2.200 escolas de campo, atendendo mais de 450 municípios em 27 estados da República Mexicana, e 190 pesquisadores, 1.139 técnicos ou prestadores de serviços profissionais e 7.000 jovens participantes do programa Juventude Construindo o Futuro.

Palavras-chave: apoio técnico, práticas agroecológicas, escolas do campo, migração.

1 INTRODUCTION

Anthropogenic climate change is a recurring theme in academic and scientific publications, both in agricultural and environmental fields, as well as in the economic, social and political fields. This article seeks to address some of the consequences of climate change on the countryside and agricultural activities, within the framework of the Anthropocene. Likewise, the generalities of its consequences are mentioned and that it be taken as a basis for an analysis of peasant migration, in addition to offering viable alternatives locally, regionally and nationally to contribute to the mitigation of the phenomenon.

Climate change has been attributed to the increase and excess concentration of greenhouse gases in the atmosphere, among others. These are caused by human activity, from agriculture to industrial activities, have caused significant changes in the environment, which are manipulated by humans. It is worth mentioning one of the tests of the unsustainable dominance of humans over nature, as well as the UN (2019) reported that intensive agriculture, deforestation and the exploitation of resources have reduced flora and fauna by 20% worldwide (Serratus, 2020). In addition to this, the first two actions mentioned contribute to the release of greenhouse gases such as methane and nitrous oxide, which aggravate global warming and climate change.

Generally, climate change has been associated with a cluster of violent events, which can be “immediate in time, explosive and spectacular in space, and breaking out in instant sensational visibility” (Nixon, 2011, p. 02). However, it is difficult to deny that climate change goes beyond the

immediate manifest, but that the evidence of its existence is visible when counting years, decades or even centuries, which allows us to see the differences caused by humanity. to the nature.

The changes caused in the environment, that the scientific community is in a constant debate to name this new geological era as the Anthropocene. This geological era is characterized by a socio-natural relationship, where human activities have a growing and significant impact on the environment, which exceed natural processes to the detriment of nature (Arias Maldonado, 2020; Crutzen, 2006). Unlike natural or anthropogenic disasters, most of the impacts mentioned are not immediately perceptible, but over long periods of time. The debate has grown so much among theorists that the terms to designate the new geological era in which we live include the Capitalocene, to which climate change and the great transformation in nature are attributed to the capitalist system in which most countries are immersed, or Plantationocene "to designate the devastating transformation of farms, pastures and forests on a human scale into extractive and closed plantations […] The Plantationocene continues with increasing ferocity in the global production of industrialized meat, in the agribusiness of monoculture and in replacing multispecies forests" (Haraway, 2015). However, this debate exceeds the scope of this article and the term "Anthropocene" will be used, as it is currently the oldest and most widespread term.

Between natural disasters and anthropogenic disasters, Madan Kumar Jha, (2010) distinguishes the reasons for these terminologies by explaining that natural disasters are caused by natural forces or processes; while, anthropogenic disasters are the result of actions, mistakes or negligence on the part of humans. Natural disasters are classified into three categories: geological, hydro-meteorological and biological; Jha (2010) lists environmental disasters within technological disasters, which takes into account disasters due to engineering, transportation and poor infrastructure failures. Currently, some defenders of the environment have decided to change the terminology to "anthropogenic disasters"; that, returning to Jha, (2010), in the Anthropocene, most natural disasters have been aggravated by anthropogenic activities. The author cites UNESCO, and explains that, although there are risks, these are part of nature, have always existed and become disasters due to human action or inaction. Among these are those with immediate and visible consequences related to climate change, such as tropical cyclones, torrential rains and floods, to name a few that directly affect agriculture. However, it is recognized that climate change has wrought gradual havoc on some ecosystems, those that have been referred to as not instantly visible or violent. These have unfavorable consequences for crops, such as droughts, desertification, extreme variations in temperatures, alteration in the composition of the land, among others (Piguet, Pécoud, & De Guchteneire, Migration and Climate Change: An Overview, 2011; Arteaga & Burbano, 2018). According to the assessment reports of the Intergovernmental Panel of Experts on

Climate Change (IPCC, Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007), these The last few have been severe year after year as a result of the large scale of greenhouse gas emissions.

Although there is a record that 80% of carbon dioxide emissions from 1751 to the present are caused by rich countries (Serratos, 2020), the consequences of climate change affect countries unequally, regardless of who they are. issuing countries. Serratos (2020), assures that Latin America, Africa and the Middle East are highly susceptible to the dramatic effects of climate change despite being responsible, among the three regions, for barely 8% of carbon emissions.

The concern increases when analyzing who are the most affected within these regions. The FAO (2017) reports that the agricultural sectors of developing countries, including crops and livestock, fisheries, aquaculture and forestry, absorb 26% of the total damage and loss from climate-related disasters. Therefore, those people who live in and for the countryside are a part of the population, who experience and suffer to a greater extent the consequences of the gradual anthropogenic change in the climate and its variations, and these are reflected mainly in arid and semi-arid zones. , these impacts result in serious consequences for the farm and its workers, such as: changes in the hydrological cycle; increase in temperature; difficulty or inability to cultivate; and, soil erosion. These impacts are reflected in socioeconomic factors such as food insecurity, loss of crops, unemployment, decrease in economic income and even the internal or external migration of peasants (Arteaga & Burbano, 2018; Jiménez Cisneros & al., 2014). The latter, he has overlooked, is a topic that has gained strength in scientific research, since it has not been given more attention on international agendas. In this article mention is made of:

2 THE EFFECTS OF CLIMATE CHANGE ON MIGRATION

The Intergovernmental Panel on Climate Change (IPCC) recognized since the end of the 20th century that migration is among the most serious effects of climate change, since millions may be displaced by climatic events (IPCC, 1990), an idea reinforced in Economics. Climate Change (2007) by Nicolas Stern. Even since the 19th century, Ernst Georg Ravenstein, a German-American geographer – who established a theory of human migration that is current to date – emphasized the importance of environmental factors in migration. In 1889, Ravenstein mentioned that unattractive climatic conditions would produce migration flows (Piguet, Pécoud, & De Guchteneire, 2011). After two decades, the geographer Ellen Churchill Semple reported that the search for a land with better temperatures and in better conditions began to move people to contrasting territories to their place of origin.

Academically, there is a continuous debate that tries to explain whether or not environmental factors are the only reason to migrate, it has been mentioned that they cannot determine migration by themselves, they can decrease or increase the flow of migrants. To define a migration decision, a set of structural conditions are taken into account, including economic, political and social factors of a region (UNHCR, 2021; Baldwin, 2015; Hugo, 1996; García Sandoval, Aldape Ballesteros, & Alonso Esquivel, 2020). According to various investigations, migrants move voluntarily or forcibly due to a host of circumstances, ranging from "poverty, food insecurity, lack of job opportunities, limited access to social protection, depletion of natural resources and adverse repercussions of environmental degradation and climate change" (FAO O. d., 2016), Morales *et al.*, (2018), indicates in their study about migration in a region of the mountains of Guerrero in Mexico , that migration has its causes in inequality, the lack of opportunities in the place of origin and the effect of environmental phenomena, without attributing them to climate change, which causes cultural and economic uprooting from where they come from, indicated that this phenomenon Migratory has as its objective: to work in agricultural areas of northern Mexico, and it is not an individual migration but of the whole family. In addition to the above, there are now the phenomena that have to do with the presence of groups that work outside the Law in Latin American countries that can force the inhabitants of rural and peri-urban regions to abandon their properties.

According to the UNCHR (Piguet, 2008; UNHCR, 2021; UNHCR, 2017), the increase in the number of droughts and coupled with evaporation, these contribute to the decrease in soil moisture. This can significantly affect the productivity of the land for cultivation, resulting in food shortages, which will affect not only farmers and their families, but entire rural and urban populations. In addition, if the survival strategies have been exhausted by the farm workers, they may decide to emigrate internally or externally in the country, to obtain monetary resources and increase the well-being of the migrant and their families, whether they move with them or not. In this way, migration, beyond being an option, becomes a survival strategy.

Social research has historically recorded that in the American Continent there has been a relationship between low rainfall, droughts, desertification and migration (Munshi, 2003; Leighton, 2006; Miller, 2017). Coupled with limitations or opportunities in other parts of the country or beyond national borders. Others, such as Amartya Sen, the Nobel Prize in Economics, consider that migration is due to other factors, such as the result of political factors (Sen, 1981). Although environmental factors are not the main cause, it is essential to understand the role of the environment and its changes in migration dynamics, for the creation of programs and public policies and to understand the needs of each territory. The latter involves analyzing how and why people are vulnerable to climate change (Piguet, Pécoud, & De Guchteneire, Migration and Climate Change:

An Overview, 2011), and how different circumstances lead them to migrate. This is a priority and central issue for the economic and social development of countries like Mexico, with high vulnerability to global warming and with 20% of the rural population susceptible to its effects.

3 VULNERABLE CONDITION OF THE MIGRANT

The discourse of migration, whether due to environmental factors or not, is controversial, since on many occasions migrants are considered a threat to the economy, well-being, security and even the identity of the place where they arrive (Durand, La immigration as a threat in the United States, 2017), especially when migration is external. An example of these situations is the historical record of the migration of Mexicans to the United States and how this has been considered a matter of national security (Durand, 2006).

In addition to the aforementioned complications, migrant work without qualification or certification is "by definition, the hardest, most exhausting and worst paid on the labor scale" (Durand, 2006, p. 45). It is difficult for migrants to enter economic sectors other than agriculture. Evidence of this is that a large percentage of migrants come from rural areas in southern Mexico and currently depend on agricultural activities and natural resources (FAO, 2017; Olper, Falco, & Galleoti, 2018).

Migrants who arrive in a country without official documents find themselves in a constant condition of legal and social vulnerability. According to Gennaro Avallone (2018), the migrant lives in a condition of permanent uncertainty, inferiority and separation. Not only represented, but he is constantly seen as a foreigner with different customs, culture, ideas and language, to mention a few aspects.

While the migrant suffers from territorial uprooting, in his place of origin difficulties may arise from his absence, such as an intensification of work for permanent workers in the crops, monetary imbalance resulting from the hiring of more workers, abandonment or lack of maintenance of crops (Nava-Tablada, 2012). In this way, it can be established that migration affects both the migrant and those family members or workers that he leaves behind in his former territory.

4 ACTIONS FOR THE BENEFIT OF THE COUNTRYSIDE, LINKED TO THE MIGRATORY PHENOMENON

It is known that migrant compatriots in the States of the Northern Hemisphere contribute with a significant amount of remittances, which favors the amount of reserves for the Mexican state; however, this migration occurs in part due to the lack of opportunities for the countryside, insecurity in it, the effects of climate change; that the Government of Mexico has tried to avoid this

phenomenon, for which it has implemented various federal programs to prevent rural migration, providing opportunities to young people, one of these in the last three years has been the Technical Support Strategy and with This is the insertion of at least 7,000 young people from the "Youth Building the Future" program between the Labor and Social Welfare Secretariats and the Agriculture and Rural Development Secretariat, who are tutored by another similar number of producers in field work.

Taking into account that agriculture and rural development are central issues in global agendas and their responses to meet the challenges imposed by climate change (FAO, 2017). To understand the complexity of the causes and dynamics of migration, it allows experts to design and implement strategies or programs to guarantee efficient land management, the use of resources and the application of sustainable practices in crops. This is important to mention that, although the rural areas of Mexico are dedicated to the primary sector, they suffer the effects of climate change, just as agriculture is responsible for 15% of greenhouse gas emissions. Agriculture and climate change have become interdependent, making the countryside highly vulnerable to rapid and unfavorable changes.

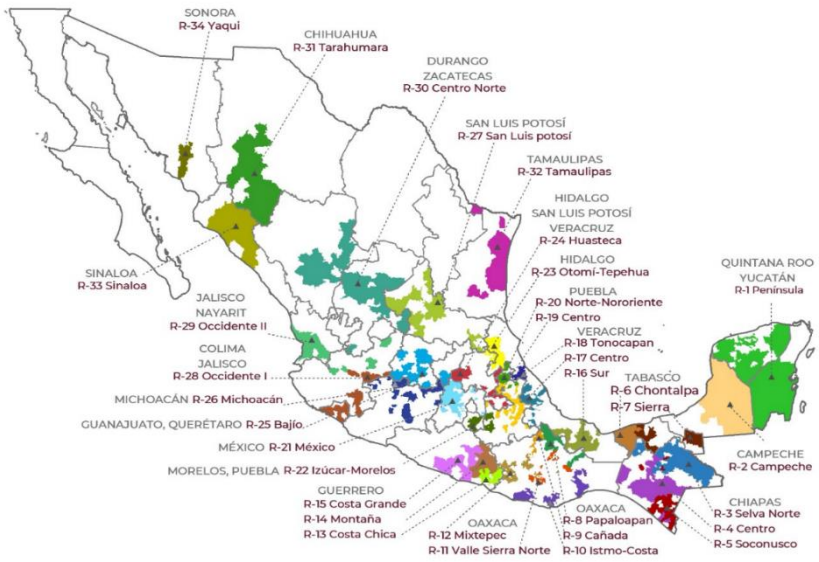
It has been widely discussed that in order to deal with climate change, it is necessary to apply policies at the national and international levels that encourage countries to reduce their greenhouse gas emissions, combat poverty and pandemic diseases, distribution of wealth and equity and promotion of democracy in all sectors of society, and in the agricultural sector the constant need to produce food for the growing population with respect for the environment make the challenge greater.

Due to the foregoing, the actions of the Ministry of Agriculture and Rural Development to achieve national Food Self-sufficiency through the Production for Well-being Program, which is focused on supporting and improving the quality of life of small producers, are recognized. The National Institute of Forestry, Agricultural and Livestock Research is added to this program through the Technical Support Strategy, which aims to achieve the agroecological transition. That seeks to replace agro-industrial inputs and switch to the application of organic inputs, to favor the production of healthy and nutritious food, while increasing resilience to climate change. The Production for Welfare Program (PpB) is part of the Food Self-sufficiency strategy; which is part of one of the 25 strategic programs promoted by the Federal Government. The general objective of PpB is "Increase productivity, mainly of basic grains, amaranth, chia, sugar cane, cocoa, coffee, honey, family dairy of small and medium-scale producers and its specific objective is: to provide liquidity, to the promotion of productive capitalization, through direct support, which can be complemented with strategic schemes of technical support and linkage with productive services, in crops, regions,

entities or specific localities. Its Target Population is “Small and medium-scale producers with properties registered in the Register, who preferably cultivate the crops and species described above, with surfaces of up to 20 hectares in rainfed land and up to five hectares in irrigation”.

In the Technical Support Strategy, the approach is to recognize the producer/peasant as a productive subject, with rights and bearer of pertinent knowledge. This knowledge is shared and incorporated in the design of the new production system, which is complemented with sustainable scientific techniques and developments, so that the technicians and specialists make it available to and considered by the producers/peasants. The purpose is the integration and socialization of knowledge through the field schools, whose prioritization focuses on sustainable agriculture, prioritizing the field worker, seeking their personal and social well-being, through the Field Schools, (ECAS) discussed extensively by Morales and Galomo (2006); Cadena (2016), Morales and Vázquez (2016), among others; and the Knowledge and Innovation Exchange Modules (MICI) the historical memory of the producers is strengthened, knowledge dialogues are carried out, recovery of peasant knowledge, exchange of experiences, knowledge and innovation and skills are developed for decision making . The strategy has a presence in 34 territories defined by CENEVAL, distributed throughout 27 states of the Mexican Republic, and in 2021, it focused on Zea Mays L. corn crops; bean, Phaseolus vulgaris; rice, Oriza sativa, wheat, Triticum spp; chia, Salvia hispanica; amaranth, Amaranthus spp; sugarcane, Saccharum officinale; coffee, Coffea arabica; cocoa, Theobroma cacao; as well as beekeeping production, including Apis mellifera and Apis melipona; and in milk from family farms.

Figure 1. States of the Mexican Republic where the Technical Assistance Strategy is being worked on, to benefit producers from marginalized areas. Source: SADER 2021.



Through this Strategy, INIFAP is aligned with international agendas, although the main objective is food self-sufficiency and sustainability in agriculture, it also indirectly addresses Sustainable Development Goals, such as "Reduction of inequalities" and even "Decent work and economic growth". The latter is important, since through the agroecological transition a better management of the field is sought, which allows greater productivity. In this way, the welfare of the producers is sought through food security, while the crops benefit, so that the beneficiaries of this program continue to develop as small producers. Thus, INIFAP and Agriculture, through the Technical Support Strategy, can lessen the underlying causes of the migration of the inhabitants of rural areas while placing the farm worker at the center of their objectives.

After three years of implementing this Technical Support Strategy, in addition to the financing schemes for the producer and direct support to the field called Production for Well-being, 2,200 Field Schools have been established where producers exchange knowledge, seeds and technologies, are trained through trainers and/or facilitators, in a universe of producers that in the national territory this support program has benefited and served 65,000 producers in 2021, and 30,000 in 2020, Work is being carried out in 27 states of the Mexican Republic, 450 municipalities, In 34 territories With 1,139 technicians in the field and 7,000 young people building the future, which is a federal program to support young people of the Ministry of Labor and Social Welfare (STPS).

The integral vision in each field school and each productive chain does not only include the agroecological transition, but also some soil analysis studies to determine the amount of nutrients present in each field school, in addition to knowing the micro fauna of the soil, Likewise, samples of bio-inputs are analyzed, which are applied as part of a transition plan; in such a way that this impacts the quality of grain products, coffee, cocoa, chia, amaranth, milk and honey.

From the first year of work in the EAT and in all the regions, a diagnosis or base line was elaborated, to identify the current problems generated by the irrational use of agrochemicals, destruction of biodiversity, the socioeconomic aspect and the formation of communities and producers, as well as the support received in previous years, among others. To lead towards an agroecological transition, the actions were carried out, which were linked to one of the four axes of the technical support strategy, which were previously indicated; since, they were carrying out work in the field to implement agroecological practices linked (no actions of soil preparation and health or planting are mentioned) to nutrition (physical and foliar mixtures), phytosanitary management and monitoring of pests and diseases; that gave rise to the application of bio-inputs for soil management, phytosanitary management, plant resistance inducers and grain harvest, among others, in some ECAs. In this regard, bio-inputs are being produced for: 1. Plant nutrition: biols; leachate

from cattle, goat, and sheep manure; multiplication of mycorrhizae and nutrient-fixing bacteria: 2. Pest control (insects and fungi), plant extracts, production of beneficial microorganisms (example: *Metarrizhium* sp. and Beauveria sp); and, use of attractants with pheromones to control the armyworm, among others. These products are being applied in a timely manner to the crops and according to the availability of production in the biofactories. The innovative producers, with the support of the agroecological technicians, elaborated the different bio-inputs, such as: vermicompost, bovine compost, bovine manure and vermicompost leachate, manure and bocashi biols, for the nutrition of plants in the different crops. In the control of diseases, copper-based fungicides are made, such as bordales paste and bordales broth. In pest control, water-soluble plant extracts based on garlic, *Allium sativus*, chili, *Capsicum* spp; cinnamon, *Cinnamomun verum*, and neem, *Azadiracta indica*. The multiplication of fungus: *Metarrizhium anisopliae* y *Beauveria bassianna* under aseptic conditions, which develop easily in rice and with high relative humidity. Likewise, the fungus Trichoderma harzianum was multiplied in corn cob, which was applied as an antagonist of parasitic fungi of *Fusarium sp*., and *Rhizoctonia sp*., and others. *Bacillus subtilis* and *B. thurigiensis* bacteria were purchased commercially, for the control of soft-bodied insects in the larval stage (*Spodoptera frugiperda*, *S. exigua*); so that producers know and use these microorganisms for specific purposes.

In the National Laboratory of Remote Sensors of INIFAP located in Pabellón, Aguascalientes, Mexico, the knowledge of the information generated and interpretation of the climate in real time and its contribution to the decision-making of the actors for events or presence of abiotic factors were imparted. , such as high, medium or low temperatures, precipitation, drought and relative humidity, among others; in this case, the rain forecast with a probability of occurrence of 95% is prepared and sent to the states; same that has been accepted in the states and in decision-making for the production of crops and livestock. Likewise, it is being consulted as support and events occurring due to the presence of biotic factors or the presence of harmful pests.

For the agroecological transition in Grain. Technologies were developed for water harvesting and determination of contour lines in the furrow, to avoid loss of natural soil and water resources, as is the case in the Frailesca region in the state of Chiapas and in the North region of Guanajuato; For this reason, the techniques of level lines and subsoil or vertical rotation were developed to have water filtration. Sowings were carried out with high densities of plants per hectare, up to 50 thousand corn plants; In this context, the genetic materials of native maize contribute to sustainable production and the conservation and participatory improvement of producers. Also, cultural control of weeds, biological control of the fall armyworm, biological control of soil pests and root diseases and hermetic storage of production in metal silos were carried

out with producers from the work regions in the states of Chiapas, Guerrero and Oaxaca, as well as the use of other impact technologies. Light and sticky color traps were placed, as attractants and capture of harmful adult insects in the plots of producers in the regions of the states of Chiapas, Guerrero, Michoacán, Guanajuato and Oaxaca, among others. In some ECAs, improved native corn and bean seeds were taken, which were established in the plots of innovative producers in Chiapas, Guerrero and Oaxaca, so that the producers observe the importance of improved genetic materials and their importance to increase productivity.

In the cultivation of sugar cane. The mycorrhiza *Rhizobium sp*. was applied; and the *bacterium Azospirillum* sp. For the nutrition of tillering plants. Likewise, the control of the paint fly or spittlebug was carried out with the Beauveria and Metarrizhium fungi. Another action carried out is the sexual attractants (pheromones) for harmful insects. Also, the bio-input application test was carried out with a liquid application drone in the Izúcar de Matamoros region, Puebla. Face-to-face agroecological training with producers and technicians in the producing regions of Chiapas, Veracruz, Puebla and Jalisco are being adopted and impacting the communities. The production of bio-inputs, such as vermicompost, leachates, as well as the acquisition and application of mycorrhizae and bacteria for the nutrition of plants in the soil; also, some bacteria applied foliarly to control foliage pests**.**

For the cultivation of coffee. The teachings and capacities were in the field schools, about different topics such as: varieties, layout and renovation of coffee plantations, productive diversification, pruning, estimation and regulation of shade, with the purpose of strengthening good management practices, having a total of 107 attendees between technicians and producers with 67%. Carrying out regeneration and health management pruning of coffee plantations, to deal with phytosanitary problems caused by the orange rust fungus *Hemileia vaxtatrix*. Also, harvest estimates and harvest quality analysis were made. In the knowledge of the different varieties of coffee, the improved varieties of Oro Azteca and Talismán stand out, both are productive and with tolerance and resistance to orange rust and their fate. In addition, three regional plannings were carried out in the states of Veracruz, Puebla and Oaxaca for the elaboration of the Agroecological Transition Plan in ECA, which was attended by 83 technicians from the EAT.

The technical teams in the regions took more than 1,500 samples of the mountain soils and the soils of the plots of the innovative producers, to which the nutrient contents of organic matter and macro and microelements were determined. Likewise, the existing beneficial microorganisms were determined. These similar studies were done for the bio-inputs produced in the regions. The biodiversity of plants, soils and intercropped crops jointly make the practical knowledge and simplicity of the producers, who are rich in diversity and sustainable use. On the other hand, the

contour lines applied in the production system "Milpa Intercalated with Fruit Trees" (MIAF), this system is widely documented in Cadena et al., 2018; Cortes, et al., 2005a; Cortes et al., 2005b; Cortés et al., 2010, in the states of Chiapas, Veracruz and Yucatán, so this technology has been adopted by producers in the producing regions of these states, since they have seen an additional resource to their family economy, in addition The fruit tree of temperate or tropical climate represents the economic engine of the system, while the satisfiers of the producers continue to be produced.

5 CONCLUSIONS

Although the phenomenon described in the forewords of this document are not enough to stop the effects of climate change and the migration of rural inhabitants in all the segments that comprise it, it is shown that the Technical Support Strategy (EAT) of the Program of Production for Welfare (PPB) promoted by the Undersecretary of Food Self-sufficiency and through the General Directorate of Organization of Production, has positioned itself among the poorest producers, motivated by generating their own sustainable and safe food, as well as such as the development of capacities to produce their own inputs at low cost and improved profitability. The organization in the territory has been favored to increase the number of beneficiary producers, through the organized assemblies of the producers; likewise, the social technicians are fundamental in the organization and territories. Since, they were increased by the register of, in addition to the incorporation of new producers in the registers of each production chain. This is fundamental in the EATs of the PPB, which is why the registers of producers of the agri-food chains addressed and the others requested by the producers of cocoa, chia, amaranth, honey and milk must continue to be improved. Un since, the important purpose is to benefit the poorest and most abandoned producers dedicated to the production of sustainable food. The agroecological transition suggested in the different agrifood chains: corn, wheat for bread, beans, rice, milpa, coffee and sugar cane. For this reason, agroecological technologies will continue to be promoted, as well as teaching producers to select their native seeds, elaboration of or local, elaborate their bio-inputs and application in a timely, profitable and effective manner in their fields selected by the Field Schools under the "learn by doing" scheme. With the sum of these comprehensive actions, between the institutions of the Government of Mexico, producers and Non-Governmental Organizations, food self-sufficiency is sought first, improving and opening job opportunities for young people and producers, in such a way that substantially reduce migration and the local, regional impact of climatic events caused in part by the use of agro-industrial inputs in agricultural production for local consumption.

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