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STRATEGY FOR THE INCLUSION OF SMALL AND MEDIUM-SIZED AVOCADO (*Persea americana* Mill) PRODUCERS IN DYNAMIC MARKETS AS A RESULT OF PHYTOSANITARY LEGAL CONTROLS FOR FRUIT TRANSPORT IN MICHOACAN, MEXICO

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The avocado (*Persea Americana* Mill) producing region of Mexico has been characterized by notable advances in regional development. Access to local and international markets and the productive specialization of the avocado value network, has allowed the incorporation of small and medium producers in processes of institution building incorporating the vision of social sectors.

The avocado band extends approximately to a surface of 65,607 hectares with 11,400 producers, and has a set of conditions – climate, soil and water favorable for year round production as well as the active participation of diverse chain actors under a vision of sustainability – that allowed the transition of the production chain of the avocado into a cluster.

This work tries to show the existence of agricultural promotion policies which, in combination with participation of producer organizations supported by the Federal Government as part of a strategy of incorporation of the producers to the systems of organization and control. In the case of food safety, the results have been positive in that public and private actors define, apply and provide feedback on the measures from the local context but supported by obligatory legal classifications.

The success of small and medium producers in Mexico in accessing dynamic markets should be highlighted based on the development of key policies focused on fitosanitary controls and fruit transportation, considering a volume of mobilization of more than 1 million metric tons, which have a direct effect on supply and demand regulation in national and international consumer markets.

This work has had support of Regoverning Market's program (www.regoverningmarkets.org), to document the access to supermarkets of Mexican producers.

KEY WORDS: Producers, Local Committees, vegetable health, market, exports

LA ESTRATEGIA DE INCLUSIÓN DE PEQUEÑOS Y MEDIANOS PRODUCTORES DE AGUACATE (*Persea americana* Mill) EN LOS MERCADOS DINÁMICOS COMO RESULTADO DEL CONTROL LEGAL FITOSANITARIO DEL TRANSPORTE DE FRUTA EN MICHOACAN, MEXICO

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La región productora de aguacate (*Persea americana* Mill) en México se ha caracterizado por su notable avance en el desarrollo regional. El acceso a los mercados locales e internacionales y la especialización productiva de la red de valor en el aguacate, ha permitido la concertación e inclusión de los pequeños y medianos productores en los procesos de planeación y desarrollo institucional que incorpora la visión de los sectores sociales.

El conjunto de condiciones que posee la franja aguacatera se extiende a una superficie de 65,607 hectáreas con 11,400 productores aproximadamente, lo que permitió transformar la cadena de valor en un cluster. Los factores de clima, suelo y agua, han sido favorables para tener huertos en producción durante todo el año; además de la participación de diversos sectores productivos para construir un plan rector del aguacate con una visión sustentable en todas sus actividades.

El presente trabajo pretende demostrar la existencia de políticas de fomento agropecuario, donde se conjunta la participación de las organizaciones productoras propiciada por el Gobierno Federal, como parte de una estrategia de inclusión de los productores a los sistemas de organización y control. Tal es el caso del tema de la sanidad agroalimentaria, en el cual, los resultados han sido positivos en la medida que los actores sociales públicos y privados, definen, aplican y retroalimentan este tipo de acciones, planeadas desde el ámbito local pero que tienen respaldo en ordenamientos legales de carácter obligatorio.

Se destaca el éxito del acceso a mercados dinámicos de los productores pequeños y medianos en México, basado en la instrumentación de una medida de política, referida al control de acciones fitosanitarias y movilización de frutos, estimando un volumen de movilización de más de 1 millón de toneladas métricas; lo que implica un efecto directo en la regulación de la oferta y demanda en los mercados de consumo local e internacional.

Este trabajo ha tenido respaldo del programa de Regoverning Markets (www.regoverningmarkets.org), para documentar el acceso a supermercados de productores mexicanos.

PALABRAS CLAVE: aguacate, productores, junta local, sanidad, mercados.

1. - SITUATION FACING MEXICAN AVOCADO BEFORE IMPLEMENTATION OF THE STRATEGY TO CONTROL PRODUCT MOVEMENT

1.1 Production and trade difficulties of Mexican avocado

The avocado (*Persea americana* Miller) is native to Mexico, Central America and the northern regions of South America. The plant was introduced into other regions of the world up until the 19th Century, and its development and recognition like industry began with the commercial marketing that California and Florida did from 1932, then spreading to Chile, Brazil, South Africa and, more recently, Israel and Peru. Records showing the establishment of avocado crops in the State of Michoacan, Mexico, date back to 1950[1].

Michoacan is, by far, the principal Mexican and world producer of avocado. At present, 75% of production is destined for the local market, with the rest being exported to the world market, mainly the United States. Mexico is also the world's biggest consumer of avocados. As can be seen in table 1, small producers are responsible for most avocado production in the State of Michoacan.

Table 1. AVOCADO PRODUCERS PER SCALE OF PRODUCTION AREA

Type of producer	Scale of production area (Ha.)	Total production area (Ha.)	Percentage (%)
Small	0.5 to 10	37,396	57
Medium	10 to 30	22,962	35
Large	30 and above	5,249	8
	TOTAL	**65,607**	100

Source: Michoacan Avocado Commission, COMA, 2006.

In spite of a growth of 23,000 hectares in areas cultivated between 1970 and1975, profits were low and had limited prospects of improving, due to the fact that markets were not paying a competitive price to producers because of low quality standards and phytosanitary restrictions. This situation had a negative impact on the outlook and economic welfare of producers, who were affected by a severe crisis in market prices, receiving USD 0.10 cents per kilo while production costs stood at USD 0.40 cents[2].

The crisis in profitability persisted until the 1990s, which led some leading producers to organise among themselves with the sole aim of implementing phytosanitary controls, this in order to access local and national markets by improving quality standards. Producers also knew that by not fulfilling such phytosanitary requirements, the export market would remain closed to them, along with its potential to unshackle national prices, even though the North

[1] Zamora, 2001.
[2] Interviews with staff from the San Juan Nuevo VHLC. 2007.

American market had effectively closed its frontiers to Mexican avocado imports since 1912.

1.2 Organisation of the Avocado Production Chain

The producers' organisation came into existence under the shield of the Federal Law of Vegetable Safety in 1992. One of the strategic elements of this law was that producers would take part in the implementation of phytosanitary campaigns. Work undertaken to set up the local committees (VHLCs) began in the municipalities of Uruapan, Peribán, Salvador Escalante and Tancítaro with 60 producers, even though avocado was being cultivated in 8 municipal regions[3].

Michoacan has a number of avocado producer organisations: (a) the Michoacan Avocado Commission (COMA), which represents avocado producers; (b) the National Avocado Product System Committee (CONASIPRO), formed by the different economic links or agents in the avocado value chain; (c) 16 Vegetable Health Local Committees (VHLCs) representing municipal avocado producers, and; (d) three Agricultural Associations (Uruapan, Tancítaro and Salvador Escalante)[4], formed in accordance with the State Law of Agricultural Associations, which offers a space for producers to organise and deal with production and marketing issues.

Furthermore, the Vegetable Health State Committee (VHSC) is an organisational body formed by the agricultural producers belonging to the Vegetable Health Local Committees throughout the whole state. It is seen as a contributing organisation to the Agricultural, Livestock, Rural Development, Fishing and Food Ministry (SAGARPA, part of the federal government), as well as the Agricultural Development Ministry of the State Government (SEDAGRO), also acting as a coordinating body and/or operator of the phytosanitary campaigns and work programmes undertaken by the VHLCs.

For their part, the packaging firms are associated in different groups such as: (a) the Michoacan Avocado Packers and Traders Union (UDECAM); (b) the Peribán Avocado Packers Union (UEAP); (c) the Cooperative Society for Joint Sales (CUPANDA). All of these organisations group together 95 packaging companies that serve the national market, Central America and Europe[5].

The Michoacán Avocado Producers and Exporters Association (APEAM), is the most important organisation and groups together producers and exporters who have been certified by US authorities. It represents more than 4 thousand producers and 26 packaging companies working in the export area. This organisation was promoted and supported by government bodies to rally efforts by producers and packers exporting avocado to the US market. Membership of APEAM is a binding condition in order to be allowed to export to the US. In the APEAM producers are represented by their associations and the VHLCs. As

[3] Vegetable Health State Committee, VHSC, 2007
[4] Michoacana Avocado Commission, COMA, 2005.
[5] Michoacan Avocado Packers and Traders Union, UDECAM, 2006.

such, APEAM works not only as an instrument for coordinating avocado exports to the US, but also as a negotiations platform between producers and exporters in compliance with export policies and programmes.

1.3 Factors that Contribute to the Development of Vegetable Health Committees (Local and State)

In response to the market crisis affecting the avocado chain, and because of the interest to open the export market to the United States, from 1993 onwards the Vegetable Health State Committee (VHSC), with technical support from the Universidad Michoacana de San Nicolás de Hidalgo (UMSNH) and the Rural Development Districts[6], began phytosanitary sampling and analysis in the plantations. These efforts formed part of the coordination agreements agreed between the Federal and State Government in order to comply with the legislation outlined by the Federal Law of Vegetable Health[7].

Thanks to the technical work of the VHLCs, in 1995 a proposal was issued to allow the entrance of Mexican avocado into certain States of the USA. Three years later, in 1998, a final regulation was emitted so that producers in a limited number of municipalities could make their first deliveries to the northeast of the United States. Thanks to the healthy results of these initial undertakings by local committees in the municipalities of Uruapan, Peribán, Tancítaro and Salvador Escalante, the producers of these and other municipalities felt encouraged to join these organisations, and to date the committees group together more than 9.000 small and medium-sized producers[5].

Due to this inclusion strategy, VHLCs were strengthened, so becoming the most important organisations in the avocado plantation sector, due to their required participation in the issuing of phytosanitary certificates and legal permits for transporting the fruit from the plantations to the different national and international markets[8]. Another key factor for controlling avocado transport was the installation of phytosanitary control posts with police attendance, where producers and traders had to present the fruit transportation certificates issued by the local committees.

Essentially, in the mid 1990s an institutional mechanism was established in Michoacán in which a group of organisations at municipality level, run by mainly small and medium-size producers, were provided with the legal authority and power of inspection and legislative enforcement, in order to regulate avocado transport from the plantations to any of the final markets either in the country or abroad. This institutional framework gave producers significant power at negotiations level both with other agents involved in the avocado production

[6] The Rural Development Districts form the basis for federal territorial organisation and public administration, decentralised in Michoacan, which contributes towards strengthening regional and municipal supervision in the formulation and application of concurrent sustainable rural development programmes.
[7] Interview with engineer Cecilio Zamora Ramos, National Facilitator of the Avocado Production System. 2006.
[8] Sánchez, 2006.

chain, as well as state and federal authorities. Although said institutional mechanism was primarily built to deal with the challenges of avocado exports to the US, particularly regarding phytosanitary concerns, in reality it has had a visible effect over the whole avocado production chain and all of Michoacan's avocado markets.

2. - DESCRIPTION OF THE POLICY FOR AVOCADO TRANSPORT CONTROL

2.1 Legal framework of the Vegetable Health Committees (State and Local)

In the Federal Law on Vegetable Health published in 1994 –created in the fervour of structural adjustment policies, reduction in public infrastructure and liberalisation of the country's economy– the Federal Government issued guidelines on phytosanitary issues, bestowing on producers of the country's different agricultural products a greater degree of responsibility in the direction and implementation of vegetable health campaigns. The desired objective was to facilitate a reduction in the number of public employees, along with the size and fiscal cost of the bodies responsible for vegetable health in Mexico.

During this same year and following the signing of the North American Free Trade Agreement (NAFTA) between Canada, the US and México, a Binational Group was set up (México – USA) to deal with the issue of avocado exports. The main role of the Group was to show, via reliable technical evidence, that Mexican avocados were free of pests and disease from a quarantine perspective. As part of this process aiming to open up the US market, in 1996 the Federal Government established the first agreement with the State Government and the VHSC for coordinating the Countryside Alliance (*Alianza para el Campo*) programme[9], which included guidelines for phytosanitary improvement and resources allocated for running local committees. Concurrently, a producers' initiative led to the issuing of the Norma Oficial Mexicana (Official Mexican Standard) NOM-066-FITO-1995, in which phytosanitary requirements and specifications were established for the cultivation, harvesting, packaging and transport of avocados for both the export and national market[10].

2.2 Description and role of Vegetable Health Committees

The VHLCs are agricultural and forestry producers organisations that assist the Agricultural, Livestock, Rural Development, Fishing and Food Ministry (SAGARPA) in the development of phytosanitary measures[11]. As such, they are private-sector organisations of producers, encouraged and recognised by the law in order to provide a public service: i.e. ensuring vegetable health.

[9] The Countryside Alliance is the country's principal agricultural policy mechanism.
[10] Official Mexican Standard NOM-066-FITO-1995
[11] Federal Law of Vegetable Health, p. 3

In Michoacán, there are 26 VHLCs; 16 work in the State's avocado production zone, providing assistance to 23 municipal producers (see table 2). As such, these organisations are structured and operate at municipal level.

Table 2. LOCAL COMMITTEES FOR MUNICIPAL AVOCADO PRODUCERS

Name of local committee	Municipalities covered
1.- VHLC of Acuitzio and Villamadero.	Acuitzio and Villa Madero.
2.- VHLC Los Reyes Atapan.	Los Reyes.
3.- VHLC San Juan Nuevo Parangaricutiro.	San Juan Nuevo.
4.- VHLC General Francisco. J. Múgica.	Tinguindín, Cotija, Tangamandapio.
5.- VHLC Peribán de Ramos.	Peribán de Ramos.
6.- VHLC Salvador Escalante.	Salvador Escalante.
7.- VHLC San Andrés Corupo.	Ziracuaretiro.
8.- VHLC Ziracuaretiro.	Ziracuaretiro.
9.- VHLC Tacámbaro.	Tacámbaro.
10.- VHLC Tancítaro.	Tancítaro.
11.- VHLC Taretan.	Taretan
12.- VHLC Tingambato	Tingambato
13.- VHLC Ario de Rosales.	Ario de Rosales.
14.- VHLC Tingambato.	Tingambato.
15.- VHLC of East Michoacan	Susupuato, Juárez, Zitácuaro, Jungapeo, Tuxpan, Hidalgo.
16.- VHLC Turicato	Turicato.
TOTAL 16 COMMITTEES	**23 MUNICIPALITIES**

Source: SEDAGRO Vegetable Health Department, 2007.

Each one of the VHLCs that exist in Michoacan are formed by a producers board of directors, made up of a president, secretary, treasurer and three board members. The board is elected in a producers' assembly for a two-year period and there is a frequent turnover of board members. A place on the board is an unpaid honorary post; members are not viewed as public servants, as they do not undertake any job, post or commission within State or Federal Public Administration. As these are local organisations (at municipal level), there is significant knowledge, follow-up and social control of producers on the part of board members. The Committees also count on teams of professionals to provide members with assistance, as well as a manager and other employees responsible for administration. The Committees are funded via contributions from producers as payment for services received, as will be detailed further on.

At Michoacan State level, the VHLCs integrate and coordinate themselves within the Vegetable Health State Committee (VHSC), which in turn is dependant on the National Services of Animal and Plant Health, Quality and Food Safety (SENASICA), a decentralised body that is part of the SAGARPA ministry.

In short, this is an institutional mechanism that crosses the boundaries between public and private sectors, voicing the interests and capacities of both producers and government.

- San Juan Nuevo Vegetable Health Local Committee

To underline the role of the VHLCs a review was made of the San Juan Nuevo Local Committee. This was set up in 1994 with only 60 members, and although at the beginning the majority of producers did not appreciate the importance of the organization for fulfilling phytosanitary requirements, prominent local small producers received backing from municipal, state and federal authorities in order to consolidate and expand the initiative.

At present, the Committee includes the participation of 857 members, which means 100% of those producers with avocado plantations. At State level, it is estimated that 85% of avocado producers are now taking part in VHLCs.

2.3 Work plan of the Vegetable Health Committees (State and local)

According to the operational rules of the Countryside Alliance programme, the VHLCs present their work programme to the Vegetable Health State Committee for its approval and assignation of public funding. This programme should include a budget for activities such as the registry of plantations in a phytosanitary directory, sampling from plantations to detect possible pests requiring quarantine, the operation of internal verification points (phytosanitary inspection posts), training, information dissemination, as well as administration of the vegetable health programme.

The inspection posts play a key role, as their objective is to prevent the entrance of fruit contaminated by pests into areas declared pest-free, or the movement of avocados from plantations to packing centres or markets without the proper documentation issued by the VHLCs. The inspection posts include municipal police personnel to ensure that truck drivers present the correct transport documents. This also helps prevent robberies, by guaranteeing that the fruit is a legitimate cargo.

2.4 Communication between VHLCs and other organisations in the Avocado Production Sector

The VHSC works in coordination with organisations representing agents in the production systems of avocado, strawberries, guava, mango, lemon, corn and coconuts, among others. Campaigns carried out annually by the VHSC in Michoacan cover more than 236 thousand hectares, producing more than 1.95 million tons of fruit, vegetables and basic grains, with an estimated value of USD 8 million[5].

In the case of the avocado producing municipalities, the VHLCs have been greatly strengthened thanks to their capacity to capture economic resources and generate awareness regarding advantages of the organisations. Each local committee has two delegates from the APEAM (the association of producers and packers geared towards the US export market); these representatives take part in monthly meetings held by each VHLC, in order to inform producers and technicians of phytosanitary measures, market strategies and national and international avocado prices.

Thus, the VHLCs have an important capacity to monitor and assess crops in advance and study and analyse market tendencies, thanks to their close contact with packers and exporters, their relationship with the state producers' organisation (COMA), which in turn has significant market insight mechanisms, and their control over product transport or movement. Thanks to the above, and prior to negotiations regarding the sales price of avocados from producers to national or export traders, VHLC producers establish a referential base price in accordance to prevailing conditions in the national or export market. Consequently, traders need to adjust or standardise a minimum price for the producer, which may vary in accordance to fruit quality.

2.5 Funding sources for VHLC activities

VHLCs are funded via two mechanisms: contributions from producers in payment for a selection of services received from such organisations, and contributions from state and federal governments.

There are two types of contribution from producers:

(a) Health Certificate: In accordance to the Official Mexican Standard, each avocado plantation must possess a phytosanitary certificate issued by an authorised professional in avocado phytosanitary management. Each local committee in a general assembly of producers agrees on an annual fee to be paid per hectare. Possession of said certificate is essential in order for producers to request that the VHLC issues a COPREF (an official document verifying that the product meets phytosanitary regulations) or fruit transport permit. The COPREF is the document that must be presented in the internal inspection offices (or phytosanitary inspection posts) and the transport inspection posts located on the route between the plantations and packing installations.

(b) US Export Certification: The avocado export programme implies a certification process for each plantation, accredited by both the Mexican and US authorities. The local committee is responsible for undertaking inspection of plantations in order to carry out a check of technical aspects of production.

The Vegetable Health Programme promoted by both Federal and State governments includes the provision of economic support to cover two-thirds of phytosanitary campaign costs, so that producers themselves administer the resources; the rest is funded by the aforementioned fees system (SAGAR, 1999).

Operational procedures for assigning public funds to the VHSC is via the plan of work, which includes each VHLC's particular programme, then validated by SENASICA, the federal government body responsible for vegetable and animal health.

With the public and private sector funds obtained by the committees, a range of important tasks are carried out: crop estimates; technical assistance for quality improvement – particularly regarding phytosanitary aspects; pest and disease monitoring via a system of traps placed in the plantations; fruit samples; pre-certification by the VHSC; certification in accordance to the United States Department of Agriculture (USDA); plantation supervision every eight days, and; advice on the use of pesticides.

2.6 Success factors and challenges for VHLCs

The success of the VHLCs is the result of legislation and control of fruit transport within a phytosanitary context, consequently allowing product regulation, and avoiding saturation of the national and export markets. These organisations provide strategic information regarding market development with the objective that producers can defend crop prices when dealing with intermediaries.

The provision of technical services has been a determining factor in order to provide follow-up for the technological packages recommended for cultivation, which allows fruit quality to be standardised.

Furthermore, the VHSC has identified that challenges to be met include the self-financing of all VHLCs, and that their actual role should be broadened to include training services, auditing of Good Agricultural Practices (GAPs) and Good Manufacturing Practices (GMPs), certification of procedures in accordance with ISO 9001 quality standards, an increase in laboratory installations for virus-free plant propagation and biological pest control, food microbiology and general analysis; as well as strengthening and broadening the agro-food safety programme.

3. - RESULTS OBTAINED FROM FRUIT MOVEMENTS REGULATED BY VEGETABLE HEALTH COMMITTEES

3.1 Empowerment of Producers

The strategy of the VHLCs has been a definitive and successful factor for the inclusion of producers in trading procedures via the use of phytosanitary control procedures, so regulating product offer both for the domestic (75%) as well as export market (25%).

Moreover, the active and inclusive participation of small and medium producers in commercial processes and phytosanitary certification, combined with the growing demand for avocado in national and international markets, and the fruit's natural characteristics (able to stay hanging in the tree for more than two months once it has reached its physiological ripeness), has meant that producers are in an optimum position when it comes to negotiating with national or international buyers, and as regards improved market conditions.

According to the Michoacán Avocado Commission (COMA), 85% of small and medium producers are included in the VHLC certification and participation process. The remaining 15% either do not have a phytosanitary certificate, or transport their product via the cover of a registered plantation.

3.2 Opening up of International Markets for Mexican Avocado

Trade with the US since 1997 has provided another dimension to the production system, seeing that producers and exporters have identified new opportunity niches thanks to the comparative advantages that México has over other countries, due to its geographical proximity, growing demand and reduced logistical costs for avocado exports to the United States. Likewise, new export markets have been established and consolidated with Japan, Canada, Europe and Central America.

During the 2005-2006 period, a new export record to the US was set of more than 87 thousand metric tons. Thanks to the effective work undertaken by the VHLCs, as from 2007 Mexico may export avocados to the United States without any geographical or seasonal restrictions, and in spite of the systematic opposition and lobby by US producers and packaging firms, trying to restrict the entrance of Mexican avocados into their country.

3.3 Strengthening the Avocado Production Chain in México

Together with the opening up of international markets, campaigns have been developed promoting national consumption, which have positioned Mexico as the world's primary consumer of avocados with a *per capita* rate of 10 kilograms.

Thanks to the advanced organisational level of the chain, 39 thousand direct jobs have been created, along with 58 thousand indirect jobs, encouraging the permanency of the region's population, and attracting workers from other parts of the state and country with the offer of jobs. Annual production value has been estimated at USD 440 million, turning the avocado chain into one of the most important of its kind at State and national level.

To date, the State of Michoacan has 11,400 avocado producers, providing 88% of national production, estimated at 1 million and 40 thousand tons per annum, and making it the world's primary avocado producer.

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