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Artículos Científicos

Valoración del maíz como patrimonio natural por mujeres amas de casa

Valuation of Corn as a Natural Heritage by Women Housewives

Avaliação do milho como patrimônio natural de mulheres donas de casa

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Resumen

El maíz es patrimonio del pueblo de México, pues es un elemento identitario de su cultura y sociedad y es un ingrediente indispensable en la gastronomía mexicana. El objetivo de esta investigación fue conocer los valores y la sensibilidad al cambio de las dimensiones cultural, económica, salud y social del maíz. Se aplicó un cuestionario validado a 537 mujeres en mercados y supermercados de San Francisco de Campeche, México, para conocer su opinión sobre la importancia sociocultural, económica y alimentaria del maíz. Se encontró que los valores existentes en el uso y consumo del maíz muestran una mayor correlación con la edad. Las mujeres más jóvenes presentan una menor magnitud en las dimensiones evaluadas. Todas las generaciones, sin embargo, exhiben una intensidad alta a la sensibilidad al cambio. Esto representa una necesidad de educar respecto a la importancia de la agrobiodiversidad del maíz para su defensa como patrimonio natural.

Palabras clave: agrobiodiversidad, alimento funcional, gastronomía.

Abstract

Corn is the heritage of the Mexican people. It is an identity element of its culture and society and is an indispensable ingredient in its cuisine. The objective of this research was to know the values and sensitivity to change of the cultural, economic, health and social dimensions of corn. A validated questionnaire was applied to 537 women who buy their food to get their opinion on the socio-cultural, economic and food importance of corn. It was found that existing values in the use and consumption of corn show a greater correlation with age. Younger women have a lower magnitude in the dimensions of values evaluated. However, all generations exhibit a high intensity of sensitivity to change. This represents a need to educate about the importance of corn agrobiodiversity for its defense as heritage natural.

Keywords: agrobiodiversity, functional food, gastronomy.

Resumo

O milho é uma herança do povo do México, pois é um elemento de identidade de sua cultura e sociedade e é um ingrediente indispensável na gastronomia mexicana. O objetivo desta pesquisa foi conhecer os valores e a sensibilidade à mudança das dimensões cultural, econômica, sanitária e social do milho. Um questionário validado foi aplicado a 537 mulheres em mercados e supermercados em San Francisco de Campeche, México, para descobrir sua opinião sobre a importância sociocultural, econômica e alimentar do milho. Verificou-se que os valores existentes no uso e consumo de milho apresentam maior correlação com a idade. Mulheres mais jovens têm uma magnitude menor nas dimensões avaliadas. Todas as gerações, no entanto, exibem uma alta intensidade de sensibilidade à mudança. Isso representa uma necessidade de educar sobre a importância da agro-diversidade do milho para sua defesa como patrimônio natural.

Palavras-chave: agrodiversidade, comida funcional, gastronomia.

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Introduction

Food is a biopsychosocial process closely related to humans. It is certainly a complex phenomenon. Although the feeling of hunger originates on a physiological level, there are psychological elements that influence the selection of food, be it for its pleasant organoleptic properties, opportunity in relation to environmental conditions or affective memories, and satisfaction when it comes to to eat. The social component of food is verified through history, as the axis of social life and the basis for the cohesion of family and friendship groups that include social and cultural events (Reynoso, González and Salgado, 2007; Sánchez and Cortez, 2006). In this sense, despite the ethnic and geographic diversity, Mexican gastronomy contains as common elements throughout the territory the consumption of corn, beans, squash and chili, as well as the custom of preparing appetizers (Altieri, 2004; Brutus, 2007; Sánchez and Cortez, 2006; Sangerman, Acosta, Schwenstesius de Rindermann, Damián and Larqué 2010). Mexican gastronomic culture originated 2000 years before the arrival of the Spanish empire and was enriched through the centuries (D'Alessandro and González, 2017; Espinosa et al., 2003).



The sociocultural richness involved in Mexican gastronomy originated that it was proposed in 2002 to form part of the intangible cultural heritage of humanity and is protected by the United Nations Educational, Scientific and Cultural Organization (Unesco). In November 2010, the nomination was accepted and it was determined that Mexican gastronomy should be preserved and protected by all Mexicans, fundamentally by all levels of government as part of the country's cultural wealth, due to its original characteristics that may be in danger of disappearing and to face dangers such as competition from transnational chains, be they fast food or transgenics (Arellano and Arriaga, 2001; Brutus, 2007; Castro, 2005; Sánchez and Cortez, 2006). Therefore, the objective of this research work was to determine the values that housewives give to corn as an essential element of Mexican gastronomy, culture, economy and society. This to identify what are the motivations that would allow protecting and defending corn as Mexico's natural heritage.

Methodology

A type of cross-sectional observational study was used to assess corn as a natural heritage food. First, home interviews were carried out and then surveys carried out in five markets and 13 supermarkets to women housewives who frequent these spaces in the city of San Francisco de Campeche, Mexico. Initially, a questionnaire divided into two parts and four categories was designed. The first part dealt with existing values and the second with sensitivity to change in these values; each part was grouped into four categories of values: economic, cultural, social and (biological) health. Each category contained four items. Each item represented a value (with a total of 32 items). There were five response options against each value: Strongly agree (MA), Agree (A), Indifferent (or do not know) (I), Disagree (D) and Strongly disagree (MD). These options represented a Likert score scale (MA = +2, A = +1, I = 0, D = -1, MD = -2). The questionnaire was validated and was subsequently applied to a population of 537 women. The sense of the values was obtained by the sum of the values of the responses (S) provided and the intensity of the value was calculated by the sum of the square of the values (C) of the responses. As an example, the process of assigning numerical values is shown in Table 1.

Tabla 1. Ejemplo de asignación de puntaje de los ítems de una categoría

		MD	D	I	A	MA	S	C
1	Consumiría otras variedades de maíz (morado, rojo, azul) como alimento.	✓					-2	+4
2	Debe enseñarse a los niños y jóvenes sobre la importancia del maíz.			✓			0	0
3	Hay que promover los usos culturales (tradicionales) del maíz.				✓		+1	+1
4	Defendería al maíz como patrimonio de la humanidad.		✓				-1	+1
	Total						-2	+6

Fuente: Elaboración propia

Results

The sociodemographic data of the surveyed population are reported in Table 2 and Table 3. In them it can be seen that the range that concentrates the majority of the surveyed population is between 20 and 40 years old. In addition, secondary, high school, and undergraduate level of study were the most common.

Tabla 2. Distribución de las edades de las mujeres que contestaron el cuestionario

Grupo etario	Número (porcentaje)	Edad promedio
En los 20	161 (29.98 %)	27
En los 30	100 (18.62 %)	34
En los 40	148 (27.75 %)	46
En los 50	84 (15.64 %)	53
En los 60	43 (8.01 %)	66

Fuente: Elaboración propia

Tabla 3. Distribución del nivel de estudio de las mujeres entrevistadas

Grupo etario	Primaria	Secundaria	Preparatoria	Licenciatura	Postgrado
En los 20	0	13	67	81	0
En los 30	8	42	17	33	0
En los 40	17	67	34	29	2
En los 50	16	35	14	19	0
En los 60	8	12	16	6	1

Fuente: Elaboración propia

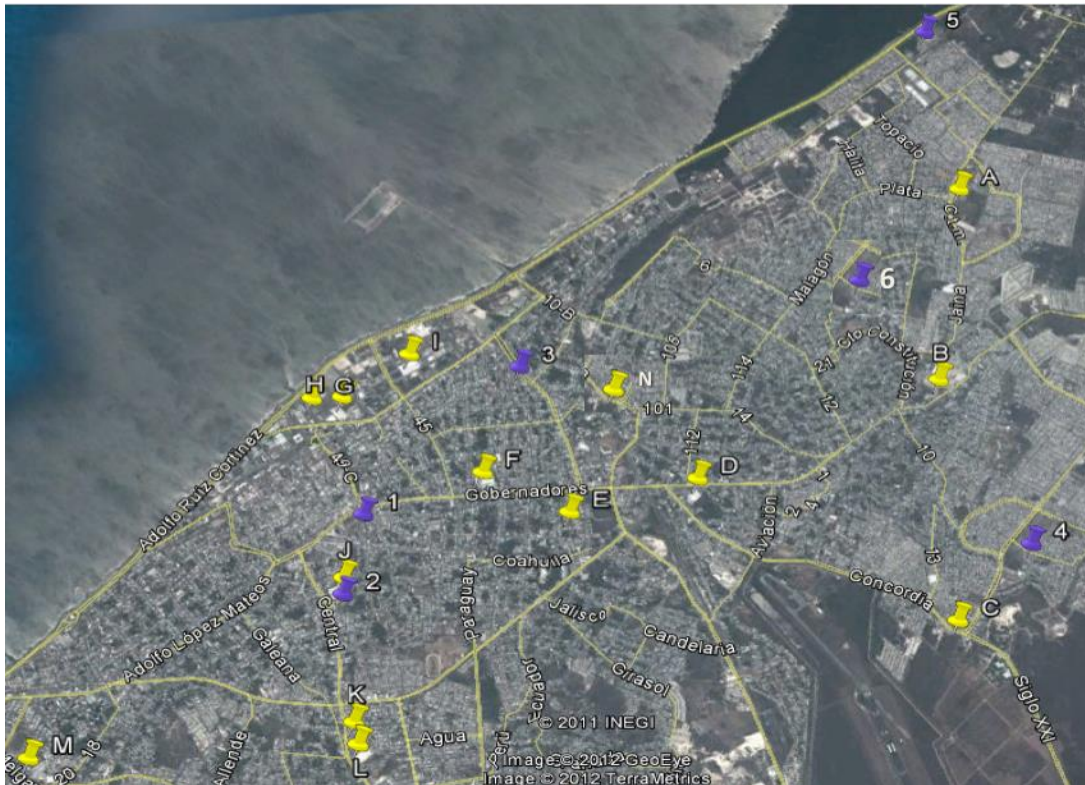
These interviews were carried out in places where food is purchased, that is, on site. The detailed description of the number of interviews carried out in each establishment and their location within the city is shown in Table 4 and Figure 1, respectively.

Tabla 4. Relación de mercados y supermercados donde se entrevistaron a las mujeres

	Mercado	#		Supermercado	#		Supermercado	#
1	Central	98	A	Soriana CTM	19	H	San Fco.	24
2	Ejidal	17	B	Chedraui E.	24	I	Walmart	18
3	San Fco.	49	C	Soriana Kala	21	J	Comercial	25
4	Concordia	26	D	Aurrera G	22	K	Express F	19
5	Fidel	28	E	Express C	15	L	Aurrera R	22
6	Morelos	21	F	Chedraui G	25	M	Soriana U	28
			G	SAMS	15	N	Aki Ría	21
	Total	239					Total	298

Fuente: Elaboración propia

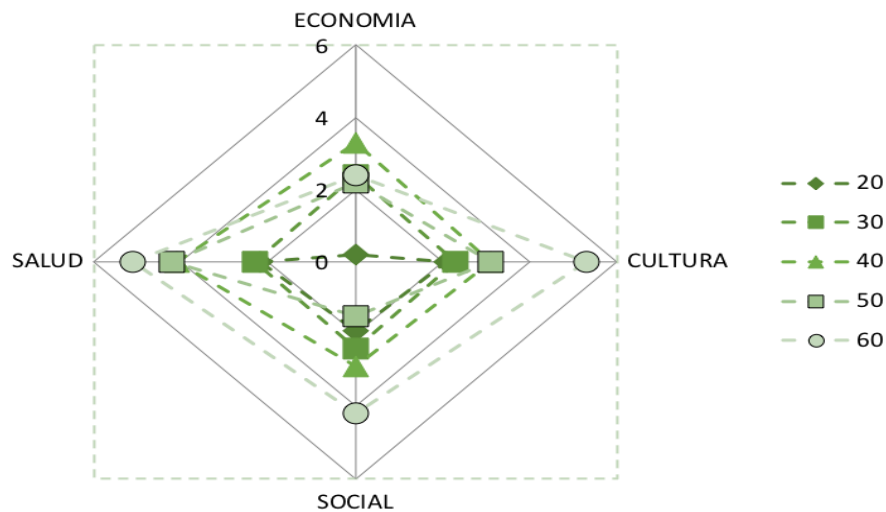
Figura 1. Mapa de la ciudad de Campeche que muestran los mercados (azul) y supermercados (amarillo) donde se realizaron las entrevistas



Fuente: Elaboración propia con base Google Maps

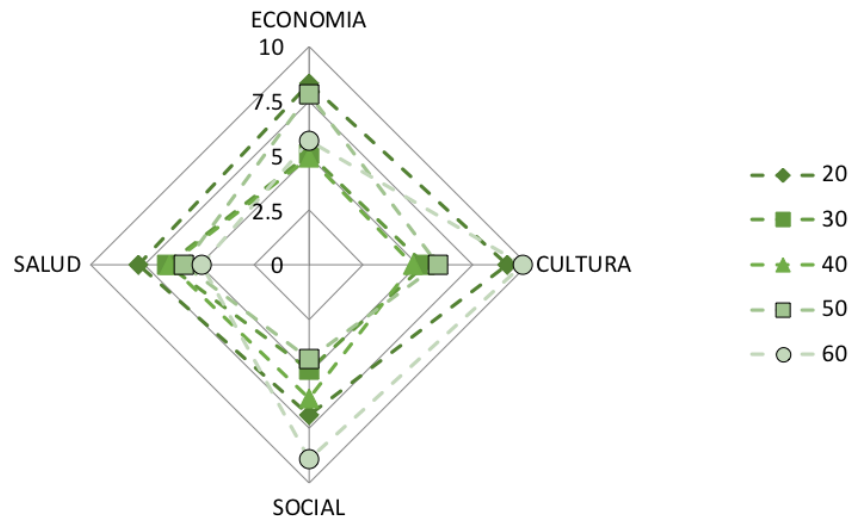
Figure 2 shows a similar trend in the different age groups that, in general, defines a marked deficiency in economic values and a substantive presence of cultural, social and health values, which are consolidated through the generations, is To say, that housewives, although they are concerned about the price of corn, do not consider it an important factor to stop consuming it and further ponder the identity of corn as Mexicans and consider it an indispensable element in gastronomy. Considering the entire universe of interviewees, it can be seen that the main concern and highest valuation is towards the health component, followed by the social and cultural components with a comparable magnitude; economic value was last.

Figura 2. Sentido de la valorización del maíz como patrimonio natural por mujeres



Fuente: Elaboración propia

Figura 3. Intensidad de la valorización del maíz por mujeres

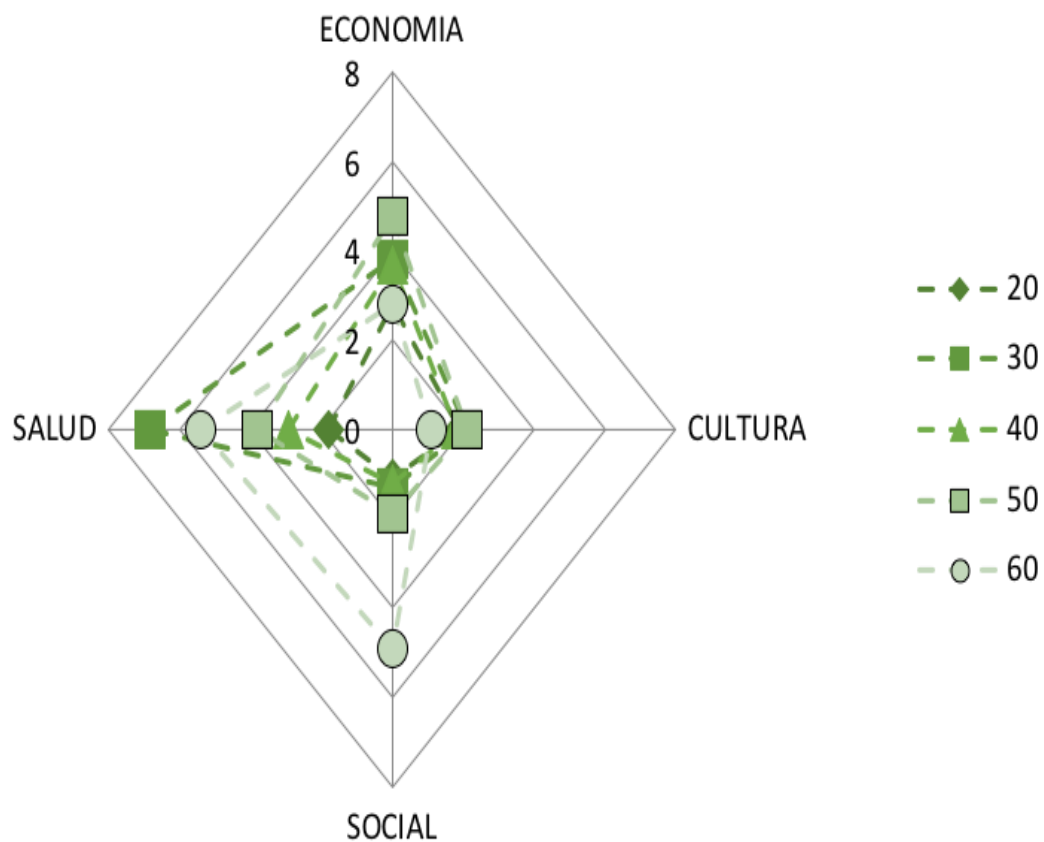


Fuente: Elaboración propia

When analyzing the intensity graph of the values in Figure 3, it can be contrasted that, despite the fact that the sense of health value stands out among the other factors and is weighted more positively than others, the intensity of the values is very similar in the four items in each generational group. In contrast, the data set obtained in all the groups seems to suggest that the health value is the one with the lowest intensity and the cultural, economic and social values have a higher intensity compared to the health value, but are similar to each

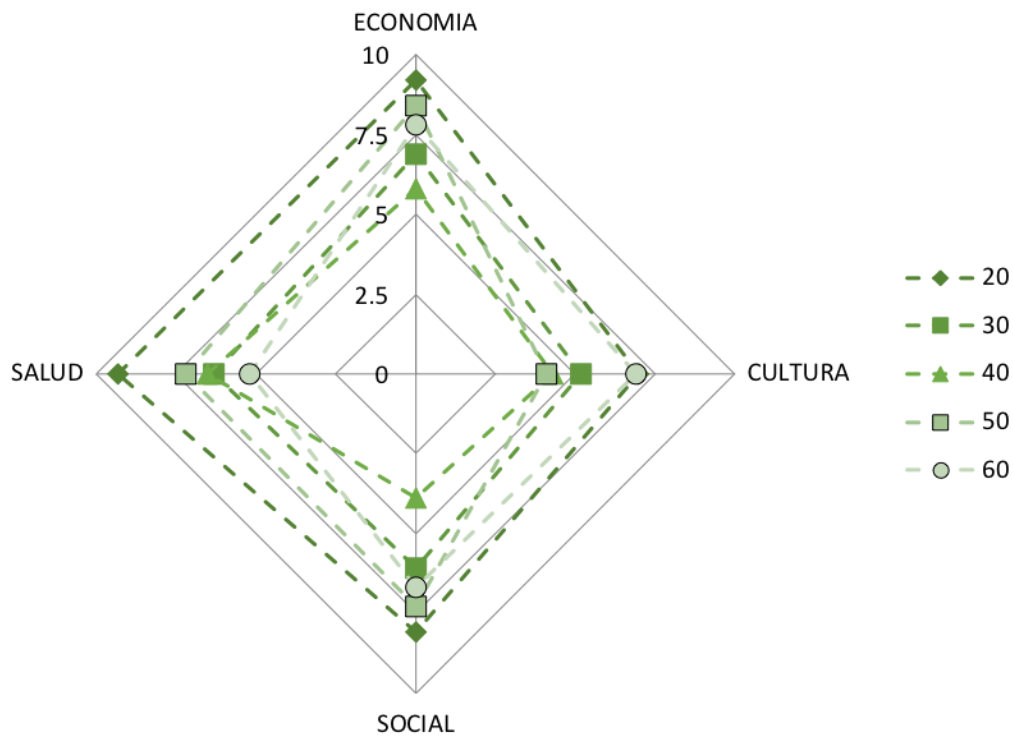
other, although there is a slight trend of greater intensity of cultural values. This graph also shows a greater uniformity of distributions that seems to group generations into two classes, although in reality such a group cannot be made due to heterogeneity in decisions. Thus, in health, the greatest intensity was found in those in their 20s; referring to the economy, those in the 20s and 50s indicated a higher intensity compared to the rest; the age groups of 20 and 60 years exhibited a greater magnitude by culture, and the sixties showed a greater weight of the social aspect. Likewise, Figures 4 and 5 represent the sense and intensity, respectively, of the sensitivity to change in the valuation of corn by female housewives.

Figura 4. Sentido de la sensibilidad de los valores al cambio del maíz como patrimonio



Fuente: Elaboración propia

Figura 5. Intensidad de la sensibilidad de los valores del maíz como patrimonio



Fuente: Elaboración propia

The results obtained show that there is a greater concern for the relationship of corn-based diet with health than with respect to other aspects as a point of improvement or of greater expectations and opportunities, even of greater magnitude than the economy; in fact, cultural values show the least force for change. On the other hand, the intensity of the values for the change shows a similar distribution among all the age groups, with a similar intensity among the four items, with a slightly higher tendency towards the sanitary aspect and a slightly lower intensity regarding the cultural aspect.

Discussion

For the valuation of corn as natural heritage, a social investigation was carried out based on similar methodologies to identify and rank values. Before preparing the surveys to recognize the general opinion and begin to locate the values presented in the female population, interviews were conducted in order to collect as much information as possible and avoid significant biases. The sustainability cycle is restarted once again by estimating the perception of the population and ranking and quantifying the existing values in relation to the use and consumption of corn as food and its sensitivity to the approach of corn as a natural heritage that positions it as a sustainable option. (Rodríguez, Chávez, Thomé and Miranda, 2017).

The results of the evaluation show a heterogeneity, especially regarding the economic aspect; women in their twenties, to name an example, registered a low assessment of it. Cultural and social values exhibit similar behavior among all age groups, although there is a greater emphasis in the sixties. And the behavior of health values shows an upward trend as age increases; Thus, women of 20 and 30 years of age are less interested in their health or health safety and the rest of the age groups show an increase in concern and interest in this aspect: as the years go by, the appearance is more frequent and probable and suffering from chronic degenerative diseases, cancer and other health problems that force us to be more aware. Younger people are more concerned with the aesthetic aspect related to food rather than the healthy one; for this reason, in their responses we note an interest in the high sugar content of corn associated with the belief that it is fattening, coupled with the ignorance of its medicinal properties, and they tend to consume light, low-calorie, healthy and comprehensive foods without discerning clearly between the meaning of each previous concept and less practically apply them (Fernández, Morales y Gálvez, 2013; Garza y Cantú, 2002).

Notwithstanding the foregoing, the analysis of the intensity of the values shows similar interests between the generations. This indicates that the absence of values recorded in the previous data is not due to an indifference to corn and sociocultural, economic and health problems; on the contrary, it is due to the coexistence of principles, values and positive ideas together with pessimism, disappointment, apathy or confusion that generates errors and ignorance. Contrary to what could be deduced from the previous analysis, the twenty-year-old women exhibited a very high intensity in all aspects: they had the highest intensity in the aspect of health and social values, the highest intensity along with women in their 50s in the



economic sphere and the second highest intensity equivalent to the intensity of the sexagenarians with respect to cultural values.

This suggests that the younger generations are not entirely lacking in values, but are in a process of definition or maturation. Since there is no indifference but nonconformity, this allows us to take advantage of the interest of younger women to train them and strengthen the defense of heritage and the promotion of health care. The education of this sector would make it become a more demanding and demanding public of better quality goods and services, in greater variety, with better offers, safe, reliable and worthy, which would become a strong political pressure to compel reconsideration. to decision makers and generate public policies, laws and actions for the benefit of the countryside and food security for all Mexicans and defend corn as a world heritage site and legacy of the people of Mexico (Olivé, 2009; Rodríguez et al. , 2017).

Identify corn as an achievement (in terms of domestication, conservation and diversification) of Mexicans, appreciate its variety and the benefits of agro-diversity in the Mexican countryside and contrast it with the dangers of the use of transgenics and hybrids, the risks and impacts to health, environment and biodiversity would guarantee the defense by the people of corn and other agricultural products. In this regard, it is convenient to comment that one of the arguments that was proposed to women was the phrase “Without corn there is no country”, the motto of one of the associations committed to the defense of Mexican corn, and contrary to the hypothesis that a degree of agreement (MA or A) with the phrase, a significant number of women, generally young women, commented that they disagreed (21%) or totally disagreed (9%) with it and others more showed indifference (16 %).

The frequent explanation for this was that there is also wheat and other cereals, in case the statement referred to corn as food; Others criticized the importance of corn as a non-essential food product or that can be substituted; some also said that if corn ran out the country would continue because society, the economy, technology does not depend on corn. These positions are really alarming and suggest an expedited intervention to counteract them, because contamination in the case of corn, very apart from the biological aspect, also includes contamination of ideas and consciences that provoke a reaction in the opposite direction and radically opposed to protection. of heritage and its conservation.

In order to know what strategies to follow or how to tackle the problem, it is useful to know what people expect or what values they are most sensitive to in order to set a starting point



and initiate comprehensive education and citizen action activities. In this case, women were more sensitive to health values, that is, they have a greater expectation of a better offer in aspects related to weight conservation, risk reduction due to microbiological or chemical contamination, as well as sympathizing with the idea that a food offers possibilities of prevention or treatment of diseases. People demand more and more healthy and safe food with the added value of improving their state of health, both for the supply of nutrients necessary for their development and maintenance and for the opportunity to improve their health by containing phytochemicals that benefit those who consume them (Fernández et al., 2013; Hernández, Serralde, Olguín, Meléndez and Amarante, 2011; Iglesias, Alegre, Salas and Egüez, 2018).

The economic dimension is the second one that represents an opportunity in the case of corn, since the sensitivity demonstrated by women to economic change is high. And finally, cultural and social values were placed. These results agree with the intensity analysis of the sensitivity of the values: a high intensity is observed in all dimensions. Likewise, the values obtained in the sense of their sensitivity allow us to suppose that, perhaps due to the sociodemographic conditions of the city, its inhabitants do not consider an important sociocultural change in their community nor do they detect any possibility of risk, except for the sexagenarias that consider that the aspect Social is just as high priority as the first two dimensions.

The results of the evaluation allow us to consider that the economic aspect must be adapted to guarantee the sustainability of corn and offer greater markets and opportunities in terms of fair trade in grain; also, the dimension of sanitary values makes viable the offer of corn as a functional food with health benefits for those who consume it; These two results would be the pillars of the proposal of corn as a sustainable functional food that guarantees the full defense of heritage.

Conclusion

The existing values in the use and consumption of corn in the city women of San Francisco de Campeche show a greater correlation with age. Although all the generations exhibit a high intensity to the sensitivity to change, the younger generations show a smaller magnitude in the dimensions of the evaluated values. This represents an urgency and a need to educate and re-educate the population regarding the importance of maize agro-diversity and promote its properties to implement its use as functional food and boost its adherence to projects for sustainable development and the defense of heritage.

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