

Development programs for female farmers: identifying clusters for the case of Chile's "Education and training program for rural women"

Programas de desarrollo dirigidos a agricultoras: identificando clústeres para el caso del programa "Formación y capacitación para mujeres campesinas" de Chile

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Originales: *Recepción*: 22/09/2016 - *Aceptación*: 24/10/2017

ABSTRACT

This article aims to contribute to the evaluation of development policies for female farmers based on their beneficiaries' attitudes. For this, it was conducted a survey in the Metropolitan Region of Santiago, Chile, to a representative sample of participants in the "Education and training program for rural women" of the Chilean National Institute for Agricultural Development. The questionnaire applied was divided into the following sections: i) personal characteristics of the farmers and their family unit; ii) technical, productive and commercial features; iii) farm and household income; and iv) vision of themselves and program-related attitudes. The data collected was processed by descriptive and multivariate techniques such as principal components and cluster analysis. The results show a positive assessment of the program on an aggregate level, although there are significant dissimilarities within the sample, allowing three clusters to be identified: "reticent participants" (42.3%), "associative participants" (20.5%) and "empowered participants" (37.2%). The farmers on those clusters present differences not only in their attitudes towards the program but also in their education level, income, farm profitability and balance between productive and domestic roles. It's concluded that individual characteristics and circumstances impact beneficiaries' perception of the programs, which should be considered in their design and implementation.

Keywords

female farmers • public policies • rural development • attitudes • clusters • Chile

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RESUMEN

Este artículo tiene como propósito contribuir a la evaluación de las políticas de desarrollo dirigidas a mujeres campesinas, considerando en este sentido las actitudes de sus propias beneficiarias. Para ello, se aplicó una encuesta en la Región Metropolitana de Santiago, Chile, a una muestra representativa de participantes del programa "Formación y Capacitación para mujeres campesinas" del Instituto Nacional de Desarrollo Agropecuario. El cuestionario utilizado se dividió en las siguientes secciones: i) características personales de las productoras y de sus unidades familiares; ii) rasgos técnicos, productivos y comerciales; iii) ingreso predial y familiar; y iv) visión respecto de ellas mismas; así como actitudes frente al programa. La información levantada se procesó mediante técnicas descriptivas y multivariantes, como componentes principales y análisis de conglomerados. Los resultados obtenidos muestran una valoración positiva del programa a nivel agregado, sin embargo con diferencias significativas entre las encuestadas, permitiendo identificar tres grupos: "participantes reticentes" (42,3%), "participantes asociativas" (20,5%) y "participantes empoderadas" (37,2%). Las agricultoras en cada grupo divergen no solo en sus actitudes respecto del programa, sino también en su nivel educacional, ingreso, rentabilidad de sus negocios y relación entre los roles productivo y doméstico. Se concluye que las características y circunstancias individuales impactan en la percepción que las beneficiarias tienen sobre los programas, lo que debe ser considerado en su diseño y ejecución.

Palabras clave

mujeres campesinas • políticas públicas • desarrollo rural • actitudes • clústeres • Chile

INTRODUCTION

An increase in the presence of females in the farming workforce and in land managerial positions is a phenomenon that has gained strength, particularly in small-scale farming (14, 36, 51).

However, there are limitations in access to resources that frequently result in production gaps between male and female farmers (2, 12, 20, 27, 39, 42) thereby making women's activities less attractive in terms of expansion (53). Meanwhile, a "traditional" labor division still prevails, in so far as women's participation in production tasks is frequently unpaid and invisible (11) and additionally, they spend many more hours than men in housework and childcare.

Despite these important boundaries for female farmers, for a long time rural development policies did not seek to address them (5). In fact, up until the 70s development programs, women were restricted to reproductive/domestic roles (40). Since the United Nations declared 1975-1985 the "Decade for Women", important progress has been made in terms of the incorporation of gender issues into development planning, which has produced two main standpoints: "Women in Development" (WID) and "Gender and Development" (GAD).

The first approach proposes the need to improve the situation of women by integrating them into development

initiatives, whereas the second defends the need to transform social structures that foster inequalities (46).

One of the main criticisms to the GAD approach is the difficulty of putting it into practice, which has meant that the WID approach has had greater significance regarding development initiatives (40); not only in low and middle income countries, but also in cases such as the European Union (43). Said initiatives have prioritized the satisfaction of Moser's (1989) "practical" gender needs, over those of "strategic" nature. This is despite the fact that the structural circumstances that restrict women's empowerment constitute an essential factor in lowering their entrepreneurial capacity and, consequently, their positive impact on rural development (9).

Since rural women face particular limitations associated with the social structures into which they are placed, not only is the quantitative impact of programs relevant, but also the dynamics by which those effects are generated, which might be related to subjective processes such as their progressive empowerment. From this point of view, a public policy and its beneficiaries are in constant and bidirectional interaction. Consequently, a complete assessment of a program should also include consideration of the individual responses to it.

The beneficiaries' attitudes can be assimilated to such specific responses, since they are defined as evaluative reactions with the potential to condition the individual's behavior (38). However, the recent literature that evaluates female farmers' support programs uses to narrow its focus to women's impact on variables such as productivity, income or land use (19, 26).

This proposed approach, of course, does not rule out the importance of an outcome evaluation, but rather complements it for a greater understanding of the programs. Although the analysis of attitudes is more common in consumer studies, it has been previously applied in the context of farmers' perceptions on diverse issues (8, 28, 29, 32, 33, 44, 45). Some of these researches have shown that farmers' attitudes diverge depending on their objective characteristics; which may imply a relationship between those two dimensions.

Considering this context, the objective of this paper is to evaluate rural development policy directed towards female farmers by identifying the attitudes of its beneficiaries. The hypothesis is that the perception about development programs of female farmers differs in accordance with their characteristics and situation, especially in relation to the relative importance of productive role.

For this, we will examine the case of Chile's "Education and training program for rural women".

In Chile, family farming is supported mainly by the governmental agency, the National Institute for Agricultural Development (Indap, due to its acronym being Spanish), which has a long history of work with small-scale producers (35). Of the twenty plus different programs offered by Indap, the "Education and Training Program for Rural Women" is the only one specifically focused on female farmers. It is carried out with additional support from the Foundation for the Promotion and Development of Women (Prodemu, due to its acronym being Spanish).

The program aims to help small-scale female farmers in operative units made up of ten women through training sessions on different subject areas: production

development, business management, organizational and sociability development, and personal development. In fact, the institutions in charge of the program explicitly state the importance of achieving significant progress not only in terms of the female farmers' economic situation, but also in their psycho-social development, implicitly recognizing that both are closely related. Over the course of the program which was initiated in 1992, it has attended to more than 20,000 women.

In addition to a deeper understanding of the specific case study, this paper aims to significantly contribute to the existing literature on gender issues in agricultural and rural development policy, while addressing the subject from a methodological approach unexplored in this area. So, besides contributing to the current literature, this paper will also constitute an innovative framework for further research.

Additionally, it will represent a highly constructive background for policymakers facilitating the conception of support strategies for female family farming, a segment that faces particular restrictions, and therefore is of special interest to the public sector.

MATERIALS AND METHODS

The data analyzed in this article was obtained from a survey conducted between the months of June and September 2013, among participants of the Indap-Prodemu "Education and training program for rural women" in Chile's Metropolitan Region. This Region concentrates 40% of the Chilean population, of which the majority is settled in the urban nucleus of the Gran Santiago.

The region is divided into 52 districts, and of them, only 18 are considered

rural. In contrast to this urban character, agricultural production in the Metropolitan Region is extremely important for the nation's supply.

The Region encompasses 26.5% of the Chilean total area for horticulture, 17.3% for fruit and 9.4% for vineyards (37).

However, the relative position of farming in the region has been seriously compromised throughout the last decades (mainly since the 80s) due to the expansion of the city of Santiago (22).

In fact, Santiago and its metropolitan area is the main economic center of Chile. In 2015 the region generated 45.6% of the national GDP (6). This economic power triggers pressure from non-agricultural activities on agriculture not only because of land use, but also on account of human resources. Two related situations are observed in the regional farms: aging and feminization of management (7).

Therefore, the choice of the Metropolitan Region as an area of study is due to an interest in a context in which there are continuous tensions that impact, *inter alia*, the changing role of women in farming. In addition, the Metropolitan Region has not been an area of frequent study for agricultural development research in Chile, which has instead been focused on the central and southern parts of the country.

The survey sample selection was carried out via a simple random sampling of finite populations -considering the total number of Metropolitan Region "Education and training program for rural women" participants in 2013- of 394 women. The result was 78 individuals (CI = 95%; e = 10%).

The questionnaire was divided into the following main sections: i) personal characteristics of the farmers and their family unit; ii) technical, productive and commercial features; iii) farm

and household income; and iv) vision of themselves and program-related attitudes. The answers to the last category were given in accordance with a 5-level Likert scale (in this case, 1: "completely disagree", 2: "disagree", 3: "indifferent", 4: "agree" and 5: "completely agree").

The information obtained from the survey was analyzed firstly by using descriptive statistics. This was followed by multivariate analysis techniques applied to the results obtained regarding farmers' attitudes.

In this sense, a principal components analysis was employed, which facilitates a reduction in information derived from inter-related variables (24). Previously Bartlett's sphericity test and the Kaiser-Meyer-Olkin (KMO) index were estimated in order to determine the sample adequacy (30).

The criteria used to select the number of factors were Kaiser's method, the determination based on the percentage of the variance, and lastly, the coherence of the variables within the chosen factors.

The internal consistency of said factors was measured using Cronbach's coefficient alpha. The factors were then interpreted in accordance with the rotated component matrix obtained through the Varimax process, from which the variance percentage explained by the variables of each factor was established.

Once the factors were established, a hierarchical cluster analysis was carried out, followed by a k-means cluster analysis, given that both can be used complementarily, first to define the number of clusters and then to group the consequent observations (30).

The procedure used for the hierarchical cluster analysis was Ward's technique which aims to form a hierarchy or tree-like structure per agglomeration (24).

The groups identified underwent a discriminant analysis in order to check whether there were significant differences observed between clusters. In order to evaluate the results two statistics were used: the canonical correlation and Wilks' lambda.

Finally, the segments obtained were characterized using descriptive statistics.

RESULTS AND DISCUSSION

Descriptive analysis of the sample

Firstly, the women who participated in the survey were between 19 and 81 years old, with an average age of 48 years. As already mentioned, the relative aging could be due, among other causes, to the incessant migration of young people from the country to the city. This proposition is supported by the case of central Chile as discussed in Castro (2012) and Valdés and Rebolledo (2015).

In addition, according to World Bank 2015 data, the Chilean rural population has experienced an average annual decrease of 0.8% in the last two decades, compared to an increase in the urban population of 1.5% per year during the same period.

Furthermore, the relatively high level of education of the women consulted stands out, given that 35.9% of them stated that they had finished high school. This number reaches 61.6% when the participants who declared that they had also studied higher education, even if they have not finished, are counted. These results contrast with data from the Chilean National Socio-Economic Survey (CASEN) for 2013, which show that in Chile only 32% of rural inhabitants declare that they have completed secondary education or higher, and 37.8% of the population have not even completed primary school.

The national situation is worse for individuals aged 60 or more and for the two lowest quintiles of income.

Regarding access to services, 79.5% of the women consulted claimed to have access to preschools in their area, 87.2% to elementary schools and 38.5% to secondary schools. Regarding health services, 52.6% of the women consulted said that they had access to the rural accident and emergency service, 41% to a doctor's surgery and 20.5% to the primary emergency service (SAPU).

Furthermore, 61.5% of the women consulted used community transport to travel locally and 32.1% did so by car. Only 6.4% of the women declared that they used non-motorized modes of transport such as bicycles or walking. This is of great relevance if we consider the possibility that *a priori* access to more efficient modes of transport leads to greater autonomy.

Meanwhile, 55.1% of the women consulted lived in their own house and 37.2% obtained it through family links. The women's family units were made up on average of 4 people, ranging from 12 members to women that live alone. There was a notable presence of elderly people within the family unit, considering that they represented 17% overall.

On the other hand, 25% of the members were under the age of 18, and 9% of them were under 6 years old. In terms of relationship status, 72.4% of the women consulted were either married (48.7%) or in a relationship (23.7%).

Regarding decision making, 53.8% of the women declared that they carried out this process together with their partner, whereas 28.2% did so alone. This is reflected in the positive relationship evidenced by Damisa & Yohanna (2007) between rural women's level of education and age and their level of participation

in the aforementioned process, even when they are not recognized as the "head of house". These authors highlight co-ownership of land as an essential factor in that sense, which is also supported by Wiig (2013) in the case of Perú.

When the women consulted were asked to declare the work status that best represents them, the majority (46.2%) answered "housewife", followed by 14.1% choosing "working", 6.4% "working and studying" and 15.4% "working sporadically". In this same sense, in order to find out how the women consulted organized their time, they were asked what activity they dedicated most of their day to, in first and second place.

Fifty-nine percent of the women consulted declared that housework was their primary activity, followed by 17.9% dedicating their time to the production unit. As a second option, 52.6% of the women indicated the production unit, followed by 22.4% declaring housework. In this sense, Fawaz & Soto (2012) provided evidence in the case of central Chile for the constant tension between productive and domestic roles for rural women despite advances in terms of their incorporation into the labor market.

Actually, Ferrada & Zarzosa (2010) and Fawaz & Rodríguez (2013) point out the link between marital status and women's labor market participation in Chile, with married women being significantly less active.

The high priority that the women consulted gave to unremunerated work is probably related to (in addition to other factors) the low income that they generated, which on average added up to CLP \$74,787 per month (112.3 US\$). It is important to mention that this income was mainly the product of work carried out as part of the program and corresponded to 22.5% of the overall household budget,

which reached an average of CLP \$331,729 (498.1 US\$) per month. These results fall in line with Anthopoulos's (2010) findings, which identified that expectations for benefits and expansion in their business is more modest in rural women than in men, given that females protect the balance between production tasks and taking care of the family.

Complementarily, Rodríguez & Muñoz (2015) show that one of the factors inhibiting the Chilean rural female movement into the labor market is the relatively small contribution that they represent to the household income.

Therefore, it is likely that female farmers fall into a vicious circle, where low income prospects and family responsibilities discourage greater dedication to their business, thus preventing them from improving their performance and contribution to the household economy.

In fact, in the case of the women consulted, only 18.2% of the production units declared their activities to the tax services. This rate is even lower than that which is observed for rural entrepreneurs in the country, which was 26.2% in 2014.

The informality is also reflected in terms of market access. In this sense, 57.7% of the women consulted declared that the products elaborated by the program group in which they participated were sold directly from the place of production, whereas for 12.8% the method of distribution employed was "door to door". Even their participation in local markets is very low, considering how important these are to Chilean small-scale farming (47), and thus this is expected to have an additional detrimental effect on the potential growth of their sales.

Finally, the main areas that the groups work in are horticulture and poultry farming, standing at 46.2% and 30.8%

respectively, followed by 11.5% in floriculture. The high presence in the first two subsectors coincides with data from the last agriculture census conducted in the Metropolitan Region (48); however, this is not the case for floriculture.

The difference may be due to the fact that in Chile floriculture is an activity with special ties to family farming and, in particular, to females.

Assessment of statements referring to attitudes and factorial analysis

The survey employed contained a series of statements relating to attitudes towards the initiative "Education and training program for rural women" that were scored by respondents in accordance with a 5-level Likert scale, with 1 being "totally disagree" and 5 being "totally agree". In this context, the most highly supported statement was: "The program has helped me to value my work" (average 4.68). This represents a great achievement, considering that a lack of self-confidence has the potential to limit rural women's entrepreneurship (3). Likewise, the following statements were also highly rated: "In general terms I am satisfied with the service provided by the program" (4.59), and "I think the training, courses and workshops provided by the program are useful" (4.56). This illustrates an overall positive view in terms of how the participants evaluated the general content that the program offered them.

Subsequently, statements relating to association and participation arose: "Thanks to the program I have learned the importance of associating with others" (4.49), "Thanks to the program I have learned to work as a team" (4.47), and "The program takes into account the participants' opinions" (4.48).

The beneficiaries' agreement with these statements is of particular relevance if we consider that positive links have been found regarding the relationship between rural women's collective action and their empowerment in a number of researches (15, 50).

Additionally, associativity is one of the pillars of this program since it is aimed at promoting collaboration and reliability to achieve common goals (54).

Furthermore, among the most positively evaluated statements there are a number related to overall improvements that the program facilitates for the current situation and for the business outlook for the women: "My production unit will continue working in the future thanks to the program" (4.41), "The program has helped me learn to introduce new ideas into my production unit" (4.32), "Thanks to the program I feel capable of carrying out new business ventures in the future" (4.21), and "The program has helped improve the organization of my production unit" (4.19).

The principal components analysis based on answers to the proposed statements showed that the farmers' attitudes towards the training program could be explained as 57.6% of the variance for the following six factors: "training and personal development" (20.39%), "service and feedback" (9.29%), "future prospects and business ventures" (8.31%), "commercialization and organizational management" (7.06%), "associativity" (6.71%) and "dedication to work" (5.83%) (table 1, page 149).

Cluster analysis of female farmers in terms of their attitudes

Three homogenous groups of female farmers were identified in terms of their attitudes towards the program (and specified in the principal components previously described). These groups were named the following: "reticent participants" (42.3%), "associative participants" (20.5%) and "empowered participants" (37.2%).

The first segment was defined, generally speaking, by its relatively negative attitude towards the program. This is particularly so in terms of the impact that this segment of participants felt they had achieved regarding "associativity" and "commercialization and organizational management", but also in relation to the "training and personal development" factor.

The results mentioned agree with those of Boza *et al.* (2016) for Indap beneficiaries of the local development program (Prodesal), where an important group of farmers that were skeptical about its usefulness were identified.

In the case of the women belonging to the "associative participants" cluster, there were contrasting positive and negative attitudes towards the program. As for the other profiles, the greatest differences were identified in the factors "future prospects and business ventures" and "dedication to work", for both of which negative attitudes were expressed. In contrast, the "associativity" factor produced extremely positive attitudes. Lastly, the "empowered participants" segment was characterized by its all-round positive attitude towards the program, and was the only group to commend the "dedication to work" factor (table 2, page 150).

Table 1. Composition of factors which explain farmers attitudes towards the program.

Tabla 1. Composición de los factores que explican las actitudes de las agricultoras frente al programa.

Factor	% of variance	Loading	Factor variable
Training and personal development	20.39%	0.770	My efficiency when working has improved thanks to the program.
		0.684	The quality of my business' products has improved thanks to the program.
		0.658	The program has helped me learn to introduce new ideas into my production unit.
		0.624	The program has helped me improve my technical skills.
		0.550	I think that the training, courses and workshops provided by the program are useful.
		0.530	The program has helped me increase my self-esteem.
		0.507	The program has helped improve the organization of my production unit.
Service and feedback	9.29%	0.787	In general terms I am satisfied with the service provided by the program.
		0.731	The program has helped my production unit in its formal and legal aspects.
		0.703	The program takes into account the participants' opinions.
		0.446	My production unit will continue working in the future thanks to the program.
Future prospects and business ventures	8.31%	0.728	Thanks to the program I feel capable of carrying out new business ventures in the future.
		0.698	The program provides information on other support services and programs.
		0.698	The program has taught me how to run a business.
		0.482	The program promotes taking care of the environment.
		0.437	My household income has risen as a result of this program.
Commercialization and organizational management	7.06%	0.763	Thanks to the program my production unit has improved its commercialization.
		0.681	There is a fair distribution of tasks among the participants in my group.
		0.616	I consider there to be an adequate number of participants in my group.
Associativity	6.71%	0.841	Thanks to the program I have learned the importance of associating with others.
		0.764	Thanks to the program I have learned to work as a team.
Dedication to work	5.83%	0.624	I consider the amount of time I spend working on my production unit to be excessive.
		0.559	The program provides sufficient financial support.
		0.527	The program activities are carried out opportunely.
		0.426	The program has helped me learn to value my work.

* Bartlett's sphericity test $p = 0.000$. / * Prueba de esfericidad de Bartlett $p = 0,000$.

** Kaiser-Meyer-Olkin index (KMO) = 0.642. / ** Índice Kaiser-Meyer-Olkin (KMO) = 0,642.

*** Total explained variance = 57.6%. / *** Varianza total explicada = 57,6%.

Table 2. Beneficiaries' clusters in terms of attitudes towards the program.
Tabla 2. Grupos de beneficiarios conforme a sus actitudes frente al programa.

Components	Cluster		
	"Reticent participants"	"Associative participants"	"Empowered participants"
Training and personal development	-0.57	0.37	0.45
Service and feedback	-0.16	-0.04	0.20
Future prospects and business ventures	0.12	-1.07	0.45
Commercialization and organizational management	-0.55	0.15	0.55
Associativity	-0.61	0.69	0.31
Dedication to work	-0.12	-0.79	0.57

To summarize, on the one hand, there is a segment of participants whose attitudes reflect a distinct skepticism regarding the program's impact in all aspects despite believing that it has the capacity to generate a positive effect on the overall evolution of their activity. This group differs from the "empowered participants", who present positive attitudes both in terms of the program's particular components and its overall impact. Lastly, the "associative participants" demonstrate significantly positive attitudes towards the program in relation to their psycho-social development, but not in respect to the technical and productive aspects. This contrast could be attributed to the individual circumstances under which the women consulted run their businesses- on a small scale, in an informal context and, in many cases, in addition to home-keeping. This suggests that a large percentage of the program participants, who do not see their activities as a business to expand upon, lack the motivation to analyze in depth and put into practice the specific training provided by the program. This is also linked to the fact that many of the women consulted

appreciate the effect the program had in terms of their personal development and capacity to make contact with other female producers, instead of specifically different aspects of production and management.

Finally, the disconformity of the participants grouped as "reticent" and "associative" regarding the program in relation to the time dedicated to it and to their own production activities would constitute additional evidence that their businesses are not priority.

These results are linked to those obtained by Rico & Gómez (2009), Anthopoulos (2010) and Galié, Jiggins & Struik (2013) who show that rural women regard their activities as a subsidiary support subject to household circumstances, more than as a true business venture the success of which is a priority on a personal level.

In fact, Abramo (2004) states that, in general terms, in Latin America female workers are seen as a "secondary labor force", subordinated to family needs. Specifically, in Chile's case, Fawaz & Rodríguez (2013) illustrate that the presence of a partner and children limits the women's positive attitude towards assuming a productive role, given

that a large percentage of them feel that it has a negative effect on the care they can give to their family.

However, despite all the restrictions affecting their opportunities for growth, this does not mean that the current situation of their businesses cannot have an impact on the empowerment of rural women (31).

To continue, it was relevant to carry out an overview of the program's participants' main characteristics for each of the segments identified. This revealed some significant differences. For instance, the "reticent participants" had the highest concentration of older producers, with an average age of 50.7 years, compared with the profiles of "associative participants" and "empowered participants" that averaged 45.3 and 46.4 years of age, respectively.

In terms of level of education, the participants in the first and third segments differentiated themselves by a greater relative presence of secondary school education (39.4% and 37.9% respectively), whereas in the second segment there was a strong presence of technical training (37.5%). This agrees with both the results of Boza *et al.* (2015), who indicate that in the Metropolitan Region, older people have fewer years of school, especially in rural areas, and with those obtained by Jaime *et al.* (2010) for Indap participants in the central-southern region of Chile, who found that a higher level of education was directly linked to participation in associations.

Furthermore, regarding the availability of services, the "associative participants" segment also showed better access, especially in terms of educational facilities. Likewise, 100% of the participants in this particular segment declared using public transport as a means of transport, compared with 39.4% of the "reticent participants" and 65.5% of the "empowered participants".

Regarding the family unit, several differences can be found among the groups, the first being the number of members. There was up to an average of 3.4 family members in the "reticent participants" cluster, 4 members in the "associative participants" and 4.5 in the "empowered participants". In terms of age distribution, it is possible to observe that the profile with the largest number of children between the ages of 0 and 6 years was the first one, reaching 11.5%, followed by the third and lastly the second cluster, reaching 9.9% and 6.2% respectively. This order is repeated when considering elderly people (65 years and over), with 19.5%; 16.8% and 12.3%, respectively.

Likewise, the segment of "empowered participants" presented a slightly higher percentage of women living without a partner compared to the others, along with a consequent declaration that they make decisions at home unilaterally. So the most favorable evaluations of the program came from participants that belonged to the largest families, and who were often in charge.

Their responsibility implies a greater need to generate income via their production, which can be linked to a higher motivation to assimilate the training provided by the program. This agrees with results already mentioned in Rodríguez & Muñoz (2015) concerning the introduction of Chilean rural women into the labor market.

Concerning the occupations of the participants, it is possible to observe strong contrasts within groups. The most noteworthy of these has to do with self-identification as "housewives", which reached 62.5% in the "associative participants" cluster, whereas 42.4% and 41.4% were observed for the "reticent participants" and "empowered participants" clusters

respectively. In this sense, 81.3% of farmers from the "associative participants" segment indicated that their most important activity was household tasks, compared with 48.5% and 58.6% in the other two segments. This helps to explain both why said participants demonstrated special appraisal of the program in terms of it providing a meeting point and support network, and it being more than a way of improving different technical and productive aspects of their own businesses, as well as their negative evaluation of the time dedicated to the program and their productive activities.

Lastly, regarding the different groups of farmers and their dissimilarities in attitudes towards the program as well as in their opinions on how they see themselves and their businesses, it is to be expected that there would also be apparent specific differences in the income generated.

Effectively, the higher personal income was obtained by the women belonging to the "empowered participants" profile, averaging CLP\$ 91,750 per month, compared to CLP\$ 66,156 for the "reticent participants" and CLP\$ 61,533 for the "associative participants".

In contrast, in the case of total household income, the highest amount was registered for the participants belonging to profile "reticent" (CLP\$ 375,793), followed by profile "empowered" participants (CLP\$ 318,928) and lastly, profile "associative" households (CLP\$ 261,000).

CONCLUSIONS

From the results presented, first it stands out that despite the "Education and training program for rural women" being positively evaluated on an aggregate level by the female farmers consulted,

there were significant differences among participants. Consequently, three specific segments were identified.

On the one hand, a majority group was notorious for holding a reticent view of the expected impact of the different components of the program. This contrasts with another segment of producers who demonstrated notably positive attitudes. Lastly, the third segment identified valued the program's facility to generate social links. In this sense, it was revealed that there is a concurrence between this high regard for the aspects of the program that promote relationships and psycho-social well-being and the participants identifying themselves as "housewives".

Additionally, as previously mentioned, a significant number of women demonstrated a pessimistic attitude in terms of utilizing the technical and managerial training provided by the program. That position seemed to be linked to low motivation in terms of expanding their businesses. At the same time, another interesting result was that the degree to which the women valued the program appears to be related to their household economic vulnerability. In fact, the female farmers with a more positive opinion about the program had a greater economic contribution to their household, as they often lacked additional support. This suggests that the necessity that these women have for their production activity to help alleviate their financial situation, encourages them to seize opportunities to develop their businesses.

From the point of view of public sector action, the results obtained suggest, on the one hand, that this kind of program's impact should be contemplated not only in terms of variations in economic situation, but also in terms of social development and psycho-social well-being.

On the other hand, another circumstance that should be taken into consideration when designing and implementing this type of program is that it seems to be crucial for the participants to be able to run both their household tasks and their production activities simultaneously.

Therefore, given that it is a long term aim to reverse an installed social structure (traditional role distribution), the most suitable option could be to adapt the programs to such circumstances but gradually work (directly or even indirectly) towards bringing about their mitigation.

REFERENCES

1. Abramo, L. 2004. ¿Inserción laboral de las mujeres en América Latina: una fuerza de trabajo secundaria? *Estudios Feministas*. 12(2): 224-235.
2. Aguilar, A.; Carranza, E.; Goldstein, M.; Kilic, T.; Oseni, G. 2015. Decomposition of gender differentials in agricultural productivity in Ethiopia. *Agricultural Economics*. 46(3): 311-334.
3. Amghani, M.; Gholami, H.; Shiri, N.; Shabanali, H. 2013. Obstacles of women presence in Iranian rural management: A case from Osku County. *International Journal of Agricultural Management and Development*. 3(3): 153-158.
4. Anthopoulou, T. 2010. Rural women in local agrofood production: Between entrepreneurial initiatives and family strategies. A case study in Greece. *Journal of Rural Studies*. 26: 394-403.
5. Baca, N.; Herrera, F. 2008. Emergencia de la relación desarrollo rural-género. *Convergencia Revista de Ciencias Sociales*. 48: 223-253.
6. Banco Central. 2016. Cuentas nacionales de Chile. PIB regional 2015. Santiago, Chile. Banco Central. 14 p.
7. Boza, S.; Cortés, M.; Guzmán, F. 2015. Caracterización de pequeños empresarios agrícolas beneficiarios de programas de desarrollo local en la Región Metropolitana, Chile. *Idesia (Arica)*. 33(1): 135-142.
8. Boza, S.; Marcos, G.; Cortés, M.; Mora, M. 2016. Perfiles basados en actitudes hacia los programas de apoyo público de microempresarios rurales de la zona central de Chile. *Revista de la Facultad de Ciencias Agrarias. Universidad Nacional de Cuyo. Mendoza. Argentina*. 48(2): 161-175.
9. Buendía, I.; Carrasco, I. 2013. Mujer, actividad emprendedora y desarrollo rural en América Latina y el Caribe. *Cuadernos de desarrollo rural*. 10(72): 21-45.
10. Castro, A. 2012. Familias rurales y sus procesos de transformación: Estudio de casos en un escenario de ruralidad en tensión. *Psicoperspectivas*. 11(1): 180-203.
11. Contzen, S.; Fortney, J. 2016. Family farming and gendered division of labour on the move: a typology of farming-family configurations. *Agriculture and Human Values*. In press.
12. Croppenstedt, A.; Goldstein, M.; Rosas, N. 2013. Gender and Agriculture: Inefficiencies, segregation, and low productivity Traps. *The World Bank Research Observer*. 28(1): 79-109.
13. Damisa, M. A.; Yohanna, M. 2007. Role of rural women in farm management decision making process: Ordered probit analysis. *World Journal of Agricultural Sciences*. 3(4): 543-546.
14. FAO. 2010. The use of monitoring and evaluation in agriculture and rural development projects. Rome. FAO/World Bank. 60 p.
15. Farmar-Bowers, Q. 2010. Understanding the strategic decisions women make in farming families. *Journal of Rural Studies*. 26: 141-151.
16. Fawaz, M. J.; Soto, P. 2012. Mujer, trabajo y familia. Tensiones, rupturas y continuidades en sectores rurales de Chile central. *Revista de Estudios de Género: La Ventana*. 4(35): 218-254.
17. Fawaz, M. J.; Rodríguez, C. 2013. Mujeres rurales y trabajo en Chile central. Actitudes, factores y significaciones. *Cuadernos de Desarrollo Rural*. 10(72): 47-68.
18. Ferrada, L.; Zarzosa, P. 2010. Participación laboral de las mujeres en las regiones de Chile. *Universum (Talca)*. 25(2): 79-99.

19. Fisher, M.; Kandiwa, V. 2014. Can agricultural input subsidies reduce the gender gap in modern maize adoption? Evidence from Malawi. *Food Policy*. 45: 101-111.
20. Fletschner, D.; Kenney, L. 2011. Rural women's access to financial services. Credit, savings and insurance. FAO-ESA Working Paper. 11-07.
21. Galié, A.; Jiggins, J.; Struik, P. C. 2013. Women's identity as farmers: A case study from ten households in Siria. *Wageningen Journal of Life Sciences*. 64-65: 25-33.
22. INE. 2007. Cambios estructurales en la agricultura chilena. Análisis Intercensal 1976-1997-2007. Santiago. Chile. 69 p.
23. Jaime, M.; Salazar, C.; Araya, S.; Vergara, J. 2010. Niveles de participación en la pequeña agricultura ¿De qué depende que los productores se involucren en sus organizaciones? *Economía Agraria*. 14: 9-21.
24. Jolliffe, I. T. 2002. Principal Component analysis. New York. Springer. 487 p.
25. Johnson, R. A.; Wichern, D. W. 2007. Applied multivariate statistical analysis. New Jersey. Pearson Prentice Hall. 773 p.
26. Karamba, R. W.; Winters, P. C. 2015. Gender and agricultural productivity: implications of the farm input subsidy program in Malawi. *Agricultural Economics*. 46(3): 357-374.
27. Kieran, C.; Sproule, K.; Doss, C.; Quisumbing, A.; Mi Kim, S. 2014. Examining gender inequalities in land rights indicators in Asia. *Agricultural Economics*. 46(1): 119-138.
28. Kotevska, A.; Martinovska-Stojcheska, A.; Öhlmér, B.; Dimitrievski, D. 2013. Attitude of Macedonian farmers towards EU accession. *Agroeconomia Croatica*. 3(1): 9-17.
29. López Lluch, D. B.; Zapata, J. L.; del Campo Gomis, F. J. 2016. Análisis preliminar de la percepción de los trabajadores del campo acerca del sistema de formación continua en la Región de Murcia. *Revista de la Facultad de Ciencias Agrarias*. Universidad Nacional de Cuyo. Mendoza. Argentina. 48(2): 177-193.
30. Malhostra, N. K. 2008. Investigación de Mercados. Mexico DF. Prentice Hall Mexico. 864 p.
31. Markantoni, M.; Van Hoven, B. 2012. Bringing 'invisible' side activities to light. A case study of rural female entrepreneurs in the Veenkoloniën, the Netherlands. *Journal of Rural Studies*. 28: 507-516.
32. Marzo-Navarro, M.; Pedraja-Iglesias, M.; Vinzón, L. Percepción de los residentes sobre el desarrollo de la micro región Tierra de Palmares desde la perspectiva del turismo rural integrado. *Revista de la Facultad de Ciencias Agrarias*. Universidad Nacional de Cuyo. Mendoza. Argentina. En prensa.
33. Mora M.; Cortes M.; Sanhueza C.; Sáenz C. 2013. Innovation requirements for the development of cactus pear for export: A new item to be incorporated to the Chilean fruit export sector. *Acta Horticulturae*. 995: 229-236.
34. Moser, C. 1989. Gender planning in the Third World: meeting practical and strategical gender needs. *World Development*. 17(11): 1799-1825.
35. Namdar-Irani, M.; Sotomayor, O. 2011. Le conseil agricole au Chili face à la diversité des agriculteurs. *Cahiers Agricultures*. 20: 352-358.
36. NEPAD. 2013. Agriculture in Africa, transformation and outlook. Johannesburg. NEPAD. 72 p.
37. ODEPA. 2013. Región Metropolitana. Información regional 2013. Santiago. Chile. 17 p.
38. Quiles, M. N.; Marichal, F.; Betancort, V. 1998. Las actitudes sociales. In: Quiles, M. N. (Ed.). *Psicología Social: Procesos Interpersonales*. Madrid. Editorial Pirámide. 131-159.
39. Ragasa, C.; Berhane, G.; Tadesse, F.; Tadesse, A. S. 2012. Gender differences in access to extension services and agricultural productivity. *ESSP Working Paper*. 49.
40. Rico, M.; Gómez, J. M. 2009. Análisis de los enfoques sobre género y desarrollo: algunas reflexiones acerca de la mujer y su incorporación al proceso de desarrollo rural. In: Orejas, J. A.; Retortillo, O.; Piñeyroa, A. J. (Coord.). *Mujer, empresa y medio rural: V Congreso Internacional Mercado de Trabajo y Relaciones Laborales*. Palencia. Diputación de Palencia. 239-274.
41. Rodríguez, C.; Muñoz, J. 2015. Participación laboral de las mujeres rurales chilenas: tendencias, perfiles y factores predictores. *Cuadernos de Desarrollo Rural*. 12(75): 77-98.

42. Ruíz, L. E. 2012. Relaciones de género y mercados de derechos de agua y tierra en Chiapas. *Región y Sociedad*. 24(53): 55-89.
43. Sabaté, A. 2009. La dimensión de género en las políticas españolas y europeas de desarrollo rural. In: *Unión de Pequeños Agricultores (UPA)* (Ed.). *Agricultura familiar en España*. Madrid: UPA. 103-108.
44. Sánchez-Toledano, B. I.; Kallas, Z.; Gil, J. M. 2017. Importancia de los objetivos sociales, ambientales y económicos de los agricultores en la adopción de maíz mejorado en Chiapas, México. *Revista de la Facultad de Ciencias Agrarias*. Universidad Nacional de Cuyo. Mendoza. Argentina. 49(2): 269-287.
45. Sepúlveda, W.; Maza, M.; Pardos, L.; Fantova, E.; Mantecón, Á. 2010. Farmers' attitudes towards lamb meat production under a Protected Geographical Indication. *Small Ruminant Research*. 94: 90-97.
46. Taylor, V. 1999. *A quick guide to gender mainstreaming in development planning*. London, UK. Commonwealth Secretariat. 40 p.
47. Tejada, H. 2014. Venta directa en ferias locales: el proceso de modernización de las ferias libres en Chile. In: Sotomayor, O.; Rodrigues, M.; Rodríguez, A. (Coord.). *Agricultura familiar y circuitos cortos: Nuevos esquemas de producción, comercialización y nutrición*. Santiago. Chile. CEPAL. 93-96.
48. Traub, A.; Gajardo, S. 2012. *El sector silvoagropecuario en la Región Metropolitana de Santiago*. Santiago. Chile. ODEPA. 14 p.
49. Valdés, X.; Rebolledo, L. 2015. Géneros, generaciones y lugares: cambios en el medio rural de Chile Central. *Polis (Santiago)*. 14(42): 491-513.
50. Viana-Silva, C.; Valente, A. 2013. *Agricultura familiar, género e dinâmicas sociais: um estudo sobre a construção territorial do assentamento Nova Lagoa Rica*. *Revista de Economia e Sociologia Rural*. 51(2): 387-400.
51. Wichelns, D. 2015. Achieving water and food security in 2050: outlook, policies, and investments. *Agriculture*. 5: 188-220.
52. Wiig, H. 2013. Joint titling in rural peru: impact on women's participation in household decision-making. *World Development*. 52: 104-119.
53. World Bank, 2012. *World development report 2012: gender equality and development*. Washington DC. World Bank. 426 p.
54. Zambrano, A.; Bustamante, G.; García, M. 2009. Trayectorias organizacionales y empoderamiento comunitario: Un análisis de interfaz en dos localidades de la región de la Araucanía. *Psykhé*. 18(2): 66-78.