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Investigation of Economic and Social Effects of the Dairy Cattle Support Project to Regional Economy via Cooperatives: Example of Isparta Province

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***Abstract*—**Milk is a very important nutrient. Low productivity is a problem of Turkish dairy farming. During recent years, Turkish government has supported cooperatives that assist milk producers and encouraged farmers to become cooperative members. Turkish government established several ways to support specially smallholders. For example Ministry of Agriculture and Rural Affairs (MARA) provided two to four cows to villagers on a grant or loan basis with a long repayment period at low interest rates by cooperatives. Social Support Project in Rural Areas (SSPRA) is another support program targeting only disadvantaged people, especially poor villager. Both programs have a very strong social support component and similar objectives. But there are minor differences between them in terms of target people, terms and conditions of the credit supplied

Isparta province in Mediterranean region of Turkey is one of the supported regions. MARA distributed dairy cows to 1072 farmers through 16 agricultural cooperatives in Isparta province in the context of SSPRA.

In this study, economic-social impacts on dairy cattle project implemented through cooperatives were examined in Isparta.

Primary data were collected from 12 cooperatives' president. The data were obtained by personal interview through a questionnaire and to cooperatives and given to farms benefiting from the project in order to reveal the economic and social developments.

Finding of the study revealed that project provided new job opportunities and improved quality of livestock. It was found that producers who benefited from the project were more willing to participate in cooperative or other producer organizations.

***Keywords*—**Cooperative, Dairy Cattle, Economic Impact, Livestock Support Project, Social Impact.

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I. Introduction

ALTHOUGH the agricultural cooperatives in Turkey with their 4 millions of partners operate in various fields, they operate not as effective as in developed western countries [1]. Through organizing, growers can become more effective in both input markets and product markets. The breeders organizations operating in livestock raising field are agricultural development cooperatives which are generally operate within the frame of Law nr 1163.

In recent years, the subventions, especially ones about stockbreeding, have been organized through unions / cooperatives.

According the changes on "Guide of Subventions to be made for Agricultural Cooperatives" of General Directorate of Organization and Support of Ministry of Food, Agriculture and Stockbreeding, within the units under possession of partners, some projects such as cattle raising for brood, cattle raising for milk, buffalo raising, stock cattle raising, green housing, beekeeping, mushroom production and special rehabilitation projects have been conducted since year 1990. The capacity of cooperated milk cattle raising activity of cooperatives have been determined as 200 units for 100 families, 2 units per family (200 unit=100 families x 2 Units / Family). The capacity of cooperated brood cattle raising have been determined as 200 units for 50 families, 4 units per family (200 unit=50 Families x 4 units / family). But in recent years, there are some different application in capacity of cooperated brood cattle raising project such as (30x10), (50x6), (40x6) and (30x6). Also within the frame of Rural Area Social Support Project (KASDEP), the distribution is conducted as 2 units of dairy cattle for each family for at least 50 and at most 120 families [2]. With a new law regulation, a new distribution as 4 cows per family for at least 30 and at most 120 partners has been started [3].

Within the scope of cooperated brood cattle raising and cooperated dairy cow raising activities of cooperatives in Turkey, totally 1,378 cooperatives (456 of them within the scope of general budget of Ministry of Food, Agriculture and Stockbreeding and 922 of them within the scope of KASDEP (between 2003 and 2010)) have conducted those livestock raising projects. For the cooperatives, 1,551,469,735 TL of credits have been allocated for those projects (725,107,621 TL from general budget of Ministry of Food, Agriculture and

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Stockbreeding and 826,362,114 TL from KASDEP budget) [4].

The national income per capita in rural areas is low. So while National Income Per Capita in Turkey is approximately 10,500 USD, the same value for rural areas of Turkey is approximately 3,500 USD.

Within this scope, many KASDEP project have been conducted in order to increase the animal production, especially to increase the income levels of agriculture companies in rural areas with economical and economical deficiencies, and to improve employment rates.

As of year 2011, 9,233,740 cattle in Turkey are composed of 41.61% cultivation hybrids, 38.28% cultivations and 20.12% native strains [5].

According to the data of TUİK (Turkish Institution of Statistics), the cow milk production amount in Turkey in year 2011 was 13,802,428 t. As of the same year, there were 97,091 cattle in Isparta where the study was conducted. Almost all of the cattle (99.87%) consist of buffalo. The shares in total amount of buffalos were 57.06% for pure cultivation strain, 25.83% for hybrid strains and17.11% of native strains. Most of the buffalos in city were cultivation strains. 0.8% of total amount of buffalos in Turkey exist in Isparta, and 1% of total milk production of our country is provided by this city. The highest buffalo existences in city are in districts of Şarkikaraağaç (22.98%), Sütçüler (21.17%), Yalvaç (20.92%) and Senirkent (16.01%) [5].

When some studies in this research topic were examined; within the frame of Çerkeş district example of Turan, the cooperative-partner dairy cattle raising companies and non-partner companies were analyzed economically with comparison method. The cost of 1kg milk in cooperative-partner dairy cattle raising companies was determined as 11.61% less than in non-partner companies. As a result of research, the relationships between cooperatives and partners were found as having increasing trend, and it was determined that partners will be more successful in their businesses when the cooperative become more active [6].

In their study, Koç and Gül discussed Yüreğir S.S. Kürkçüler District Agricultural Development Cooperative within the scope of dairy cattle raising in rural region of Adana city. In the project, each of 100 partners was given 2 culture strain dairy cow. Within the study, the attitudes and behaviors of cooperative partners about project were discussed and disruptions were revealed. It was determined that 50% of cooperative partners were not pleased with cooperative services, and the reason of that was delayed milk payment. The rate of partners who were not pleased with milk cattle distributed within the scope of project was found significantly high as 69.20%. Within the study, the most important reasons of that displeasure from dairy cattle were expressed as death (32.89%), low efficiency (30.26%), animal diseases (21.05%) and orientation problems of animals (15.79%) [7].

Dedeoğlu and Yıldırım performed the economical analysis of annual activities of partner companies of Emek agricultural development cooperative. As a result of the study, the number of cattle per company was 2.5 and daily milk productivity was determined as 7.9 kg/day. They determined that 83.98% of variable costs arose from feed costs. According to the results of Cobb-Douglas production function applied in study, the increasing returns to the scale were found in companies [8].

Koçtürk has examined the results of subventions on dairy cattle raising in Yağlar Village of Kiraz district of Izmir city. The project is conducted by cooperatives and all of cooperative partners are women. As a result of study, some of the findings are that the dairy cattle raising project conducted by cooperatives had positive effects on revenue increase in region and life standards of villagers, but also that the land distribution was not balanced and enough [9].

By revealing the general profiles of managers of dairy cattle raising cooperatives which have been making profit from KASDEP livestock breeding project through cooperatives in Isparta city, the assessments of managers about project have been revealed through some social and economical indicators.

II. Materials and Methods

The main material of this research is the data obtained from face-to-face survey which was conducted with managers of dairy cattle raising cooperatives making profit from project of KASDEP conducted by Ministry of Food, Agriculture and Stockbreeding in Isparta city in 2000s. Through survey study, their 2011 data were requested from companies.

As of year 2010, there are 15 cooperatives being given dairy cattle through cooperatives in region. Within this scope, data could be obtained from 12 cooperatives. Within this study, survey was used as data collection tool, and face-to-face interview was used as data collection method. The data obtained from cooperatives making profit from subvention were evaluated in SPSS package software. For analyses of data, frequency and percentage from basic statistical definers, and Likert scale were used.

III. Discussion

A. The Implementations of Evaluated Cooperatives within the Scope of Dairy Cattle Raising Project

1. The Structure of Evaluated Cooperatives

During research period, the dairy cattle raising project was applied in 12 cooperatives in Isparta city. All of the interviewed cooperatives were in the scope of KASDEP. The mean number of members of evaluated cooperatives was 1375, and the numbers of members of them vary between 450 and 2500. All of the cooperatives were accepting new members. Establishment purposes of cooperatives were as follows; the purpose of 2 of them (16.6%) was to send people to Germany when earthquake occurs, the purpose of 3 of them was (25%) was to collect milk, the purpose of 3 of them (25%) was agricultural development, the purpose of 3 of them (10%) was irrigation, and the purpose of 1 of them was fruit marketing. Among all interviewed cooperatives, it was seen that the oldest one was established in 1965 and the newest one was established in 2006. It was determined that the purpose of old-established cooperatives was irrigation and to send people

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abroad, and that the purpose of new-established cooperatives (since 2000) was to improve the livestock raising. All of the evaluated companies have employees. Only one of companies has permanent zoo-technician and he works in cooperative permanently. No permanent veterinary surgeon or zoo-technician works in other cooperatives, the members of those cooperatives call veterinary for their requests when needed. The business fields of interviewed cooperatives are shown in Table I of the interviewed cooperatives acts in only milk trade field, 8 of those cooperatives act in milk purchasing and feed selling fields, 2 of cooperatives act in milk purchasing, feed selling and irrigation fields, and 1 of cooperatives act in milk purchasing, irrigation and fruit and vegetable trade fields.

TABLE I
AREAS OF CO-OPERATIVES OF THE INVESTIGATED

Areas of Activity	Frequency	%
Only milk purchasing	1	8,3
Milk purchasing and feed selling	8	66,6
Milk purchasing, feed selling and irrigation	2	16,3
Milk purchasing, irrigation and fruit and vegetable trade	1	8,3
Total	12	100,0

Among the assets of cooperatives, all the interviewed interviews were found to have service buildings. 6 cooperatives (50%) have storehouses, 3 cooperatives (25%) have their own plots, 6 cooperatives (50%) have vehicles, and 6 cooperatives (50%) have tools and equipments (Table II).

TABLE II
CURRENT ASSETS OF INTERVIEWED COOPERATIVES

Current assets	Frequency	%
Service building	12	100,0
Storehouse	6	50,0
Vehicle	6	50,0
Tools & Equipments	6	50,0
Own plot	3	25,0

2. Cattle Distribution of Cooperatives within the Scope of Dairy Cattle Raising Project

Cooperatives started to distribute cattle within the scope of dairy cattle raising project in year 2004. As of research period, the last cattle distribution was conducted by 4 cooperatives in year 2010. The numbers of cattle distributions for each of years are as follows; 1 cooperative in year 2004 (8.3%), 2 cooperatives in 2006 (16.6%), 1 cooperative in 2007 (8.3 %), 1 cooperative in 2008 (8.3%) and 3 cooperatives in 2009 (25%). As seen in Table III, the number of cooperatives performing cattle distribution increased since 2008.

TABLE III
START DATES OF CATTLE DISTRIBUTIONS OF INTERVIEWED COOPERATIVES

Years	Frequency	%
2004	1	8,3
2006	2	16,6
2007	1	8,3
2008	1	8,3
2009	3	25,0
2010	4	33,3
Total	12	100,0

Within the scope of dairy cattle raising project, the cattle which were distributed to members through cooperatives were pregnant culture-strained cattle. The distribution rates in cooperatives within the scope of project were as follows; 2 units per producer in 10 cooperatives (83.3%), 4 units per producer in 1 cooperative (8.3%), and 6 units per producer in 1 cooperative (8.3%).

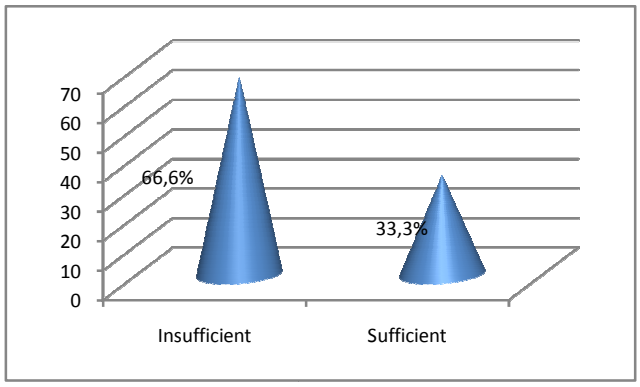


Fig. 1 Sufficiency situations of distributed cattle

Among interviewed cooperatives; 66.6% of them found the number of distributed cattle as insufficient, 25% of them found it as too many, and 8.3% of them found it partially sufficient (Fig. 1). About choosing the villages to distribute animals within the scope project; more than 50% of them thought that the project prepared by village was effective. Others thought that the effective factors were poverty of villages, income levels, and social security conditions, respectively.

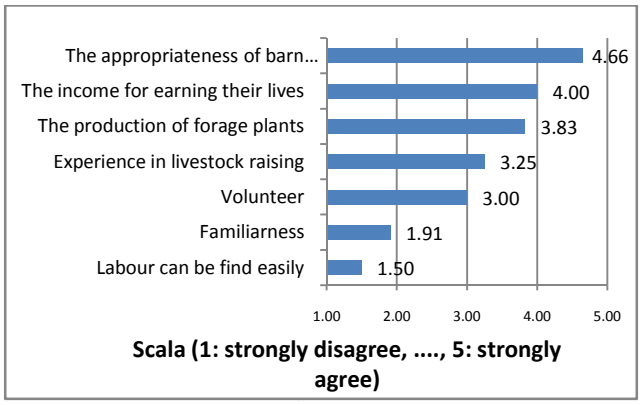


Fig. 2 Factors to care for producer choice

In order to determine the factors which interviewed cooperatives considered for choosing the producers when distributing cattle in the scope of dairy cattle raising project, some consideration sentences were given to cooperatives, and then they were asked to give points to those sentences in order to determine whether they agree or not. According to those; the topics which producers agree with about producer choices of cooperatives are as follows; the appropriateness of barn capacity, the production of forage plants, experience in livestock raising, and the income for earning their lives (Fig.

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2). 75% of cooperatives expressed that cattle were given to each of farmers who applied to cooperatives for dairy cattle raising project. The reasons of this high rate are that most of those cooperatives were established after year 2000, and that their establishment purposes are to improve animal breeding and to make profit from that project. So the numbers of members are results of that reasons. 25% of cooperatives stated the reason of the fact that each farmer, who applied within the scope of dairy cattle raising project, could not be given cattle as farmers' social insurance deficiencies and deficiencies in barn capacities. 75% of interviewed cooperatives expressed that the farmers were trained before giving cattle during cattle distribution, but 25% of cooperatives stated that they did not give any training to farmers about livestock raising. It was determined that the training and publishing activities about livestock raising has been conducted by District Directorate of Agriculture and feed companies. 10 of cooperatives stated that publish employees came to villages properly, but 2 of cooperatives stated that they did not. 11 of cooperatives stated that viewings were performed in producers' cattle raising fields before giving cattle to them, but 1 of the cooperatives stated that they did not. During performing viewings, some criteria were considered, such as size of barns and production of forage plants. 50% of cattle-given cooperatives expressed that they are quite pleasant with given cattle, 8.3% of cooperatives expressed that they are pleasant with cattle, and 41.6% of cooperatives expressed that they are very pleasant with given cattle. There is not any participant being not pleasant or being a little bit pleasant.

3. The Role of Cooperatives in Animal Product Purchasing and Marketing

All of the interviewed cooperatives make purchases of products obtained from animals. All of 12 cooperatives making animal product purchase only collect milk which farmers produce, and then they sell it after cooling. They do not make purchase any other animal products. The price of milk is determined according to market prices in 100% of cooperatives. The cooperatives performing milk sales sale 100% of milk, which they obtained from producers, to large-scaled retailers. While the average milk purchasing price of cooperatives was 0.75 TL/kg, their sale price was 0.82 TL/kg. The milk purchasing prices of cooperative vary between 0.71 TL/kg and 0.78 TL/kg, while their sale prices vary between 0.80 TL/kg and 0.82 TL/kg.

4. The Contributions of Interviewed Cooperatives on Stockbreeding

In order to determine the levels of contributions of interviewed cooperatives on stockbreeding activity and rural development in the scope of dairy cattle raising project, some consideration sentences were given to cooperatives and they were asked to give points to those sentences in order to express whether they agree with or not.

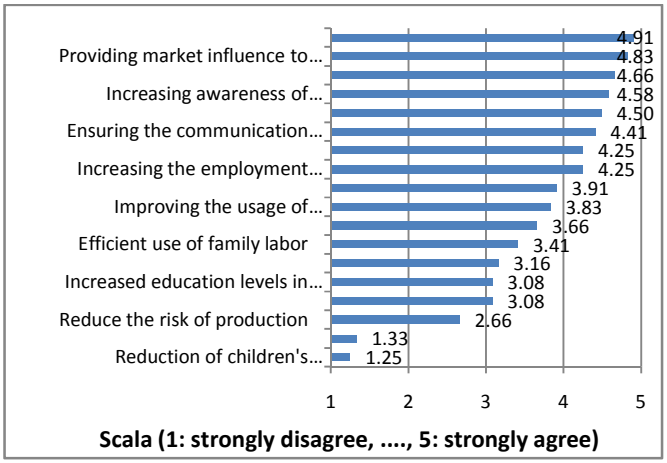


Fig. 3 The contributions of cooperative activities on stockbreeding and rural development

The topics which cooperatives were in agreement that they are contributions on stockbreeding activity and rural development are as follows; increasing trust of producers on organization, providing market influence to producers, providing organization, increasing awareness of producers on production and marketing topics, increasing life standards of farmers, ensuring the communication between state and producer, decreasing production costs, increasing the employment opportunities, providing easy and cheap input supply, improving the usage of technology, improving the role of women in rural areas (Fig. 3).

5. General Information about Cooperative Managers

The mean age of cooperative managers was determined as 44. 50% of cooperative managers were elementary school-graduated, 50% of managers were graduated from lyceum. It was determined that the main occupation of cooperative managers was farming. For the rest of cooperative managers, it was determined that their second occupations besides farming were driving, trade and computer operating. 66.6% of interviewed cooperative managers can use computers. It was determined that only 7 cooperative managers (58.3%) have internet connection and can use internet. It was determined that the cooperative managers have been in their positions for averagely 5.3 years. All of the cooperative managers were appointed to their positions through elections. While more than half of cooperative managers (66.6%) were thinking to quit their jobs, others expressed that they wanted to continue their jobs. No cooperative manager without any knowledge about stockbreeding was observed. 50% of cooperative managers were trained in stockbreeding field. The trainings were provided by city and district directorates of Food, Agriculture and Stockbreeding employees and private veterinaries. It was determined that all of the cooperative managers have acknowledgement about operations and management of cooperatives at midlevel of high level. There is no cooperative manager who thinks that cooperative operations are ineffective. The rate of managers thinking that its efficiency is low is 8.3%, and the rate of managers thinking

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that its efficiency is midlevel is 50.0%. According to that, it is seen that most of cooperative managers think that cooperative operations are not so effective.

6. The Contributions of Dairy Cattle Raising Project According to Cooperatives

The contributions of project which is named as dairy cattle raising were discussed separately as contributions on national contributions, regional contributions, and contributions on agriculture companies.

6.1. Contributions on National and Regional Economies

8.3% of cooperative managers think the dairy cattle raising project contributes on national and regional economies. Also, 58.3% of managers think that the level of contribution is upper than midlevel, and 25% of managers think that contribution level is high. 8.3% of cooperative managers expressed that project provides no contribution. Among the expected contributions of dairy cattle raising project on national and regional economies, the most important one is its economical contributions on incomes of producers in rural areas. Besides that, it made farmers more conscious about animal breeding. It led economical renovation in successful cooperatives, and led producers to be able to pay their social insurance fees.

6.2. Contributions on Enterprise

The rate of cooperative managers thinking that the dairy cattle raising project contributes on agriculture companies at midlevel is 8.3%. Besides that, the rate of managers thinking that it contributes at high level is 83.3%. The rate of managers thinking that there is no contribution is 8.3%. According to cooperative managers, the most important ones among the expected and actual contributions of dairy cattle raising project on agricultural companies are increasing awareness of producers, daily income from obtained milk, and the ability of companies to grow.

7. The Problem, which are Experienced during Dairy Cattle Raising Project, According to Cooperatives

For interviewed cooperatives, the most frequent problem is the problems about producers within the scope of dairy cattle raising project. Other important problems in cooperatives are delays in project, unawareness of producers, procedures, and obtaining the number of required members in order to participate in project. For solving those problems, cooperatives receive support mostly from city directorate of Food, Agriculture and Stockbreeding. But besides that, it was reported that they receive support from other unions.

8. The Success Level of Project and Some Improvement Proposals from the Viewpoint of Cooperatives

91.6% of examined cooperatives expressed that project is successful at midlevel and high level. The rate of cooperatives which think that project is not successful or is successful at low level is 8.3%. According to importance levels, the proposals of cooperatives about improvement of project are repeats of project, increasing of number of distributed cattle, consciousness of employees coming to villages, and improvement of price of milk. The results of research corroborate the proposals of cooperatives.

IV. Result

Stockbreeding in Turkey is a sector which should be improved during EU integration period. In terms of improvement of Turkish stockbreeding sector and its competitive force, the implemented subvention projects produce advantageous results. In parallel with this, an increase trend is seen in amounts of subventions given for improvement of stockbreeding sector. In order to make profit from subventions given for improvement of stockbreeding, companies are requested to become a member of producer unions at first, and then they must record each of transactions they made.

With the main aim of increasing the income level in rural area, this project was put into the practice in year 2003 through cooperatives. Within the scope of this project which discusses the economical and social interaction between the cooperatives making profit from this project, one of the obtained results is that cattle subvention project is found successful by cooperative managers. Hence, establishment of new companies after project and increases in income of individuals with low income can be accepted as positive results of project. Besides them, there are some other contributions of project, which were expressed by cooperative managers, such as decrease on unemployment, preventing the migration and improvement in life standards. When considering the project in terms of regional profits, it can be seen that stockbreeding improved, productivity and quality increased, the rate of producer organizing raised. But it can be said that the desired success level could not be obtained because of high feed costs, the lack of producers' consciousness, and inefficiency of cooperative operations and etc. On the other hand, some of the important social acquisitions through project are usage of family workforces, directing the companies to organizations through cooperatives.

In order to increase the efficiencies of practices for improving the stockbreeding, the needs of making cooperatives more efficient and improving the efficiency of publishing activities for companies about animal breeding technique are corroborated by results of this research.

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