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Evaluation of Rural Development Activities to Livestock Sector in Turkey: The Case of Ordu, Giresun Provinces

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Abstract: In this study, activities to the livestock sector were evaluated as part of the Ordu-Giresun Rural Development Project (OGRDP) and the contributions of these activities to the livestock sector were determined. Project activities such as credit distribution, animal feed distribution, farmer training, rehabilitation of animal house, pasture and meadow management and rehabilitation, livestock production, animal breeding, dairy cattle farming, sheep farming, beekeeping, aquaculture, fodder crops farming, technical applications and better livestock management to livestock sector in OGRDP were implemented. The project created a significant amount of services to target farmers through livestock interventions. As a result of these project interventions, the target farmers experienced positive changes. Field demonstrations for fodder crops created interest among farmers and new technologies were adopted. Improved feeding conditions and the introduction of better livestock management practices increased milk yield significantly. In addition, the number of animals per farm increased. As a result, the government should support the farmers to livestock for long term sustainability of the livestock sector in this project area. Continued development of the livestock sector will lead to rural development and enhance sustainability. This should be the overall objective for the government.

Key words: Rural development, evaluation of livestock activities, livestock development

INTRODUCTION

The livestock sector is one of the strongest components of the rural economy in Turkey. The sector contributes substantially to the national economy by providing high value food, income, employment and foreign exchange. There are also significant indirect benefits which include reduced risks to human health, more sustainable use of arable land and pastures and the possibility to add value to livestock products.

In Turkey the livestock sector has substantial but declining numbers of cattle and sheep and a growing poultry sector. Regarding cattle, there has been a move away from local breeds over time; the percentage of local breeds has decreased from 58 to 35%. In contrast, the vast majority of sheep and goats continue to consist of native breeds. Animal husbandry

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constitutes approximately 23.95% of agricultural production value (TSI, 2007). Livestock products are an important source of household income for many farmers and households in rural areas. In Turkey, the family owned farm is the basic unit of agricultural production and family members provide most of the farm labour. Statistics revealed that 30.21% of all farms were involved only in crop production and 67.43% of all in crop production and animal husbandry, while the reminder 2.36% was involved in only animal production. The total labour force employed in the agricultural sector is 30% of the total population. In rural areas, men represent 61.5% of employees and women 38.5% (SIS, 2004). In Turkey, the livestock sector plays an important role in creating jobs and thus the labour force remains in rural areas reducing the migration to urban areas.

In Turkey rural areas face problems of human resources, an ineffective institutional structure and farmer organizations to support rural development, scattered settlement patterns in some regions, insufficient development and maintenance of physical, social and cultural infrastructure, a high rate of dependence on subsistence agriculture, high rate of hidden unemployment, insufficient diversification of agricultural and non-agricultural income generating activities, low income level and relatively low quality of life for the rural population, migration and ageing of the rural population.

The main activities within rural development have been the implementation of integrated rural development projects, regional development plans together with sectoral implementations which mainly aim to improve rural and agricultural infrastructures, increase agricultural production, improve health and education services and as a result increase the income and welfare of the rural community (EC, 2006).

Ordu-Giresun Rural Development Project (OGRDP) is one of most important Rural Development Project implemented in the Ordu-Giresun provinces in Turkey partly financed by International Fund for Rural Development (IFAD). The project started in 1997 and was completed in 2005. A strategic partnership was envisaged among government implementing agencies; Ministry of Agriculture and Rural Affairs (MARA) as a coordinator institution, General Directorate of Rural Services (GDRS), General Directorate of Afforestation and Erosion Control (AGM) and Fund for Development of Forest Villages (ORKOY).

The project area, comprising the two provinces of Ordu and Giresun is in the Eastern Black Sea Region and has a total area of 13 000 km^2. An area southwards from the Black Sea coast climbs steeply through productive hazelnut plantations, open rangelands to the highest points of the East-West mountain ranges which are snow-covered for at least 6 months of the year and mark the limit of the coastal climatic zone. Beyond lies the low rainfall southern area of Central Anatolian type with a harsh continental climate. Topography is similar in both provinces with narrow coastal plain then steeply rising hills parallel to the coast covered trees up to 1800 m and a high Alpine pasture area up to 3000 m in the South-East (IFAD, 1995).

The overall objective of OGRDP was to assist male and female members of households in participating villages to improve their standard of living through the sustainable use of natural resources. In the project, 280 villages benefited from village level development of infrastructure, improved communal grazing and forestry and income-generating activities. In order to increase the farmers' income, the extension activities such as advanced technical and management applications, animal husbandry (cattle and sheep farming, milk production, apiculture), fodder crops production, crop production to take the steps of supporting the forestry by forestation and the community in forestry areas including erosion control and meadow management and small-sized irrigation systems and their management were implemented (IFAD, 2006).

The project design is based on beneficiaries' participation in overall phases, from the planning stage to implementation. A participatory rural development approach was adopted in the project design. A new approach for the target region is the introduction of Village Development Plans (VDP) that were prepared between implementing agencies and villagers through joint effort, which ultimately increases the mutual understanding and enhances the identification of the right set of interventions depending on village needs (Chambers, 1993). The implementing institutions contributed to VDP planning and determined the type, amount and cost of interventions with villagers. Then implementation has been carried out based on VDPs (MARA, 2006a).

Beneficiaries are defined as the lowest-income groups living in Northern Forest, Southern Forest and Anatolia zones. The Project was designed in a way to reduce poverty and increase the living standards of the lowest income beneficiary groups, so-called poorest of the poor, by supporting specific activities on agriculture, infrastructure, livestock, forestry, women development and income generation. Project villages represent 13% of the overall villages in the region. The target group includes; 4% of villages, mainly located in high forest and mountain parts of the southern zones, have very poor and depleted resources with poor or no road connections, poor communication and high migration. The project studied the implementation of agricultural and livestock activities. Target villages were selected on their relative poverty and interest in the activities promoted by the project (IFAD, 1995).

Livestock has important economic potential in the Ordu Giresun Provinces and they have got approximately 1.18% of pasture land areas in Turkey. The yield of these pastures and uplands is higher than the average in Turkey. Although, the grass yield in the region is high, because of uncontrolled grazing, grass quality is not at desired levels. The average of cattle breeds' culture is approximately 11% in Ordu Giresun Provinces. Climate and topography have an important impact on the location and type of animal husbandry. In the last ten years, the number of sheep, goats and cattle decreased in the region at the rate of 42, 44 and 38%, respectively. One of the important reasons for this decrease was the lack of enough quality forage production; another important reason was the farmers did not have enough knowledge about animal care, animal feeding and animal husbandry. In Ordu and Giresun provinces, there are total 134000 agricultural holdings; 65% are involved in both crop production and animal husbandry and 35% in only crop production. There are 77 agricultural holdings which operate only animal husbandry in Giresun while there are none in Ordu. Cattle and sheep farming are generally undertaken by small-scale family enterprises (MARA, 2007).

The livestock sector in Turkey will be the locomotive of rural development as in the whole world, because no country in the world has achieved rural economic development without having developed the livestock sector (Aral, 1996).

The purpose of this study was to evaluate the activities for the livestock sector considering with the scope, purposes and results of OGRDP and revealing the contributions of these activities to the livestock sector in Ordu and Giresun provinces.

MATERIALS AND METHODS

The data for this study was obtained from Baseline Surveys and Final Surveys which were conducted in OGRDP. Baseline Surveys were conducted with a total of 996 farmers in 280 villages of Ordu (526 farmers) and Giresun (470 farmers) provinces in 1997-2000 period. Final Surveys were conducted with the same farmers in 2006. The survey was carried out by the Project Monitoring and Evaluation Unit. Considering the aim of this study, data only

relating to the livestock sector was used in the evaluation. In addition, the project completion report and other related researches were used in this study. Simple average, the absolute and relative distributions were calculated in the analysis of the data. Calculations and tables were performed by Excel software (Excel, 2003). The obtained findings were interpreted with Tables.

RESULTS AND DISCUSSION

Credit Distributed by ORKOY in Project

In developing countries, agricultural credit is considered an important factor for stimulating agricultural production, rural development and promotes standard of living, particularly among small farmers (Masawe, 1994). Adebayo and Adeola (2008) described agricultural credit as the process of obtaining control over the use of money, goods and services in the present in exchange for a promise to repay at a future date. The crucial role of credit in agricultural production and development can also be evaluated by considering the amount of problems resulting from the lack of it. The provision of credit to the rural sector in developing countries has experienced a number of problems. The first major problem has been that because most developing countries face a shortage of lending funds, they tend to depend heavily on external funds from donor agencies or governments to implement their credit programmes. Secondly, most rural credit programmes have not been able to reach the poor small farmers they are intended to help and instead, are diverted to richer, big farmers.

In theory, farmers can obtain loans from governmental financial institutions for agriculture, commercial banks and private moneylenders in Turkey. However, in practice, access to loans for the small-scale farmers was limited, especially at commercial banks. Thus, farmers often borrowed from private moneylenders and suffered from high interest rates. The Bank for Agricultural and Agricultural Cooperatives was the only governmental agricultural bank to provide loans for small-scale farmers at a special, low interest rate. In modern farming business in Turkey, provision of agricultural credit is not enough but efficient use of such credit has become an important factor in order to increase productivity.

The level of rural finance in Turkey is low compared with most other countries. A recent World Bank rural finance study indicated that for Turkey as a whole, only 37% of the rural households had ever borrowed. Formal rural finance has been provided mainly by the state-owned Ziraat Bank and Agricultural Credit Cooperatives (ACCs). These institutions have a wide cover of rural areas. Ziraat Bank has local branches that cover 95% of the rural population, while ACCs cover 92%; in contrast, the large private bank reviewed in the study covers only 4% of the rural population (IFAD, 2006).

Because of the importance of rural poverty in the forest villages, one of the four central agencies of the Ministry of Forestry (MOF) is the General Directorate of Forest and Village Relations (ORKOY). The main objective of the ORKOY is protection, improvement and maintenance of the forests and social and economical development of the forest villagers (Turker *et al*., 2003). The ORKOY funds, provide low cost finance generating agricultural activities (bee-keeping, livestock development, greenhouses, mushroom producing, fish farming etc.) in village households in forest areas (MOF, 2001).

Loans distributed by ORKOY within scope of OGRDP for sheep breeding, dairy cattle, beekeeping, trout production activities are given in Table 1. ORKOY distributed 1 753 units of loan between 2000 and 2005, particularly for dairy cattle, sheep breeding and beekeeping activities. Project interventions has made the highest contribution by supporting the sheep breeding (62.71%), which was followed by dairy cattle (29.83%) and beekeeping (7.37%). ORKOY has distributed an average of 6 to 8 units of loan per village.

Table 1: Loans distributed by ORKOY in the project (2000-2005)

Type of credit	No. of farm planned for credit distribution	No. of farm distributed loans	Realization rate (%)	Amount of loans distributed (TL)	Loans distributed (%)	Amount of loans distributed per farm (TL)*
Dairy cattle breeding	2 179	679	31.16	2 180 508	29.83	3 211.35
Sheep breeding	1 035	939	90.72	4 584 599	62.71	4 882.43
Beekeeping	681	134	19.68	538 800	7.37	4 020.90
Trout production	59	1	1.69	7 000	0.10	7 000.00
Total	3 954	1 753	44.33	7 310 907	100.00	4 170.51

Source: MARA (2006b) and own calculations. *Average dollar price for the period 2000-2005 (1 USD = 1.29 TL)

Fodder Crops Production

The share of the pastures and meadows area in total agricultural area is 23.8% in Turkey. The share of the forage crop production area in total arable lands is about 3%. Although, there has been a slight increase in recent years, this figure is far behind the desired level. Even if farmers have no land, most village families own a few animals. Livestock production in Turkey puts high grazing pressure on natural pastures and is limited by the quality of its rangelands. Principally, the rehabilitation of these grazing resources is designed to foster roughage production and the introduction of forage species into crop rotations is to improve feed resources. However, with the large livestock population and the reliance on natural pasture production, range rehabilitation is almost impractical and therefore improving forage cultivation in cropping systems is crucial. To increase feed legume production, the introduction of forage crops into cereal and industrial crop rotations is essential (Firincioglu, 2007). In order to have proper animal husbandry it is necessary to improve feeding conditions together with genetic improvement of native breeds. Animal production is mostly based on poor pasture and insufficient strove basic on poor pasture and insufficient storage and grass with low nutritional value in Turkey. Especially intensive dairy cattle operations are making more use of concentrates then the other type of animal husbandry. Farmers are suffering because of the cost of the concentrate. This condition negatively influences the development of animal production (Gurel and Koc, 2005).

Project interventions designed to reduce feed scarcity through better rangeland management practices were introduced. The project strategy was to reduce feed deficiency by promoting alfalfa, Hungarian wetch, animal beet and maize silage crops extensively. Support for livestock was evolved through project credit provided by ORKOY to the beneficiaries for sheep breeding and dairy cattle. As a result of external factors, the project did not accomplish its objective by means of rangeland improvement activities. Laws and regulations concerning rangeland practices led to serious limitations. Since no progress has been made regarding range development, the project developed a new strategy to improve animal feed conditions. The major focus has been given to the expansion of fodder crops, particularly to the distribution of alfalfa seed (MARA, 2006a).

The realizations of fodder crop activities are given in Table 2. In order to improve fodder crops and range, the following activities were carried out in the project villages; fertilization in 122 ha meadow, agricultural control of 319.10 ha, improvement of feed crops in 2 606.10 ha area and 601.95 tons of made of silage. Alfalfa exceeded given planned by almost 7 times (648.13%). Silage maize, fodder beet and Hungarian wetch are progressing quite well with the achievement rates of 359, 151.53 and 123.15%, respectively. But, meadow fertilizer, sainfoin, range seedling and made of silage remains lower than the planned levels with an achievement rate of 61, 10.53, 10 and 5.47%, respectively. Another achievement is accomplished by the support of the production of fodder crops. Project realizations in fodder crops production were substantially higher than planned. Project interventions certainly help

Table 2: Realizations of fodder crop activities

Project activity	Unit	Planned	Realized	Rate of realization (%)	No. of farm	No. of villages	Realized of per village	Realized of per farm
Alfalfa	ha	136	881.45	648.13	1101	85	10.37	0.80
Animal beet	ha	183	277.30	151.53	1264	131	2.12	0.22
Hungarian wetch	ha	550	677.30	123.15	943	121	5.60	0.72
Made of silage	Ton	11000	601.95	5.47	470	82	7.34	1.28
Pasture improvement	ha	-	472.30	-	-	1	472.30	-
Agricultural control on pasture	ha	-	319.10	-	-	3	106.37	-
Meadow fertilizer	ha	200	122.00	61.00	92	22	5.55	1.33
Range seedling	ha	100	10.00	10.00	-	1	10.00	-
Sainfoin	ha	551	58.00	10.53	81	27	2.15	0.72
Silage of maize	ha	200	718.00	359.00	1593	161	4.46	0.45

Source: MARA (2006b) and own calculations

Table 3: Area and yields for Alfalfa and Hnngarian wetch

Crops	Average yield and area	Before project	After project	Growth rate (%)
Alfalfa	Yield (kg ha^{-1})	2 910.00	4 340.00	49.14
	Area per farm (ha)	0.73	1.45	100.00
Hungarian wetch	Yield (kg ha^{-1})	1 130.00	2 250.00	99.12
	Area per farm (ha)	1.60	2.42	51.25

Source: Baseline and final surveys and own calculations

farmers reduce their deficit due to the inability to accumulate or purchase enough storable feed. After the project, average yield and cultivated area increased for alfalfa and Hungarian wetch crops (Table 3).

Livestock Production

Livestock production has a declining trend in Ordu Giresun Provinces, but the project interventions brought about positive changes for target the villages. Improved feed conditions and the introduction of better livestock management practices increased milk yield significantly. This improvement was most evident in the daily milk production. There is a decrease in percentage of household owning dairy cattle and sheep. Farmers sell ovine and bovine animals because of low yield caused by insufficient feeding due to high input price, some farmers give up breeding because of marketing problems. On the other hand, the average number of cattle per household has increased, since some households have overcome feeding problems, by producing fodder crops and making silage. Developments in livestock production in the project area are given in Table 4. The average number of animals per farm, milk yield and milk production increased due to the project interventions. The average number of sheep, domestic cattle and cross breed cattle per farm increased. The rates of increase were 29.03, 15.79 and 25%, respectively. The rates of annual milk production increased 26.39, 19.30 and 4.13% for sheep, cross breed cattle and domestic cattle, respectively.

Farmer Training and Livestock Activities

Information is a vital resource for farmers; without it they cannot make the best use of other resources at their disposal (Ozcatalbas *et al*., 2004). Training is defined as the act of increasing the knowledge and skills of an employee in doing a particular job (Flippo, 1965). Training is mostly directed at improving the ability of the individual to do their job more effectively and efficiently. Farmer training services are important policy tools in rural development. The training activities aimed to teach farmers informally the ways to improve their agricultural practices so that they can adopt new productivity and profit increasing

technologies in their farming activities (Atsan *et al*., 2009). The solutions for the problems faced by the livestock production and the acquisition of new techniques and application are possible through extension and development studies. As a result of implementing various rural development programs, Turkey has an important level of experience in farmer training and rural development. However, to what extent programs are utilized by farmers is subject to discussion.

In the project, 22,506 farmers participated in farmer meetings about different topics related to livestock sector during the years from 1998-2005. Under the training of women farmers 5,722 women farmers were trained in different topics related to livestock sector. In this period 11 beekeeping courses were organized. Besides, 31 field demonstrations were organized on 4 different topics. Field demonstrations for fodder crops created interest among villagers and new technologies were adopted. The rate of progress regarding farmers meetings and training of women farmers was very high (Table 5).

Regarding animal breeding; distribution of 119 steer bulls, distribution of dairy cattle and calf feed, reconstruction of 50 animal shelters, construction of 8 animal ponds, the purchase of 137 tons animal feed, 97 head modern calf growing techniques, 3,289 head artificial insemination and 26,852 head natural inseminations were carried out. Also, 90 queen bees, 77 unit (50 young turkey per unit) young breeding turkey and 7,500 kg feed were distributed (Table 5).

Table 4: Development in livestock production

Type of animal	Before project	After project	Growth rate (%)
No. of average animal (head farm^{-1})			
Cattle (Domestic)	3.80	4.40	15.79
Cattle (Cross breed)	4.00	5.00	25.00
Sheep	31.00	40.00	29.03
Average daily milk production (head kg^{-1})			
Cattle (Domestic)	3.90	5.10	30.77
Cattle (Cross breed)	7.00	8.70	24.29
Sheep	0.60	1.10	83.33
Average annual milk production (head kg^{-1})			
Cattle (Domestic)	1 550.00	1 614.00	4.13
Cattle (Cross breed)	2 212.00	2 639.00	19.30
Sheep	72.00	91.00	26.39

Source: Baseline and final surveys and own calculations

Table 5: Farmer training and livestock activities

Activities	Unit	Planned	Realized	Realization rate (%)
Farmer training				
Beekeeping course	Number	-	11	-
Farmers meeting	Farmers	12 000	22 506	187.55
Exhibition and encouragement comp.	Number	120	17	14.17
Field days/demonstrations	Number	150	31	20.67
National farmer technical tours	Number	20	22	110.00
Training of rural women	Farmers	3 500	5742	164.06
Livestock activities				
Distribution of queen bee	Number	-	90	-
Colony of bee	Number	-	420	-
Rehabilitation of animal house	Number	200	50	25.00
Distribution of breeding bull	Number	250	119	47.60
Purchase of animal feed	Ton	200	137	68.50
Distribution of young turkey feed	Kg	-	7 500	-
Young turkey breeding	Number	-	77	-
Distribution of sheep	Number	-	240	-
Modern calf growing techniques	Number	250	97	38.80
Building of animal ponds	Number	25	8	32.00
Artificial insemination	Number	11 000	3 289	29.90
Natural insemination	Number	28 000	26 852	95.90

Source: MARA (2006b) and own calculations

CONCLUSIONS

Implemented project activities contributed to the farmers directly and indirectly. Project interventions provided the certain increase in farmers' capacities and knowledge level. Improvements were provided in the number of animals per farm, milk yield, livestock production, fodder crops production and fodder crops yield within the project activities. If this improvement is reflected in production then the living conditions and incomes of farmers will increase. However, it's difficult to say that these improvements will be sufficient. Because, with the end of the project, Village Development Plans (VDP) and Village Development Committee (VDC) will probably lose its functionality. In this manner, project contributions will remain solely a financial contribution rather than achieving a structural change or giving strategic direction towards efficient and sustainable operations.

As a result, to solve problems and help the livestock sector in Ordu Giresun Provinces, some important steps should be taken: Rural development policies in Ordu Giresun Provinces must consider the need to make livestock holdings an economically optimum size. Continuity of farmer participation in farmer training and extension and rural development activities should be ensured, as a requirement of participatory rural development. Activities which consider farmers' problems and requests should be given priority. Livestock holdings should be supported to enable them to modernize. The Government should educate farmers to use adapted genotypes and develop feeding systems and improve production systems to increase livestock productivity. Besides, these activities should be supported with livestock policies which are suitable for this regions needs.

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