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Comparison of the Views of Local People Who Directly Benefited and Did Not Benefit from the Murat River Rehabilitation Projects

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Micro-watershed, Chi-square independence test, New agricultural technology, İndividuals directly benefiting from the project, İndividuals not benefiting from the project

Abstract: This research was carried out to compare the perspectives and satisfaction of local people who benefited and did not benefit from projects implemented in micro-catchments in the provinces of Bingöl, Elâzığ, and Muş. The survey, focus group (FG) interviews, and key informative (KB) interviews were conducted in selected villages between the 16th and 25th of August, 2021. The "Chi-square independence test" was used to compare beneficiary and non-beneficiary responses to some questions. It was determined that the participants were generally satisfied with the project activities from which they benefited. Furthermore, the majority of people agreed that such projects should be continued. When individuals who didnt benefit from the project were statistically compared, it was determined that there were significant positive developments such as the use of new agricultural technology, increased production area, increased irrigated land, and increased use of forests and pastures. Within the context of all of this information, it is thought that the project is an important source of development opportunity for the region and that this level of development will emerge more clearly in the coming years.

Murat Nehri Rehabilitasyon Projelerinden Doğrudan Faydalanan ve Faydalanmayan Yöre Halkının Görüşlerinin Karşılaştırılması

Anahtar Kelimeler
Mikro havza, Ki kare bağımsızlık testi, yeni tarımsal teknoloji, projeden doğrudan

Öz: Bu çalışma; Bingöl, Elâzığ ve Muş illerinde yer alan mikro havzalarda uygulanan projelerden faydalanan ve faydalanmayan yöre halkının proje hakkındaki görüş ve memnuniyetlerinin karşılaştırılması amacıyla yapılmıştır. Araştırmada; 16-25 Ağustos 2021 tarihleri arasında seçilen köylerde yapılan anket çalışması, odak grup (OG) görüşmeleri ve kilit bilgilendirici (KB) görüşmeler birincil verileri oluşturmuştur. Projeden doğrudan faydalanan ve faydalanmayan bireylerin bazı sorulara verdiği cevapların karşılaştırılmasında "Ki kare bağımsızlık testi" kullanılmıştır. Katılımcıların genel olarak yararlandıkları proje faaliyetlerinden memnun olduğu sonucuna varılmıştır. Ayrıca bireylerin çoğunluğu bu tür projelerin devam etmesi gerektiği şeklinde görüşlerini ifade etmişlerdir. Projeden

faydalanan bireyler, projeden faydalanmayan bireyler	faydalanmayan bireyler ile faydalanan bireyler istatistiki olarak karşılaştırıldığında; yeni tarımsal teknoloji kullanma, üretim sahasını çoğaltma, sulanan araziyi arttırma, ormanlardan ve meralardan daha çok faydalanma gibi önemli olumlu gelişmelerin olduğu belirlenmiştir. Bütün bu bilgiler çerçevesinde projenin bölge için kalkınma açısından önemli bir fırsat kaynağı olduğu ve bu kalkınma düzeyinin gelecek yıllarda daha net bir şekilde ortaya çıkacağı düşünülmektedir.

1. INTRODUCTION

The Murat River Basin Rehabilitation Project (MRWRP) aims to ensure sustainable use of vegetation, soil, and water resources, natural resource rehabilitation, sustainable land management, increasing the welfare of the region's people, providing employment, reducing migration from rural to urban areas, landslide and flood control, and improving transportation [1,2,3,4]. The General Directorate of Forestry is the MRWRP's main executive, and the General Directorate of Combating Desertification and Erosion is in charge of monitoring and evaluation. Within the scope of the project, which was planned to be implemented in 25 micro-catchments in the provinces of Bingöl, Elazığ, and Muş, 36 basins, 292 villages, 20 thousand 850 households, and 131 thousand 52 citizens benefited directly or indirectly.

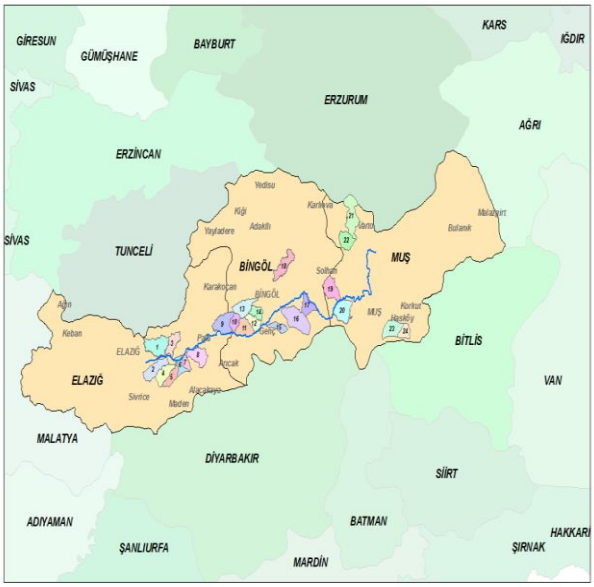

Figure 1. Provinces where MRWRP is implemented

Activities Performed Under the Project

Investments for the improvement of natural resources

It has been used for afforestation, soil conservation and erosion control, rehabilitation of degraded oak forests, and improvement of pasture and grazing areas.

Investments to Increase Income and Improve Living Conditions

Improvement of wheat and barley yield, improvement of animal production (forage crop production in wet and dry areas, improvement of animal shelters (barn), improvement of plant production (establishment of indoor orchard, field vegetable production, greenhouse vegetable production), small-scale irrigation sub-investments (water storage ponds, improvement of soil irrigation channels, in-field drip irrigation, village fountain for common use), the development of beekeeping and the introduction and dissemination of energy-efficient technologies (solar water heating units, house insulation (building insulation), energy-efficient (cooker) stoves, stone bread ovens for general use).

Education And Awareness Activities

To protect natural resources and raise the income level of the local people, training and awareness raising activities were carried out on the subjects of natural resource protection, use, and development, increasing agricultural productivity, improving animal and plant production, promoting environmentally friendly practices, organic agriculture, contracted sapling production, and product marketing.

Strengthening Institutional Capacity

Project; through experience gained in project construction techniques, project approach, logical framework, soil conservation techniques, monitoring and evaluation, and evaluation of non-wood product opportunities, institutions' capacity is increased and inter-institutional cooperation is developed.

Studies were conducted to determine the satisfaction level of local people who benefited from the projects implemented in micro-basins located in Bingöl, Elâzığ and Muş provinces by [5], and to determine the opinions of local people who did not benefit from the Murat River Rehabilitation Projects by [6]. This research was carried out to compare the perspectives and satisfaction of local people who directly benefited and did not benefit from projects implemented in micro-catchments in the provinces of Bingöl, Elâzığ, and Muş.

2. MATERIAL AND METHOD

The standard, beneficiary and non-beneficiary questionnaire prepared for the International Fund for Agricultural Development (IFAD) Annual Results Surveys was finalized in agreement with the Administration regarding objectives of the project. This survey was applied in the selected villages between 16-25 August 2021. In addition, the research team conducted focus group (FG) interviews and key informative (KB) interviews as well in the selected villages. Within the scope of the project, 241 villages and in 34 micro-catchments in question were specified in the technical specifications for the study to be sampled. Survey study and other studies were carried out by systematic random

sampling method in 30 villages where project activities were implemented and selected in consultation with local authorities. Considering the number of villages within the scope of the project in the provinces, 12 villages from Elazığ, 11 from Bingöl and 7 from Muş were determined. For this, the village names sent from the project area were listed alphabetically; the systematic random sampling coefficient was determined by dividing the total number of villages by the number of villages to be studied. By starting from the first village and skipping with the determined coefficients, the randomly selected villages were determined as the villages to be studied. In this context, a survey was conducted with 336 beneficiaries. 37.3% of the surveys were carried out in the villages of Bingol, 34.8% in the villages of Elâzıg and 27.9% in the villages of Muş (Table 1). When comparing the answers of beneficiaries and non-beneficiaries to some questions, whether there is a relationship between the two questions was anaishallysed by cross-tables and the *chi-square* independence test for these tables. The chi-square independence test has been used in many studies [7,8,9,10,11,12,13,14).

Table 1. Number of villages surveyed on provincial basis

Provinces	Number of villages	Number of surveys	Ratio
Bingöl	11	125	37.3
Elazığ	12	117	34.8
Muş	7	94	27.9
Total	30	336	100

3. RESULTS

The relationship between the availability of cash income sources and beneficiaries and non-beneficiaries is given in Table 2. It was determined that 61% of the individuals who answered this question had a cash income source on the general average, and 39% did not have a cash income source. While the rate of having a source of cash income for individuals benefiting from the project was 59.1%, this rate was determined as 64.9% for those who did not benefit from the project. It has been determined that there is no statistically significant relationship between having a cash income source and being a project beneficiary. In the study conducted by [15] this article evaluates the impact of the Livelihood Empowerment Against Poverty (LEAP) program on reducing rural poverty in the Karaga district of Northern Ghana. Utilizing a mixed-methods research design, the study compares the livelihoods of LEAP beneficiaries with those of non-beneficiaries. The findings indicate that the program significantly contributes to poverty reduction among the poor and vulnerable populations. The article recommends that school children benefiting from LEAP should be exempt from paying additional costs such as examination and PTA fees. Additionally, it suggests establishing a subsidy system for agricultural inputs to empower beneficiaries to engage in farming, thereby fostering long-term poverty alleviation. The study which was carried out by [16] aimed at determining variations in access to basic livelihoods between programme beneficiaries and non-beneficiaries. The results indicate that program beneficiaries were approximately 4.5 times more likely to access at least three meals per day compared to non-beneficiaries. Additionally, beneficiaries were about 3.9 times more likely to achieve an average dietary diversity score of 4.0 compared to non-beneficiaries. Furthermore, beneficiaries had roughly 3.3 times the odds of establishing an income-generating activity to enhance their income compared to non-beneficiaries. These results suggest that the program's impact was statistically significant across all five indicators examined in the study. In a previous study conducted in Nigeria the results indicated that socio-economic characteristics significantly influence the income and productivity of respondents in the study area. The findings showed a male dominance among both beneficiary and non-beneficiary farmers. Most respondents, both beneficiaries and non-beneficiaries, had farm sizes between 0.5 and 1.0 hectares before and after the NSPFS project, respectively. Statistical analysis revealed a significant difference between the socio-economic characteristics of NSPFS project beneficiaries and non-beneficiaries. The regression result showed that NSPFS project has positive impact on crop productivity of beneficiary farmers in the study area. The net farm income realized by the responder is indicates an increase in the net farm income of both beneficiaries and non-beneficiaries. NSPFS had impact on crop productivity of beneficiaries. Other reasons by the non-beneficiaries for not participating include lack of capital, not being a member of any farmer's cooperative society and also bad experience from other agricultural projects [17].

Table 2. The relationship between the availability of cash income sources and beneficiaries and non-beneficiaries

The status of having a cash income source or not		**Groups**		**Overall average/Total**
		Non-beneficiaries	**Beneficiaries**	
Yes	Number	109	195	304
	Ratio (%)	64.9	59.1	61
No	Number	59	135	194
	Ratio (%)	35.1	40.9	39
Total	Number	168	330	498
	Ratio (%)	100.0	100.0	100
Chi square and p value	**1.569 and 0.210**			

The relationship between the main income source of the household and beneficiary and non-beneficiary individuals was found statistically significant. Considering the general averages of the individuals who answered this research question, the rate of agricultural production and sales as the main income source of the

households is 22.2%, the rate of animal production and sales is 30.7%, the rate of unqualified labor is 6.4%, the rate of salaries and wages is 25.5%, the rate of state support is determined as 5.6% and the rate of other income sources is determined as 8.6% (Table 3). The rate of the project beneficiaries having agricultural production and sales, animal production and sales income sources was found higher than the rate of individuals who were not beneficiaries. It has been determined that the household income sources of non-beneficiary individuals are salaries and wages at a high rate. The present study aimed to examine the impact of family income and conditional cash transfers on changes in household food insecurity (FI) status in a highly vulnerable municipality in Northeast Brazil. There was a 17.5% reduction in food insecurity (FI) prevalence over time, with 24.5% of families who were food insecure in 2011 becoming food secure by 2014. After adjustments, it was found that families who did not see an increase in their total household income or experienced a reduction in their cash transfer amount were at a higher risk of persistent FI over time. Without the cash transfer program, approximately 10% of the families that transitioned from food insecure to food secure would have remained food insecure. The decrease in food insecurity (FI) occurred in an area of extreme climatic and social vulnerability. These changes were more closely associated with the cash transfer program than with the increase in family income over time [18].

Table 3. The relationship between the main source of income of the household and beneficiaries and non-beneficiaries

Main source of income of the household		**Groups**		**Overall average/Total**
		Non-beneficiaries	**Beneficiaries**	
Agricultural production and sale	Number	13	95	108
	Ratio (%)	7.8	29.8	22.2
Animal production and sale	Number	33	116	149
	Ratio (%)	19.8	36.4	30.7
unqualified labor force	Number	17	14	31
	Ratio (%)	10.2	4.4	6.4
Salaries wages	Number	67	57	124
	Ratio (%)	40.1	17.9	25.5
State support	Number	9	18	27
	Ratio (%)	5.4	5.6	5.6
Other	Number	25	17	42
	Ratio (%)	15.0	5.3	8.6
Total	Number	167	319	486
	Ratio (%)	100.0	100.0	100.0
Chi square and p value	**74.902 and 0.000*** **			

***: p≤0.01

Individuals who answered the questions of his survey generally, 91.9% stated that they had no other source of income, and 8.1% stated that they had another source of income. The rate of the beneficiaries having other income sources was calculated as 3.7%, while the rate of those who did not benefit from the project was found as 16.1% (Table 4). The relationship between having another source of income and beneficiary and non-beneficiary individuals was found statistically significant. Micro watershed projects abroad have yielded a range of impactful results, showcasing the effectiveness of integrated land, water, and vegetation management. For instance, in Mexico, the *Strengthening Project for the National Micro-Watershed Programme* faced challenges with budget allocation and government support, but it still managed to implement numerous conservation workshops and small community-based projects for soil and water management [19]. Meanwhile, in India, the *Karnataka Watershed Development Project* (Sujala) made extensive use of satellite imagery and GIS technologies to plan and monitor interventions, helping to rejuvenate rural landscapes and boost agricultural productivity in semi-arid regions. This project highlighted the role of technology in watershed management and earned several prestigious awards [20]. Another study in Gujarat examined the impact of watershed programs on soil erosion, groundwater levels, and socio-economic indicators, finding notable improvements. These projects used a Watershed Performance Benchmarking Index (WPBI) to evaluate success across various metrics, such as crop productivity, income generation, and migration reduction [21].

Table 4. The relationship between having another source of income and beneficiaries and non-beneficiaries

Groups		The status of having another source of income		Total
		Yes	No	
Non-beneficiaries	Number	27	141	168
	Ratio (%)	16.1	83.9	100.0
Beneficiaries	Number	11	288	299
	Ratio (%)	3.7	96.3	100.0
Overall average/Total	Number	38	429	467
	Ratio (%)	8.1	91.9	100.0
Chi square and p value	**22.099 and 0.000*** **			

The relationship between ownership of agricultural land and beneficiary and non-beneficiary individuals is given in Table 5. It was determined that half of the individuals who answered this research question generally owned agricultural land and half of them did not. Ownership rate of individuals benefiting from the project was determined as 50.6%, and ownership rate of individuals not benefiting from the project was determined as 48.8%. One example is the "Wellness and Agriculture for Life Advancement" (WALA) project in Malawi. This project, which focused on improving watershed management and livelihoods, demonstrated substantial benefits in terms of crop yields, soil quality, and resilience to climate shocks [23].

Table 5. The relationship between ownership of agricultural land and beneficiary and non-beneficiary individuals

Groups		Ownership status of agricultural land		Total
		Yes	No	
Non-beneficiaries	Number	82	86	168
	Ratio (%)	48.8	51.2	100.0
Beneficiaries	Number	165	161	326
	Ratio (%)	50.6	49.4	100.0
Overall average/Total	Number	247	247	494
	Ratio (%)	50.0	50.0	100.0
Chi square and p value	**0.144 and 0.704**			

Considering the relationship between the increase in the production area compared to the previous year and the beneficiary and non-beneficiary individuals, it has been concluded that there is a statistically significant relationship between the production area situation, which is determined to be dependent on the beneficiaries of the project and those who do not benefit from the project, and benefiting or not benefiting from the project. While the rate of individuals expressing that the production area has increased compared to the previous year is 11.3%, this rate was found as 10.4% for individuals who are project beneficiaries and 50% for individuals not benefitting from the project. Half of the individuals who did not benefit from the project stated that the production area increased compared to the previous year (Table 6). One example is the "Wellness and Agriculture for Life Advancement" (WALA) project in Malawi. This project, which focused on improving watershed management and livelihoods, demonstrated substantial benefits in terms of crop yields, soil quality, and resilience to climate shocks [23]

Table 6. The relationship between the increase in the production area compared to the previous year and the beneficiary and non-beneficiary individuals

Groups		The increase in the production are compared to last year		Total
		Yes	No	
Non-beneficiaries	Number	3	3	6
	Ratio (%)	50.0	50.0	100.0
Beneficiaries	Number	27	232	259
	Ratio (%)	10.4	89.6	100.0
Overall average/Total	Number	30	235	265
	Ratio (%)	11.3	88.7	100.0
Chi square and p value	**9.149 and 0.002****			

**: p≤0.05

Individuals who answered this survey question stated that 53.8% of them do animal husbandry in general and 46.2% of them do not. The rate of animal husbandry was found as 57.8% for the project beneficiaries and 45.8% for the individuals who did not benefit from the project. These two situations on whether the status of doing animal husbandry depends on being a project beneficiary or not has been determined as a statistically significant relationship. It was concluded that individuals who are project beneficiaries have a higher rate of animal husbandry (Table 7). One example is the "Wellness and Agriculture for Life Advancement" (WALA) project in Malawi. This project, which focused on improving watershed management and livelihoods, demonstrated substantial benefits in terms of crop yields, soil quality, and resilience to climate shocks [23].

Table 2. The relationship between the status of animal husbandry and beneficiary and non-beneficiary individuals

Groups		**The status of animal husbandry**		**Total**
		Yes	**No**	
Non-beneficiaries	Number	77	91	168
	Ratio (%)	45.8	54.2	100.0
Beneficiaries	Number	192	140	332
	Ratio (%)	57.8	42.2	100.0
Overall average/Total	Number	269	231	500
	Ratio (%)	53.8	46.2	100.0
Chi square and p value	**6.461 and 0.011****			

The relationship between the status of earning income from agricultural and animal production and the beneficiary and non-beneficiary individuals is given in Table 8. While the overall rate of individuals earning income from agricultural and animal production is 33.7%, this rate is determined as 34.5% for individuals benefiting from the project and 32.1% for those who do not benefit from the project. One example is the "Wellness and Agriculture for Life Advancement" (WALA) project in Malawi. This project, which focused on improving watershed management and livelihoods, demonstrated substantial benefits in terms of crop yields, soil quality, and resilience to climate shocks [23].

Table 8. The relationship between the status of earning income from agricultural and animal production, and beneficiary and non-beneficiary individuals

Groups		**The status of earning income from agricultural and animal production**		
		Yes	**No**	**Total**
Non-beneficiaries	Number	54	114	168
	Ratio (%)	32.1	67.9	100.0
Beneficiaries	Number	114	216	330
	Ratio (%)	34.5	65.5	100.0
Overall average/Total	Number	168	330	498
	Ratio (%)	33.7	66.3	100.0
Chi square and p value	**0.287 and 0.597**			

Considering the relationship between borrowing status and beneficiary and non-beneficiary individuals, it was determined that 33.9% of the individuals benefiting from the project borrowed money, and 27.8% of the individuals who did not benefit from the project borrowed money. It was determined that 33.6% of the individuals who replied this question, on general average, borrowed (Table 9).

One example is the "Wellness and Agriculture for Life Advancement" (WALA) project in Malawi. This project, which focused on improving watershed management and livelihoods, demonstrated substantial benefits in terms of crop yields, soil quality, and resilience to climate shocks [23].

Table 9. The relationship between borrowing status and beneficiary and non-beneficiary individuals

Groups		**Borrowing status**		
		Yes	**No**	**Total**
Non-beneficiaries	Number	5	13	18
	Ratio (%)	27.8	72.2	100.0
Beneficiaries	Number	113	220	333
	Ratio (%)	33.9	66.1	100.0
Overall average/Total	Number	118	233	351
	Ratio (%)	33.6	66.4	100.0
Chi square and p value	**0.290 and 0.590**			

In general, 25.9% of the individuals who answered this question stated that their household income level has improved. The rate of stating that the household income has improved for the individuals who benefited from the project was 23.6%, while the rate of the ones stating that the household income has improved for the individuals who did not benefit from the project was found as 30.4% (Table 10). In a previous study conducted in Nigeria the results indicated that socio-economic characteristics significantly influence the income and productivity of respondents in the study area. The findings showed a male dominance among both beneficiary and non-beneficiary farmers. Most respondents, both beneficiaries and non-beneficiaries, had farm sizes between 0.5 and 1.0 hectares before and after the NSPFS project, respectively. Statistical analysis revealed a significant difference between the socio-economic characteristics of NSPFS project beneficiaries and non-beneficiaries. The regression result showed that NSPFS project has positive impact on crop productivity of beneficiary farmers in the study area. The net farm income realized by the responder is indicates an increase in the net farm income of both beneficiaries and non-beneficiaries. NSPFS had impact on crop productivity of beneficiaries. Other reasons by the

non-beneficiaries for not participating include lack of capital, not being a member of any farmer's cooperative society and also bad experience from other agricultural projects [15].

Table 10. The relationship between the improvement in household income level and beneficiaries and non-beneficiaries

Groups		**The improvement in household income level**		**Total**
		Yes	**No**	
Non-beneficiaries	Number	8	160	168
	Ratio (%)	4.8	95.2	100.0
Beneficiaries	Number	78	252	330
	Ratio (%)	23.6	76.4	100.0
Overall average/Total	Number	129	369	498
	Ratio (%)	25.9	74.1	100.0
Chi square and p value	**2.620 and 0.106**			

The relationship between the project's job finding or improving working conditions and the relationship between beneficiary and non-beneficiary individuals was statistically significant. When the distribution of the opinions of the individuals who answered this question is examined, 63.1% of the individuals who benefited from the project thought that the project had an effect on finding a job or improving their working conditions. On the other hand, the rate of individuals not being project beneficiaries but thinking positively about the issue was determined as 4.8%. The impact of the project on finding a job or improving working conditions was determined as 41.3% in general average. It has been concluded that a high percentage of the individuals benefiting from the project think that the project has a positive effect on finding a job or improving working conditions (Table 11). The study revealed that the dependency ratio to total workers was 0.40 for beneficiary families and 0.26 for non-beneficiary families. It was found that there was a significant change in the area of major crops, increase in productivity and increase in net returns of beneficiary farms due to the interventions of the project. Return per investment of agricultural and horticultural products was higher in beneficiary farms than in non-beneficiary farms [22].

Table 11. The relationship between the project's ability to find a job or improve working conditions and beneficiary and non-beneficiary individuals

Groups		**The project's ability to find a job or improve working conditions**		**Total**
		Yes	**No**	
Non-beneficiaries	Number	8	160	168
	Ratio (%)	4.8	95.2	100.0
Beneficiaries	Number	178	104	282
	Ratio (%)	63.1	36.9	100.0
Overall average/Total	Number	186	264	450
	Ratio (%)	41.3	58.7	100.0
Chi square and p value	**147.86 and 0.000*** **			

The relationship between the forest utilization status and beneficiary and non-beneficiary individuals is given in Table 12. When the distribution of the opinions of the individuals who answered this question is examined, the overall average rate of the individuals benefiting from the forest is 37.3%, while this ratio is determined as 50.3% for the individuals benefiting from the project and as 3.8% for the non-beneficiaries. The relationship between forest utilization and beneficiary and non-beneficiary individuals was statistically significant. It has been determined that individuals benefiting from the project benefit from forests at a higher rate. One example is the "Wellness and Agriculture for Life Advancement" (WALA) project in Malawi. This project, which focused on improving watershed management and livelihoods, demonstrated substantial benefits in terms of crop yields, soil quality, and resilience to climate shocks [23]. In Bolivia, the concept of "watershed agreements" has been applied as a locally-driven, adaptive model for managing water resources and mitigating climate change. These agreements incentivize upstream landowners to conserve forests in exchange for benefits such as training in sustainable practices. This model has expanded significantly, with thousands of families now involved in watershed conservation efforts, covering vast areas of land. The success of this project highlights the importance of community engagement, reciprocal benefits, and local design flexibility in fostering sustainable environmental governance [24].

Table 12. The relationship between forest utilization and beneficiary and non-beneficiary individuals

Groups		**Status of forest utilization**		**Total**
		Yes	**No**	
Non-beneficiaries	Number	5	125	130
	Ratio (%)	3.8	96.2	100.0
Beneficiaries	Number	168	166	334
	Ratio (%)	50.3	49.7	100.0
Overall average/Total	Number	173	291	464
	Ratio (%)	37.3	62.7	100.0
Chi square and p value	**86.358 and 0.000*** **			

The relationship between the benefiting status of the common pasture land and the beneficiary and non-beneficiary individuals was statistically significant. When the distribution of the opinions of the individuals who answered this question is examined, it is determined that 53% of the individuals benefit from the pasture lands on the general average, while this rate is determined as 60.7% for the individuals who are project beneficiaries and 38.1% for the individuals who are not project beneficiaries (Table 13). It was determined that individuals benefiting from the project benefited from the common pasture land at a higher rate. The study revealed that the dependency ratio to total workers was 0.40 for beneficiary families and 0.26 for non-beneficiary families. It was found that there was a significant change in the area of major crops, increase in productivity and increase in net returns of beneficiary farms due to the interventions of the project. Return per investment of agricultural and horticultural products was higher in beneficiary farms than in non-beneficiary farms [22]

Table 13. The relationship between the status of benefiting from common pasture land and beneficiary and non-beneficiary individuals

Groups		**Status of benefiting from common pasture land***		**Total**
		Yes	**No**	
Non-beneficiaries	Number	64	104	168
	Ratio (%)	38.1	61.9	100.0
Beneficiaries	Number	199	129	328
	Ratio (%)	60.7	39.3	100.0
Overall average/Total	Number	263	233	496
	Ratio (%)	53.0	47.0	100.0
Chi square and p value	**22.731 and 0.000*** **			

4. DISCUSSION AND CONCLUSION

The percentage of project beneficiaries with agricultural production and sales, animal production and sales, and other sources of income was found to be higher than the percentage of non-beneficiaries. Individuals who benefited from the project had a lower rate of having other sources of income than those who did not benefit from the project. It was discovered that project beneficiaries have a higher rate of animal husbandry. It has been determined that a high percentage of those who benefit from the project believe that the project helps them find work or improves their working conditions. It has been determined that individuals who benefit from the project benefit more from forests and common pasture land.

In general, based on the information gathered from the participants, it is possible to conclude that the project activities resulted in positive developments in the villages and made a significant contribution to rural development. Furthermore, with the assistance of project activities, income-generating activities have increased in the villages. It has been concluded that the MRWRP activities have reduced the pressure on forest vegetation, and the improvements made in pasture areas have made significant contributions to animal husbandry. It was determined that the participants were generally pleased with the project activities from which they benefited. Furthermore, the majority of people agreed that such projects should be continued. When the individuals who do not benefit from the project are statistically compared to the beneficiaries, it has been determined that there are significant positive developments such as the use of new agricultural technology, increased production area, increased irrigated land, and increased use of forests and pastures. Within the context of all of this information, it is believed that the project is a significant source of development for the region, and that this level of development will become clearer in the coming years.

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