

## ANALYSIS OF THE IMPACT OF RURAL DEVELOPMENT PROJECTS ON LOCAL COMMUNITIES

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### Abstract

*Considering the huge economic and social disparities between urban and rural areas of Romania, it is important to investigate the local community perception on the perceived impact of the rural development strategies, provided that local strategies should be developed based on citizens' needs. The study represents a first step towards a more complex research to evaluate the degree of satisfaction and wellbeing of the rural communities from Cluj County, following the implementation of the rural development programs. The research was conducted on the basis of primary data obtained from citizens of Cuzdrioara, a commune from Cluj County which represents a particular case, as its position allows the direct connection to national roads. The data were analyzed using descriptive statistics and inferential statistics. The Chi-square test and Fisher's exact test were performed for comparisons of proportions, while Mann-Whitney test and Kruskal Wallis test were used for the comparisons of scale scores between respondents. Through the objectives of the Local Development Strategy, Cuzdrioara commune aims to improve the way of life of the inhabitants by achieving the objectives proposed in the strategy. Many projects have been completed, being positively assessed by the citizens. The public administration fulfilled the objectives established in the Local Development Strategy.*

**Key words:** sustainable development, standard of living, local development programs

### INTRODUCTION

In Romania there are still huge economic and social disparities between urban and rural areas [40]. It is worth considering that 87.1% of the total 238,391 km<sup>2</sup> surface is represented by rural areas and that 45.0% [24] of the population lives in rural area. Hence, the necessity of rural development projects is paramount [32]. The European Union included rural development into the European strategic policy and starting with 2005, it has officially created a special organism (European Agriculture Fund for Rural Development) to finance the rural area and support the investments following three major directions: increasing agriculture and forestry

competitiveness, improving the environment throughout a more efficient land management and increasing the quality of life in rural areas by encouraging economic activities [36]. A direct and logical consequence of implementing the rural development concept within the European policy is creating the adequate means of measurement in order to create and implement future improved strategies [8]. Simms et al. [39] built an index of local (rural) economic development – the rural economic capacity- RECI - tested in rural communities in Newfoundland and Labrador (Canada), trying to provide these communities with a useful tool for identifying strengths and weaknesses, as once identified, the community can base its strategic planning

process, namely the necessary measures for development. The International Development Association (IDA) created the Rural Access Index (RAI) in order to measure community development starting from the premise that isolation and lack of transport connections are the main reasons for poverty. Since the isolation of communities is considered a major factor leading to poverty and marginalization. [37]. A similar rural index was developed in China, but from a spatial-temporal perspective [18, 19] and a more complex one in Poland [23]. The Romanian Academy of Economic Studies developed an index for evaluating rural potential based on five dimensions and classified rural communes according to these dimensions [1]. At a global level, "Agenda 21" represented the programmatic document which drew the lines of sustainable development so that each generation could benefit from world resources. The process of implementing Local Agenda 21 encouraged the participation of the whole community (business environment, governmental and non-governmental organizations and individual citizens), on the premises that sustainable development refers to long-term planning and recognizes the interdependence between social, economic and environmental factors in affecting health and quality of life. The Local Agenda 21 tools are: "the Local Sustainable Development Strategy", the "Local Action Plan" and the "Priority Projects Portfolio"[44]. The National Development Plan is a specific concept of the European Cohesion Policy that pursues the balanced development of the Union's members by reducing development disparities between Member States/ regions of the Community. The European Commission's proposals on the management of the Structural Funds during the 2014-2020 programming period reflect an increased reorientation in support of efforts to achieve the Lisbon and Gothenburg key objectives, namely, increasing competitiveness, full and sustainable employment and environmental protection.

The Romanian development strategy comprised in the National Development Plan (NDP) 2014-2020 [30] focuses on the same

objectives, particularly increasing economic competitiveness; the development and modernization of transport infrastructure; protecting and improving the quality of the environment; developing human resources, increasing employment and combating social exclusion; developing rural economy and increasing productivity in the agricultural sector; and support the balanced participation of all regions of Romania in the process of socio-economic development. The regional development strategy is linked to Community policies and regulations, as well as to national development strategies. Its priority objectives are mainly focused on the areas of intervention of the Structural Instruments and the European funds that finance rural development and fisheries. It was estimated that by year 2020, disparities between the North-West region and the other regions of the country will be reduced in order to increase the standard of living of citizens [13]. Alongside these official objectives, it is required to investigate community perception on the perceived impact of the rural development strategies, provided that local strategies are built or should be built according to the citizens' needs [20]. Practice proved that participation was recognized to be an essential phase in building strategies for reducing wastages and a proper allocation of resources depending on sensitive domains [6, 18, 32] even if social obstacles often exist [45]. To our knowledge (as far as one can tell from the literature), a similar research involving the analysis of the community perception on the impact of the Local Development Strategies based on primary data collection has not been conducted in the North-West region to this date, even if the rural area drew the attention of other scholars [33, 40, 41].

Therefore, the objectives of the research were: (1) the analysis of residents' perception regarding the current state of fact in the Cuzdrioara Commune and (2) to identify the impact of the rural development strategies on the wellbeing of the community and on its sustainable development.

Public perception on sustainable rural development projects is crucial [6, 10, 15, 18,

32, 46], and must undergo thorough analysis, mostly because it has been observed that it is generally at the beginning that projects benefit from local support, but when restrictions arise and the consequences for their wellbeing are not very obvious, the support decreases [27] and sometimes conflicts appear. This aspect is neglected most of the time. Public participation, as a consequence of favorable perception on development project is a key-factor for building sustainable programs [25]. Community perceptions are also indicators which could be of a great help for policy-makers, facilitating the tracking of rural development progress and adjust it in time [6]. In order to achieve sustainability, it is believed that communities must be allowed to evolve in local organizations that could satisfy their local needs [9]. The need of public consensus was acknowledged by authorities in different countries. In the United Kingdom, The National Infrastructure Commission was in charge of building the national strategy for infrastructure in order to maintain the national competitiveness, understanding that community perception and consensus are vital, alongside the support of the authorities [11]. It is believed that a better civic engagement from the locals could lead to better and equitable results [21]. Locals' perceptions are sometimes surprising: a study analyzing the community perception from Canada highlighted a huge ignorance regarding community development [29].

The huge importance of a perception survey was recognized in both stages of an intervention action: before implementing a project in order to match it with actual and real needs of the community, and after the intervention to assess its impact [6]. For example, analyzing public perceptions on forestry projects in Panama was the key to improve the project design and management [17, 31]. Willingness to participate in community development projects was seldom visible in different communities, and not only for future projects, but also for the ongoing ones, as people understand that general projects are the precondition of their personal wellbeing [15]. There are cases when development projects are perceived as

Government responsibility and the community does not interfere [14].

The quality of life among the Romanian communes has often been studied [33, 40, 41, 43]. Scholars focused on the economic development of the rural communities in the North-West region of Romania, observing the pace of evolution for communities which had access to different financial resources. A study conducted among the peripheral communes of Cluj County [40] revealed that the major problems for the community are represented by the lack of infrastructure, shops and water. Similar results were obtained by other scholars [6, 31], which underlined that rural roads generate the largest impact in rural development index and income growth [6]. Another study was conducted in Vultureni Commune from Cluj County in order to analyze the community perception on implementing the concept of ecovillage, which revealed some generalized issues in the Romanian rural areas, particularly the lack of community trust in authorities, the lack of civic education [41].

With regards to the influence of socio-demographic variables on the perception regarding rural development programs it has been observed that these variables can have a significant influence on the perception regarding rural development programs. A social issue may sometimes arise from the women's role in the rural society, which sometimes represents a serious barrier for participation [2, 7, 35, 48]. With regards to gender, differences between the social situation and involvement in the public life were observed among the rural population of the member states of the European Union. While in the North-West countries women are more involved in the public life and have an active role within the public decision-making structures, the situation is quite different for women from the South-East countries including Romania [2]. In these areas, women perceive the quality of life as unsatisfactory because of lower incomes and lack of social services [7]. For example, in a rural area of Turkey, there is a problem regarding women's lack of knowledge about rural development programs or tourism, even if there is a

positive approach to visitors because of the perceived link between tourism incomes and development [2]. Related to tourism support, Mensah concluded that income and gender are the only variables which directly influence community participation, men being more participative than women [22], while Wang and Pfister [49] highlight that the female population is more supportive of the cultural aspects of tourism (art and crafts). Education is another issue in rural communities, as it was observed by Vixathep [48], it is often the privilege of men and therefore the limitation of women to public life becomes obvious.

## MATERIALS AND METHODS

The present study represents a first step towards a more complex research to evaluate the degree of satisfaction and wellbeing of the rural communities from Cluj County, following the implementation of the rural development programs. The research was conducted on the basis of primary data obtained from citizens of Cuzdrioara, a commune from Cluj County which represents a particular case, as its position allows the direct connection to national roads. This aspect is considered essential for a reasonable increase of wellbeing given that connectivity represents a key factor for economic development [37].

Among the 2,861 communes in Romania, the Cuzdrioara Commune occupies the 724th place according to its socio-economic development potential which was determined using five major factors, such as the endogenous potential, physical-geographical characteristics, human capital, economy and technical-utilitarian equipment [1].

The commune is situated on the Somesan Plateau in the middle of the Somes River, in the north-eastern part of Cluj County, bordering Bistrita-Nasaud County to the east, the commune of Mica to the south, the municipality of Dej to the west and Caseiu commune to the north. The administrative territory of the commune consists of three localities: Cuzdrioara (residence), Manasturel and Valea Girboului, villages 3 km and 6 km respectively from the administrative center.

The commune stretches over an area of 23.96 square kilometers [1].

The Local Sustainable Development Strategy 2014-2020 [15] of the Cuzdrioara commune is a complex document that provisions the vision and the way the local community aims to increase the quality of life of the commune's inhabitants. It is a flexible and dynamic working document, developed through a participatory process of the local community in accordance with the national development priorities contained in the National Development Plan. The strategy was developed based on the experience gained in the Local Agenda 21 project, applying a methodology to the local public administration of Cuzdrioara, and it is a programmatic document that responds to citizens' needs and makes them responsible both of the design phase and in its implementation. The local sustainable strategy is the document that indicates the path to achieve sustainable development [20].

A survey based on a questionnaire was conducted in order to achieve the objectives of the paper. The study aimed at measuring the perceptions of the rural residents regarding the benefits/impact of the development project through a questionnaire applied to 121 respondents, from Cuzdrioara, during a period of three months from February to April 2019. The questionnaire used consisted of three parts: (1): respondents' evaluation of the main problems of their commune; (2): evaluation of the impact of the implemented projects; (3): socio-demographic characteristics of the respondents. The convenience sampling method was used, due to its cost-effectiveness advantage i.e. the respondents were relatively easy to reach.

The data were analyzed using descriptive statistics and inferential statistics to investigate possible differences among respondents regarding demographic variables. The Chi-square test and Fisher's exact test (where appropriate) were performed for comparisons of proportions, while Mann-Whitney test and Kruskal Wallis test were used for the comparisons of scale scores between respondents. Intercooled STATA 10 was used for all statistical analyses (STATA

Corp., College Station, TX). A p-value of  $\leq 0.05$  was considered statistically significant.

## RESULTS AND DISCUSSIONS

Socio-demographic profile of respondents show that the sample is gender balanced. The young segment of respondents (18–33 years) is represented by almost half of respondents (43.8%), followed by the group aged 34-49 years, which represents 39.7% of the total sample. Respondents aged between 50 to 65 years old held only 14% of the respondents, while elders (aged 65+) held the smallest percentage of 2.5%. The sample is educated, since 65.3% of the respondents graduated from high school and 27.3% held a university degree (Table 1).

Table 1. Socio-demographic characteristics of the respondents

Variables	%
<b>Gender</b>	
Female	52.1
Male	48.9
<b>Age</b>	
18-33 years	43.8
34-49 years	39.7
50-65 years	14.0
>65 yeas	2.5
<b>Education</b>	
Less than high school	7.4
High school	65.3
Post-high school/University degree	27.3

Source: Own calculation on the basis of data from questionnaire.

From the point of view of rural development, the three main problems at community level mentioned by the respondents are: “street and pavement rehabilitation”, “sewerage network” and the “renovation of the healthcare center”. Regarding the main issue, “the streets and pavement rehabilitation”, there are no significant differences between genders and education levels ( $p > 0.05$ ), but it represents a major problem for respondents younger than 49 years ( $p < 0.05$ ). However, the importance for the other two issues is perceived

differently, male residents are more concerned about the sewer network, while women care more about the renovation of the healthcare center, no significant differences were found with regard to the age categories and education level. Age has a direct influence on considering aspects of street and pavement rehabilitation and the sewer network ( $p < 0.05$ ). For people under the age of 50, these are priority directions, compared to the more invisible ones. Statistically significant differences were found among gender, age categories and education levels ( $p < 0.05$ ), males, young and more educated respondents being the most concerned regarding the sewage network. Females are concern about the renovation of healthcare center ( $p < 0.05$ ). No significant differences were found with regard to the age categories and education level and the renovation of the healthcare center ( $p > 0.05$ ) (Table 2).

Residents’ perceptions regarding the main problems of the commune in terms of sustainable development were analyzed with the help of 10 items (Tables 3 and 4). The analyzed items were divided into three sections: (1) environment, which comprised two items (Sewage network and Sanitation); (2) economic with 2 items (Tourist promotion and Agricultural equipment); (3) social comprising 7 items (Drinking water supply, Public illumination, Roads and pavements, Agricultural roads rehabilitation, Medical supplies from the healthcare center, Playground and sports base). The selection of each item included into the analysis was based on the main problems identified in the commune development strategy for 2014-2020. At the same time, it was noticed that for most of the problems mentioned, a project was submitted in order to improve the situation registered in 2014. The results indicated that the respondents were mainly satisfied with the following aspects: public illumination (90%), agricultural roads rehabilitation (85.1%), playground and sports base (94.2%) and tourism promotion (41.3%).

Table 2. Residents' ranking of the main problems existing in the community

Characteristics	Street and pavement rehabilitation N=114			Sewerage network N=102			Renovation of the healthcare center N=98		
	1	2	3	1	2	3	1	2	3
<b>Gender</b>									
Female	27(47.4%)	26(55.3%)	6(60.0%)	16(43.2%)	17(43.6%)	19(73.1%)	14(93.3%)	13(59.1%)	26(42.6%)
Male	30(52.6%)	21(44.7%)	4(40.0%)	21(56.8%)	22(56.4%)	7(26.9%)	1(6.7%)	9(40.9%)	35(57.4%)
	$\chi^2=0.9506$ , df=2, p=0.622 Fisher' exact = 0.615			$\chi^2=6.8186^*$ , df=2, p=0.033			$\chi^2=12.7537^{***}$ , df=2, p=0.001		
<b>Age</b>									
18-33 years	18(31.6%)	24(51.1%)	7(70.0%)	20(54.1%)	16(41.0%)	9(34.6%)	8(53.3%)	7(31.8%)	25(41.0%)
34-49 years	23(40.4%)	21(44.7%)	1(10.0%)	16(43.2%)	15(38.5%)	10(38.5%)	5(33.3%)	8(36.4%)	30(49.2%)
50-65 years	14(24.6%)	1(2.1%)	2(20.0%)	1(2.7%)	8(20.5%)	5(19.2%)	1(6.7%)	5(22.7%)	6(9.8%)
>65 yeas	2(3.5%)	1(2.1%)	0(0.0%)	0(0.0%)	0(0.0%)	2(7.7%)	1(6.7%)	2(9.1%)	0(0.0%)
	$\chi^2=16.0306^{**}$ , df=6, p=0.014 Fisher' exact = 0.003			$\chi^2=12.5834^*$ , df=6, p=0.050 Fisher' exact = 0.050			$\chi^2=9.8283$ , df=6, p=0.132 Fisher' exact = 0.097		
<b>Education level</b>									
Less than high school	6(10.5%)	2(4.3%)	1(10.0%)	0(0.0%)	3(7.7%)	3(11.5%)	2(13.3%)	3(13.6%)	2(3.3%)
High school	43(75.4%)	29(61.7%)	6(60.0%)	24(64.9%)	32(82.1%)	16(61.5%)	8(53.3%)	13(59.1%)	47(77.1%)
Post-high school/ University degree	8(14.0%)	16(34.0%)	3(30.0%)	13(35.1%)	4(10.1%)	7(26.9%)	5(33.3%)	6(27.3%)	12(19.7%)
	$\chi^2=6.7071$ , df=4, p=0.152 Fisher' exact = 0.103			$\chi^2=10.1724^*$ , df=4, p=0.038 Fisher' exact = 0.019			$\chi^2=5.9202$ , df=4, p=0.205 Fisher' exact = 0.124		

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Source: Own calculation on the basis of data from questionnaire.

Sanitation is also perceived as very good by 86.8% of the respondents, which is encouraging since it is stated to be a fundamental aspect for health and wellbeing [4]. This situation can be explained by the fact that all the projects regarding these aspects of rural development were implemented when the research work was conducted. On the other hand, the respondents were less satisfied with those aspects where the implementation of the projects had not been completed or started at the moment of the interview. The most concerning is the perception on the sewerage network, because 87.6% of the respondents expressed an unfavorable opinion about it, but also regarding the medical supplies from the healthcare center (57% of the respondents were disappointed about it). These aspects were also noticed to be among the first three problems of the commune, having a direct impact on the social aspects of its sustainable development and living standard of the community [3, 4, 5, 12, 38]. Previous studies on life quality in Cluj County mention the same lack of satisfaction regarding health facilities [40]. Subsequently, a test was conducted to determine if there are

any differences regarding residents' perception towards sustainable rural development and their socio-demographic profile. The results indicated that women were more concerned about the situation of the medical services than the men (p<0.01), this can be explained by the fact that women are generally more preoccupied about health [42, 47].

Another issue which was analyzed refers to the residents' perception on the relation between the perceived improvement in the quality of life and the implemented rural development programs. When asked if their standard of living increased during the last years due to the implementation of different development programs such as "rehabilitation of the agricultural road" and the "tourist information center", 94.2% of the respondents agreed that their living standard and wellbeing of the community is better, compared with the beginning of 2014 (the first year of the development strategy). The quality of life was previously analyzed based solely on statistical indicators and not on the residents' direct responses and perceptions [33, 40, 41, 43]. Furthermore the importance of the two main

programs implemented and their possible effects were analyzed (Table 5). It was observed that the respondents consider that the rehabilitation of the agricultural road is very important (means=5.77, SD=1.56), especially for the male respondents (mean=6.29, SD=1.12) and those older than

50 years (mean=6.58, SD=1.00). This is not surprising at all, since men are generally more involved in agricultural activities than women [26] At the same time, agriculture represents the main activity for elderly people in the research area [34].

Table 3. Residents' perception on the sustainable rural development aspects from Cuzdrioara

	Dissapointing		Pretty good		Very good		I can not appreciate	
<b>Environment component</b>								
Sewage network	106	87.6%	4	3.3%	4	3.3%	7	5.8%
Sanitation	0	0.0%	15	12.4%	105	86.8%	1	0.8%
<b>Economic component</b>								
Tourist promotion	11	9.1%	26	21.5%	50	41.3%	34	28.1%
Agricultural equipment	47	38.8%	33	27.3%	9	7.4%	32	26.5%
<b>Social component</b>								
Drinking water supply	0	0.0%	9	7.4%	112	92.6%	0	0.0%
Public illumination	0	0.0%	12	9.9%	109	90.1%	0	0.0%
Roads and pavements	82	67.8%	28	23.1%	8	6.6%	3	2.5%
Agricultural roads rehabilitation	2	1.7%	13	10.7%	103	85.1%	3	2.5%
Medical supplies from the healthcare center	69	57.0%	39	32.2%	8	6.6%	5	4.1%
Playground and sports base	0	0.0%	5	4.1%	114	94.2%	2	1.7%

Source: Own calculation on the basis of data from questionnaire.

Table 4. Tests on differences between socio-demographic characteristics of the residents regarding the perception on sustainable rural development aspects

Components	Independent variables		
	Gender	Age	Education
<b>Environment component</b>			
Sewage network	n/a	n/a	n/a
Sanitation	n/a	n/a	n/a
<b>Economic component</b>			
Tourist promotion	n/a	n/a	n/a
Agricultural equipment	n/a	n/a	n/a
<b>Social component</b>			
Drinking water supply	n/a	n/a	n/a
Public illumination	n/a	n/a	n/a
Roads and pavements	n/a	$\chi^2=18.962^*$ , df=9, p=0.026	n/a
Agricultural roads rehabilitation	n/a	n/a	n/a
Medical supplies from the healthcare center	$\chi^2=1.465^{**}$ , df=3, p=0.002	n/a	n/a
Playground and sports base	n/a	$\chi^2=13.698^*$ , df=6, p=0.033	n/a

\* p < 0.05, \*\* p < 0.01

Source: Own calculation on the basis of data from questionnaire.

Table 5. Locals' perception on the importance of the implemented programs

Program	Min	Max	Mean	SD
Rehabilitation of the agricultural road	1	7	5.77	1.56
More investors because of agricultural roads rehabilitation	1	7	5.81	1.32
Tourist information center	1	7	5.62	1.64

Source: Own calculation on the basis of data from questionnaire.

Table 6. Residents' perception on the implemented programs

Variables	N=121	Rehabilitation of the agricultural roads	More investors because of agricultural roads rehabilitation	Tourist information center promotes commune values sufficiently well
Gender	Female	5.30 (1.75)	5.79(1.49)	5.98(1.44)
	Male	6.29 (1.12)	5.84(1.12)	5.22(1.77)
		Z=3.270***, p=0.001	Z=0.451, p=0.652	Z=2.779**, p=0.005
Age	18-33 years	5.28(1.75)	5.49(1.55)	5.21(1.77)
	34-49 years	5.97(1.36)	5.92(1.12)	5.73(1.50)
	50-65 years	6.58(1.00)	6.41(0.79)	6.35(1.41)
	>65 years	6.67(0.58)	6.67(0.58)	7.00(0.00)
		$\chi^2=11.866^{**}$ , df=3, p=0.008	$\chi^2=7.222$ , df=3, p=0.065	$\chi^2=13.425^{**}$ , df=3, p=0.004
Education level	Less than high school	6.55(1.01)	6.33(0.71)	6.22(1.71)
	High school	5.89(1.41)	5.81(1.08)	5.52(1.65)
	Post-high school/ University degree	5.27(1.89)	5.69(1.86)	5.70(1.63)
		$\chi^2=4.64$ , df=2, p=0.096	$\chi^2=1.974$ , df=2, p=0.373	$\chi^2=3.675$ , df=2, p=0.159

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Source: Own calculation on the basis of data from questionnaire.

For male respondents, it is more important that the streets have been paved, but it still represents a problem (Table 6). The older ones think it's good that they are asphalted, but young people still see it as a problem (see previous tables). There were other scholars who also mentioned the importance of roads for sustainable development [6, 33]. The existence of a tourist information center promoting the area is more important for women than for men. This can be explained by the fact that tourism represents an employment alternative for women in the rural area [16, 22]. Previous researches observed also that the female population tends to be more supportive of tourism activities [28, 49]. With respect to the age, it was observed that respondents over 50 years old perceived the importance of the tourism information center better, as well as road habilitation, due mainly to the increasing standard of living, and lack of other options (employment, migration) outside of the community [16] (Table 6).

## CONCLUSIONS

Through the objectives of the Local Development Strategy, Cuzdrioara commune aims to improve the way of life of the inhabitants by achieving the objectives proposed in the strategy. After the analysis on the implementation of the Rural Development Strategy was found, the opinion of the locals was assessed about the projects conducted at

the level of the commune. Out of the 38 projects proposed in the Development Strategy, up to 2018, 13 projects have been completed and by 2020 the total number of completed projects will reach 19. The three major problems (asphalting of streets and pavement rehabilitation, sewage network and rehabilitation of the healthcare center) perceived by the respondents are also identified in the Rural Development Strategy 2014-2020. For each problem, there is one project under execution. Rehabilitation of the agricultural roads has had a positive impact on the population through easy access to agricultural property, increasing land value and attracting local investors. Public street illumination, a project completed in 2015, brought a high degree of satisfaction to respondents, lower electricity bills, and the Cuzdrioara commune complied with European standards. The playground and sports base rehabilitation contributed to improve health, community relations, easy access and sporting performance, easier access to a relaxation area. The actions undertaken in the Cuzdrioara commune have not been left unobserved by the citizens; the local public administration has been evaluated with a high degree of satisfaction. Many projects were finished, being positively assessed by the citizens. The public administration fulfilled the objectives established in the Local Development Strategy. The impact of the rural development projects was favorably assessed.



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