

Local perspectives on development conflicts in a mountainous socio-ecological system: A Q methodology study

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Abstract

This study suggests an understanding, based on the local perspectives, of the underlying reasons why the municipality of Velingrad, a mountainous region with abundant natural resources and promising tourism sector does not retain its population and harness its endogenous potential to develop sustainably. Q methodology is employed to better comprehend how people collectively perceive certain problems and their solutions. The results lead us to three well-defined perspectives that highlight high-disagreement areas where dialogue and negotiation are most needed, especially around tourism's role, environmental trade-offs, and benefit-sharing mechanisms. The study revealed deep distrust in the governing system and a general sense of political and ecological alienation. The future of mountain villages is not perceived as a collective responsibility, but rather as a challenge they are expected to manage on their own. As a result of these insights, the study suggests changing the course of local development and reframing the management model into a more open community-based platform that integrates local voices and energy by involving them not only in framing the policies but also in the implementation and monitoring process. This study uses Q methodology to explore how local stakeholders perceive the factors influencing the socio-ecological framework that guides local management decisions.

Key words: Highland communities, neo-endogenous development, Rhodope Mountain, stakeholders' perspectives, Velingrad municipality



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1. Introduction

We live in a highly interconnected world with new cross-scale interactions linking people and places in new way (Folke et al. 2016). This interconnectedness is reflected in evolving understandings of good practices in local development and governance, where local actions are increasingly influenced by and responsive to broader social, ecological, and economic dynamics. This framing incorporates principles of neo-endogenous development and resilience (Domp tail et al. 2013; Shaw and Maythorne 2013; Milán-García et al. 2019; Marango et al. 2021; Sieber et al. 2024), emphasizing the importance of local capacity, community participation, and adaptive governance as well as sustaining human well-being in balance with nature (Van Oudenhoven et al. 2018). Designing the path for prosperous local development that is both socially and ecological-

ly responsible requires a transdisciplinary approach (Stock and Burton 2011; Moallemi et al. 2020) that employs holistic understanding of the human–environment interactions. Using a social-ecological system (SES) approach in generating knowledge and in formulating sustainable local governance solutions is critical, as it explicitly recognizes the connections and feedback linking human and natural systems (Leslie et al. 2015). Embracing this holistic perspective calls for the integration of diverse and context-specific knowledge systems that can meaningfully capture and explain the complex dynamics within these systems. In this setting, local perspectives emerge as essential sources of insight, offering not only contextual information but also practical skills, capabilities, and factual knowledge. Such locally grounded knowledge plays a crucial role in guiding strategic planning by helping to accurately define relevant problems and formulate appropriate questions to be addressed (Martínez-Fernández et al. 2021). Knowledge systems are dynamic, they are not objective, detached and value-free but are inextricably linked with the social, political and agro-ecological context in which they arise (Grimble 1998). Therefore, they consist not only of information, or knowledge as a resource, but also of factual knowledge, capabilities, and skills and have the advantage of being holistic or comprehensive vis-à-vis a particular theme (Antweiler 1998). Only thanks to familiarity with specific local reality is it possible to assess and take full advantage of local developmental potential (Adamski and Gorlach 2007).

An effective tool that captures the diverse viewpoints of a community that form this local reality is the Q methodology. It is frequently used to delineate and understand different stakeholders' perspectives making it particularly salient as a means to inform sustainability practice and policy, increasing its role in revealing hidden values and perspectives of those involved in community-based efforts, among all related to natural resource management (Gruber 2011; Niedziakowski et al. 2018; Sneegas et al. 2021), as well as mountain regions development (Ciftcioglu et al. 2020; Moser and Baulcomb 2020; Pagot and Gatto 2024).

Mountain regions face significant local development challenges related to demographic decline, persistent poverty, and economic marginalization, which collectively constrain their long-term development prospects (OECD 2021). This is particularly notable in Bulgaria, where mountainous areas occupy more than 40% of the national territory and account for a substantial share of the country's water, mineral, and forest resources, as well as a significant portion of its demographic, agricultural, and tourism potential (Yordanova and Mateeva 2011; Petrov 2021) providing wide variety of ecosystem services (Borisova et al. 2023). Following Bulgaria's accession to the European Union in 2007, cohesion and regional development policies have played a crucial role in reshaping how local governments plan, finance, and implement development projects. Nevertheless, increasing territorial disparities continue to persist (OECD 2021) and mountain regions in particular are characterized by enduring socio-ecological challenges and limited access to essential services, which often prevent them from fully benefiting from EU policy frameworks (Koulov 2018). These constraints are particularly acute in smaller settlements and rural areas, where outmigration, aging population, and economic stagnation hinder long-term planning and investment. The survival chances of vital communities in marginal mountainous territories depend on a balanced developmental approach that considers economy, ecology, culture and identity and endogenous potential altogether (Maino et al. 2018).

The present research focuses on a case study in Western Rhodope Mountains–Velingrad municipality, Bulgaria. The municipality is a very popular spa resort with long-lasting traditions in forestry, a sector that used to be the backbone of its economy in the 20th century (Todorova and Zhiyanski 2024). Although the number of tourists and tourism revenues increase every year, as well as the income from tourism, the number of local populations decreases, the local population continues to decline, unemployment remains three times higher than the national average, and salaries are barely 60% of the national average (National Statistical Institute 2022).

This study suggests that local perspectives on development conflicts in this mountainous socio-ecological system may provide valuable insights into why the region's potential remains underutilized and unsustainably managed. The central hypothesis is that a deeper understanding of local viewpoints can reveal new angles on the most pressing challenges and contribute to identifying more effective, context-sensitive solutions. Applying Q methodology offers a promising avenue for capturing the subjective viewpoints of Velingrad's stakeholders, from local officials and tourism operators to residents and marginalized groups. There are studies on stakeholders' perspectives in the region, especially targeting the forest sector that highlight the active, adequate and critical stand of the local stakeholders (Paligorov et al. 2015) and confirm the importance of public involvement for sustainable forest management (Tsvetkov et al. 2020). This investigation points at shared and divergent perspectives on key development issues in search of the variables that distort the human-nature balance and the commonalities that unite people in their visions for the future. Areas where dialogue and negotiations are most needed are highlighted and, through a socio-ecological approach, an analysis of their underlying causes is suggested. Q methodology is rarely used to explore the intersection of social and ecological issues in a local governance context in mountain regions in Eastern Europe.

The study addresses this research gap and demonstrates the use of the Q methodology to clarify the bottom-up perspective to the factors that shape the socio-ecological framework in which the local management acts. This study aims to investigate the underlying factors that hinder the selected case study region, a mountainous area rich in natural resources and experiencing economic advancement, from effectively harnessing its endogenous potential, retaining its population, and setting sustainable development objectives. Furthermore, it seeks to investigate the foundation of the local problems by understanding the local viewpoints and the drivers that stand behind them.

2. Materials and methods

2.1. Methods

Q methodology was originally developed by William Stephenson (1935) and is a mixed qualitative-quantitative method that provides a foundation for the systematic study of subjectivity, its meaning and measure (Brown 1993). It asks its participants to decide what is 'meaningful' and hence what does (and what does not) have value and significance from their perspective (Watts and Stenner 2005). Q methodology enables the group of participating respondents (called the p-set) to rank-order a purposively sampled set of stimuli (a Q-sample) which

is then modeled in Q-sorts. The Q-sorts are intercorrelated as variables in factor analysis. Resulting factors represent points of view, and the association of each respondent with each point of view is indicated by the magnitude of his or her loading on that factor (McKeown and Thomas 2013). The factors produced represent clusters of shared subjective perspectives within the participant pool (Sneegas et al. 2021) revealing the structure of people’s beliefs and opinions.

The present research followed the traditional Q methodology steps as described by Brown (1993) and McKeown and Thomas (2013), the workflow described in Fig.1.

The Q study starts by identifying a topic of investigation (Webler et al. 2009), which in our case is “Problems and opportunities in the Velingrad Municipality.” Following this, the concourse, i.e., a curated collection of subjective statements

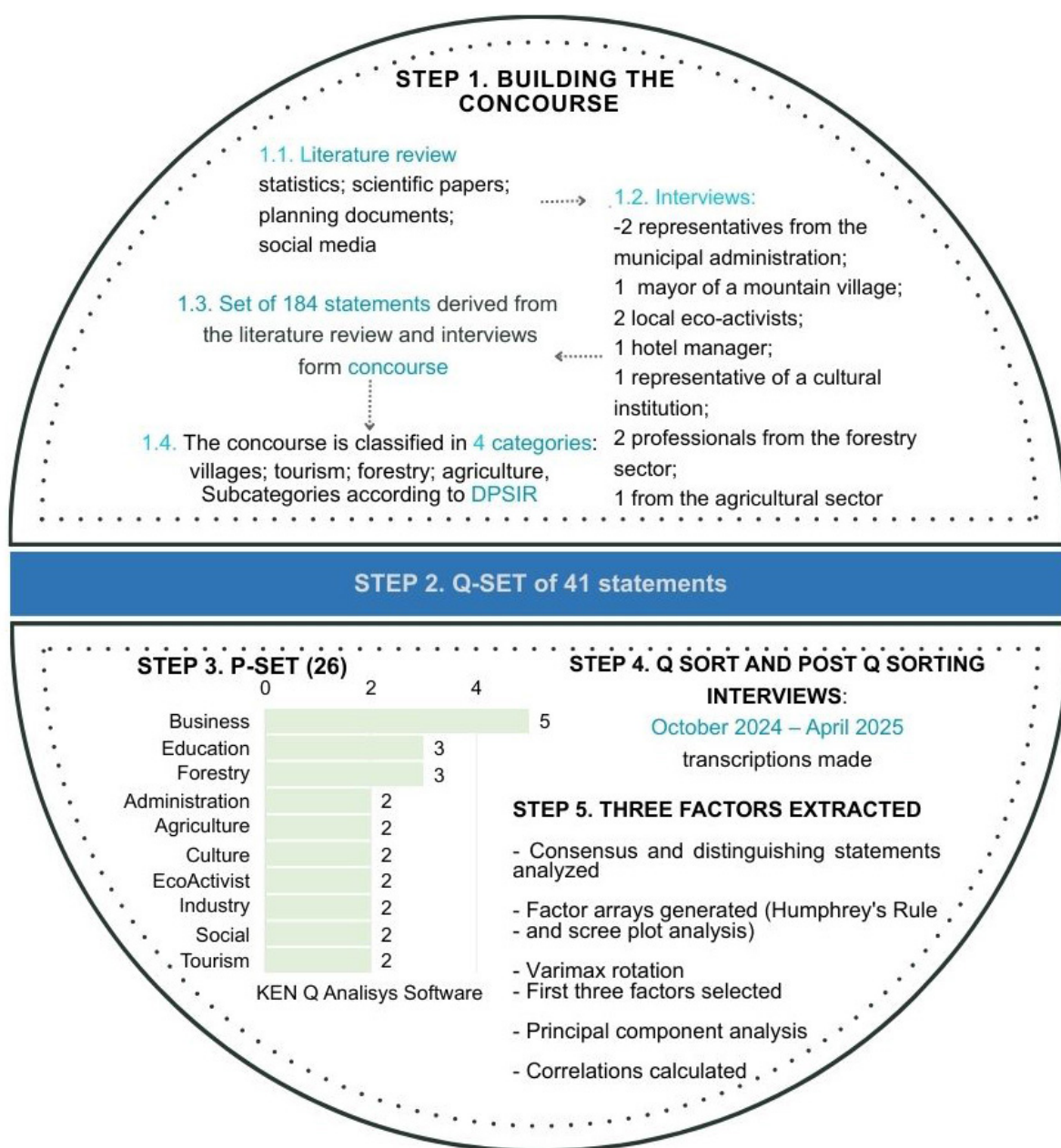


Figure 1. Workflow of the study.

reflecting the diversity of viewpoints within the domain of interest, is compiled (Sneegas et al. 2021). For the present study, this analysis includes a literature review, including scientific literature, regional development plans, sector-specific local plans, social media discussions, and statistical data. To deepen and contextualize the discourse, ten semi-structured interviews were conducted using an interview guide tailored according to each participant's expertise and professional sphere in order to capture context-specific insights (Karatsareas 2022). The participants included: two representatives from the municipal administration (focused on local development and tourism), mayor of a mountain village, two local eco-activists, one hotel manager, one representative of a cultural institution, two professionals from the forestry sector, and one from the agricultural sector. All interviewees were individuals with significant engagement and expertise in their respective fields (McKeown and Thomas 2013). The interviews were transcribed, analyzed for recurring themes and patterns, completed with those of the literature review and then all the important messages were clustered into four categories: villages; tourism; forestry; agriculture, ending with a set of 184 statements in the discourse. Consensus and contradictory statements started emerging, and that early stage facilitated focusing on the local hot topics coming directly from the people being studied. The formulated statements are easy to read and contain "excess meaning" (Webler et al. 2009), both positive and negative statements are determined for each category, to encompass the essential subthemes that together could highlight the underlying reasons for the local development to stagnate. Q statements are then selected from each category, ensuring that all important aspects of the discourse are included in the Q sample (Webler et al. 2009). At the end a Q set of 41 statements was listed.

The p-set, or participant pool (i.e., participants who are likely to express viewpoints relevant to the research question), was selected using a combination of purposive and snowball sampling. The p-set included 26 participants, distributed as in Table 1.

The participant pool consisted of 26 individuals (12 women and 14 men), ranging in age from 20 to 80 years. Participants represented a diverse spectrum of professional backgrounds, including administration, agriculture, business, culture, environmental activism, education, forestry, industry, journalism, social services, and tourism. This heterogeneity was intentionally sought to represent the breadth of opinion in a target population (Webler et al. 2009) across generations, genders, public and private sectors, consumers of ecosystem natural resources, their managers, and protectors.

The interviews were conducted in the period October 2024–April 2025. The conversation started with introducing the topic and explaining the rules for filling in the Q-sort. The Q-sort is under forced distribution and varies from "−5", equal to "I completely disagree with this statement", to "+5", equal to "I completely agree with this statement". The interviewees were encouraged to first sort the statements in three files, "yes", "no" and "neutral" and then distribute them in the Q-sort. The interviewees were also instructed to prioritize the topics they consider more important when they had hesitations while sorting. All interviews were recorded and conducted with one and the same interviewer. An exit interview was conducted, discussing the most polarized statements and those that the interviewee was most hesitant about. The interview ended with asking if an important statement was missing from the Q statements.

Table 1. P-set composition.

Nº	Date (dd/mm/yyyy)	Stakeholder	Age	Gender
01	30.10.2024	Education	30–40	M
02	31.10.2024	Tourism	60–70	F
03	01.11.2024	Education	30–40	F
04	01.11.2024	Business	30–40	M
05	02.11.2024	Business	60–70	M
06	04.02.2025	Tourism	20–30	F
07	04.02.2025	Forestry	40–50	M
08	04.02.2025	Business	30–40	M
09	05.02.2025	Culture	50–60	M
10	05.02.2025	Journalist	50–60	F
11	01.03.2025	Administration	50–60	F
12	01.03.2025	Business	30–40	F
13	02.03.2025	Social	50–60	F
14	18.03.2025	Villages	50–60	M
15	18.03.2025	Villages	60–70	M
16	19.03.2025	Forestry	50–60	F
17	19.03.2025	Forestry	30–40	M
18	29.03.2025	Industry	70–80	M
19	29.03.2025	Education	60–70	F
20	30.03.2025	Agriculture	30–40	F
21	30.03.2025	Business	30–40	F
22	31.03.2025	Social	30–40	M
23	01.04.2025	Eco-Activist	30–40	M
24	02.04.2025	Industry	60–70	M
25	03.04.2025	Agriculture	30–40	M
26	11.04.2025	Eco-Activist	30–40	F

The Q-sorts were then analyzed using the Ken-q Analysis software (Banasick 2023). The correlations were calculated and a correlation matrix was constructed. A principal component analysis (PCA) was then conducted, identifying eight factors with eigenvalues greater than one. The first factor explained 28% of the variance, followed by the second with 13% and the third with 8%. The first three factors were taken into account, considering Humphrey's Rule whose results coincide with the scree plot analysis. Persons significantly associated with a given factor are therefore assumed to share a common perspective (McKeown and Thomas 2013). The significant factor loadings are interpreted according to Brown (1993), in excess of ± 0.50 . These are selected for interpretation and rotated using varimax rotation (in Ken-Q Analysis) that maximizes the input of the participant group on the emergent factor structure (Watts and Stenner 2005). The factor loadings are set to $P < 0.05$ probability. Interpretation of the factor arrays was conducted and validated through verbatim excerpts from the interview data. Consensus and distinguishing statements were analyzed. Con-

sensus statements were determined using factor comparison—by calculating if the difference between the z-scores of a statement is statistically significant (based on the standard error of differences) (Zabala 2014) and if the statements are ranked among the first or last 15 (to pay attention to the most salient statements).

2.2. Case study area

Velingrad Municipality (Fig. 2) is situated in the Western Rhodope Mountains and encompasses the town of Velingrad along with 20 nearby villages, most of which are scattered in the higher parts of the mountain. The territory of Velingrad is distinguished by its vast forests, offering beautiful landscapes dominated by Scots pine, black pine, common fir, and Norway spruce (Alexiev et al. 2002). It is widely recognized as one of the country's premier spa and wellness

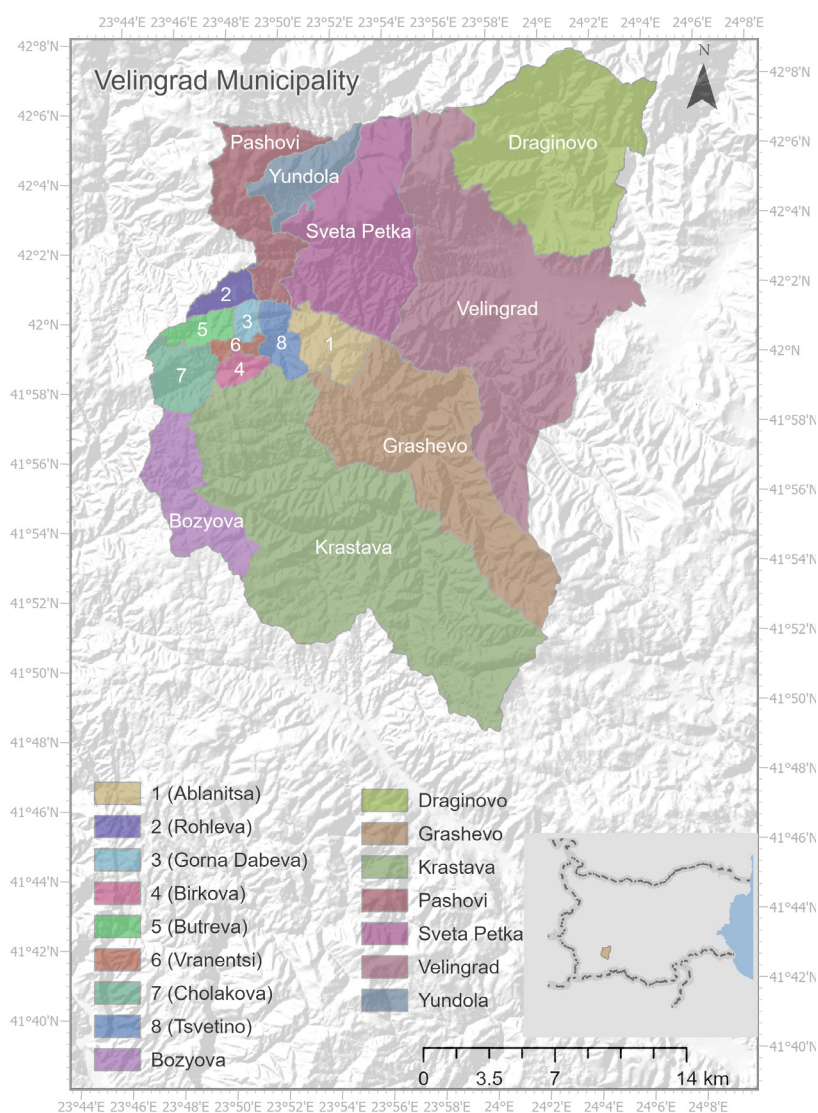


Figure 2. Case study area, Velingrad Municipality, Western Rhodope Mountain (Base-map: Esri 2025a, 2025b).

tourist destinations. Tourism is the leading economic driver, complemented by forestry with rich and long traditions, small-scale agriculture, and service industries. The tertiary sector, particularly tourism, has also been the most rapidly developing over the past twenty years, while industry and agriculture have experienced serious decay (Todorova and Zhiyanski 2024). However, in contrast to its touristic appeal, Velingrad faces several development challenges, including depopulation, aging, unemployment and low living standards. Demographically, the town experiences population decline and outmigration, particularly among young people seeking better opportunities in larger cities or abroad (Dragozova et al. 2015). This demographic trend places pressure on the local labor force and hampers long-term economic resilience. These issues are coupled with infrastructural, ecological, and management problems (Dragozova et al. 2015; Paligorov et al. 2015; Tcherkezova et al. 2023; Todorova and Zhiyanski 2024). Pollution from solid household waste is recognized as a serious problem as well (Tcherkezova et al. 2023). As underlined previously, the municipality of Velingrad has great potential and long-standing traditions in the forestry sector in terms of education, training and production (Tsvetkov et al. 2020). Forests also play an important role for society as elements of natural heritage, with both cultural and socio-economic value (Zhiyanski et al. 2021). However, the sector experiences its own problems that are very well summarized in the Forest management plan and highlight the calamities, bad condition of infrastructure, lack of qualified and motivated human resources, the need to increase the added value of the forest wood and non-wood products, biodiversity preservation and implementation of contemporary forest management practices (Paligorov et al. 2015).

3. Results

The quantitative processing of the q-sorts results in highlighting three distinct perspectives (factors) generated from the 26 interviews that explain 49% of the variance. These perspectives on the topic “Problems and opportunities in Velingrad Municipality” are as follows: 1. Balance between nature and people; 2. Governance pessimism and 3. Management and local incentives: a problem and a solution.

3.1. Balance between nature and people

The supporters of Perspective 1, as presented in Fig. 3, strongly agree that the future of the region hangs in the balance and strongly disagree that the economic benefits are more important than biodiversity. “I believe there should be a balance between nature and people, and that we should use forest resources more consciously” (06_Tourism). They prioritize the solid waste pollution problems and the importance of ecosystem services that forests provide. Problems concerning management issues and political influence come to the forefront. Forestry is considered equally important as tourism, and forests are believed to have increasing importance in the future “I presume that in the future we will value them even more for the water they give us and for coolness we need ever more often in summer” (19_Education). Forest-related economic activities are still salient, and forests are the most important economic resource. They are rather hesitant about whether the forests are well-managed, although

They prioritize the importance of forests and environmental issues but consider them in conjunction with the social and political context. There is a perceived potential in small settlements and in sectors beyond tourism.

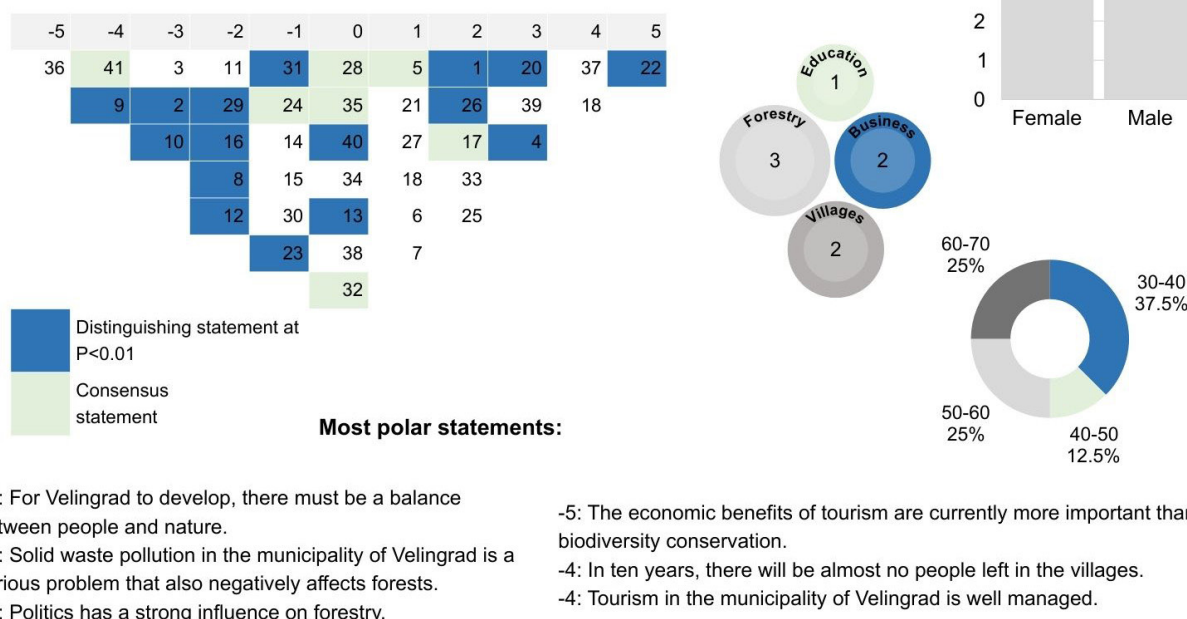


Figure 3. Perspective 1: Balance between nature and people.

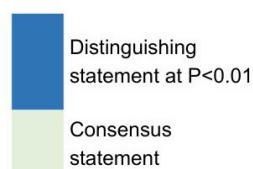
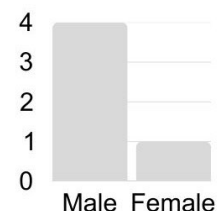
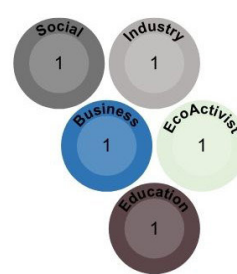
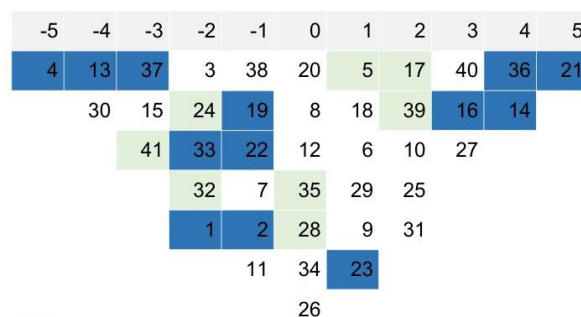
they consider the sector is strongly politically influenced, and the logging is the main driving force in forestry. “I believe that people in the sector are too much focused on what things used to be. I think that if we want to have progress, we need to change our mindset and look ahead” (16_Forests). At the same time, “traditions in forest management are an important knowledge base that local people engaged in forestry are proud of” (17_Forests). They consider alternative tourism as a way to diversify the tourist product. They also believe tourism can be the future for the villages: “Tourists start looking for something else—life close to nature, coziness and village life atmosphere—I have guests that love to go biking, enjoy the views in the villages, share the muddy street with the hens” (06_Tourism). They are confident that the traditional way of life is not dying out and that the villages are very lively, and they will not depopulate soon: “I think that there is a lot of potential in the villages, people just need more information. There is initiative in young people” (14_Villages). “It’s peaceful, quiet and beautiful here (Draginovo)...We use mineral water for heating, and mineral public baths are free for the locals” (15_Villages). They do not recognize agriculture as a sector of great importance. All interviewed from the forestry sector and villages load on this perspective. There is no distinct pattern in the gender and age of the respondents.

3.2. Governance pessimism

All the most strongly agreed and disagreed statements in this perspective are distinguishing statements, ranked significantly differently in the other two perspectives. As summarized in Fig. 4, they have no doubts that ecosystem services of forests related to water are underestimated in their management. They

consider that there are bigger problems in forests than illegal logging, and they are not related to climate change. They prioritize forests as the most important resource in the region, they do not think they are overexploited or in bad condition, but they think that forest management needs to change, and they are pessimistic—they do not believe that in the future we will be able to use them the way we do now—some think there are no more people that wish to work in the forest (24_Industry) and some consider the new European regulations will change the way forests are utilized (05_Business). The participants shared that the added value from timber is lost, and the income from this resource is leaking out of the region (26_EcoActivist) and that the wood industry left is not profitable (24_Industry). They believe that forests are not well managed as strongly as they believe that tourism is not well managed. “The mineral water is not a commonwealth anymore, only the big hotels benefit from it” (26_EcoActivist). They mostly agree that the economic benefits of tourism are currently more important than biodiversity conservation. They believe agriculture is a strongly declining sector and think that young people should participate more actively in it. For the village’s topic, the respondents from this factor have no strong opinion, as most of the statements related to the topic are evaluated with “1” or “-1”. “They are people with specific culture and traditions, I am not sure how eager they will be to welcome tourists” (22_Social); “Villages vary greatly—some are more prosperous, especially those near the town or close to the dam. But the ones high up in the mountains rely on the forest and a few cows to survive. Life there is a daily struggle, a fight for existence, living day to day” (05_Business). They rather think that people in villages are changing and that villages will be depopulated sooner or later. “Certainly, life for the people there is not easy. Most

The forest is the most valuable resource for Velingrad, and its economic importance is equal to that of tourism. Both tourism and forests are not well managed. The main problems facing the forests do not stem from climate change or illegal logging, but from management and political influence.



Most polar statements:

- +5: The water-conservation and water-retention functions of the forest are underestimated in its management.
- +4: There are bigger problems in the forests than illegal logging.
- +4: The economic benefits of tourism are currently more important than biodiversity conservation.
- 5: Tourism could be the future for the villages in the region.
- 4: Agriculture in the Velingrad region is not a declining sector.
- 4: Climate change poses a greater threat to forests than human activity.

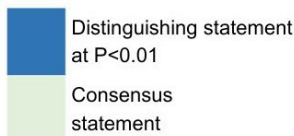
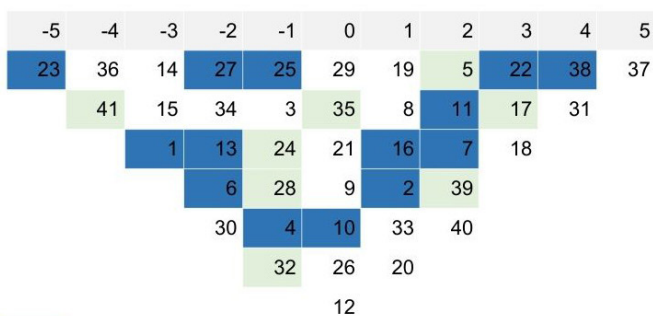
Figure 4. Perspective 2: Governance pessimism.

likely, this way of life will gradually fade with the passing of generations—but not within the next ten years” (01 Education). This is the only perspective that strongly disagrees that solid waste pollution in the municipality of Velingrad is a serious problem that also negatively affects forests. “The waste problem has seen some progress with the opening of the new waste treatment plant. However, it’s still dirty along the river, and there’s still waste—this mainly comes down to people’s culture” (05_Business). Most of the respondents loading on this perspective are male.

3.3. Management and local incentives: a problem and a solution

As presented in Fig. 5, forest resources are overexploited and solid waste pollution is a serious problem that affects forests as well “For as long as I can remember, the town has never been as much of a dump as it is now. But the truth is, people have no sense of culture. I’ve been observing young children, and I can see that they are following the same path” (03_Education); “Illegal dumping is out of control” (25_Agriculture). At the same time, forest management is poor: overexploitation is widespread, and decisions are often driven by political interests rather than sustainability: “People are the biggest threat to the forests—not climate change. I remember when my father was a forester, reforestation happened immediately. Now, it’s not happening at all. Forests are poorly managed, but with the right people who know what they’re doing, we could still use them sustainably” (13_Social). “Illegal logging has decreased

Tourism in the municipality of Velingrad benefits the large hotels and brings too few benefits to the local population, including in the mountain villages. Alternative tourism and local initiative are the key to change. The mountain villages remain heavily dependent on forests, yet tourism alone does not offer them a viable future. At the same time, forest management is poor: overexploitation is widespread, and decisions are often driven by political interests rather than sustainability. Pollution poses an additional threat, and protecting biodiversity must become a top priority.



Most polar statements:

- +5: Solid waste pollution in the municipality of Velingrad is a serious problem that also negatively affects forests.
- +4: Tourism in the municipality of Velingrad benefits the large hotels and brings too few benefits to the local population.
- +4: Young people should take more active advantage of opportunities in agriculture.

- 5: Forest resources are not being overexploited.
- 4: Tourism in the municipality of Velingrad is well managed.
- 4: The economic benefits of tourism are currently more important than biodiversity conservation.

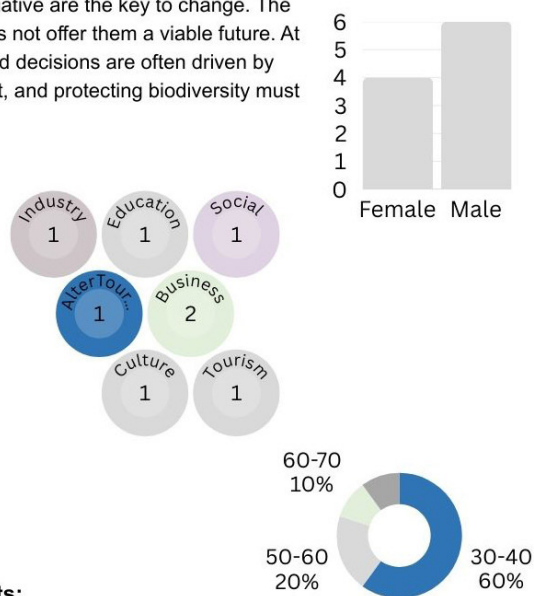


Figure 5. Perspective 3: Management and local incentives: a problem and a solution.

due to better control, but political influence still distorts forest management” (23_AlterTourism). “Everything revolves around tourism now—it’s the main employer. Forests matter morally, but economically, they won’t gain more importance unless managed differently” (04_Business). Tourism in the municipality of Velingrad benefits large hotels and brings too few benefits to the local population, including in the mountain villages. “Over the past 5–6 years, there has been excessive construction of large-scale tourist complexes—both in terms of area and bed capacity—which has begun to disrupt the lives of local residents. Tourism has its place, but the needs of the city’s residents must come first.” (09_Culture). Alternative tourism and local initiative are important for opening new opportunities: “Alternative tourism is a way to raise awareness about environmental issues and to help people discover untouched places—so they can truly see the difference...The mountain villages remain heavily dependent on forests, yet tourism alone does not offer them a viable future. Tourism can support villages through clean food production” (23_AlternativeTourism). The importance of incentives is also emphasized in the forest sector: “The forestry sector is focused only on timber extraction. There are qualified people, but no one wants to work”; and in agriculture as well, the statement that young people should take more active advantage of opportunities in agriculture is strongly agreed with. Nevertheless, the opinions on agriculture development vary: “I know people in agriculture that earn good money, but some enter the business with harm flawed incentives, related to subsidiaries” (04_Business); “The conditions do not intensive agriculture: available fertile land is used to its fullest potential”. (09_Culture). Protecting biodiversity must become a top priority, as confirmed by the respondents: “I firmly believe that the economic gains from tourism can never outweigh the value of biodiversity. Recovery takes time—often much longer than we anticipate” (09_Culture); “In my view, Velingrad will face a serious water-related challenge in the future—partly due to its water supply infrastructure, but also because of the increasing droughts being observed. This is linked both to climate change and to forest management” (23_AlternativeTourism). These perspectives are shared mostly by people 30–40 years old, with very different spheres of occupation.

There are two confounded two-sorts that load on more than one factor that are not taken into account in the composite q sorts.

3.4. Consensus statements across perspectives

There are six most salient consensus statements that the three perspectives both consider important and completely agree or disagree on (Table 2). The two most prominent consensus statements concern the management of tourism and forests—the three perspectives all agree these sectors are not well managed. Logically, the statements that forest management needs to change in order to improve the condition of the forest and that politics has a strong influence on forestry come next. The idea that education in the villages must be improved gathers great support, as well as the opportunities that alternative tourism offers.

The controversial statements (Table 3) are headed by the one juxtaposing tourism and ecology, followed by more statements on tourism, its significance for the villages and whether the benefits it brings are only for the big hotels; as

Table 2. Consensus statements.

Consensus statements	Factor 1	Factor 1	Factor 2	Factor 2	Factor 3	Factor 3
	Z-score	Rank	Z-score	Rank	Z-score	Rank
15. Forests in Velingrad municipality are well managed	-0.63	28	-1.31	37	-1.35	37
41. Tourism in Velingrad municipality is well managed	-1.62	39	-1.37	38	-2.02	40
17. Forest management needs to change in order to improve the condition of the forest.	1	9	0.94	7	1.07	5
18. Politics has a strong influence on forestry.	1.34	3	0.47	13	1.02	6
5. Education in the villages needs to be improved to create more opportunities and initiative.	0.83	12	0.47	12	1.01	7
39. Alternative tourism (eco-, bike-, cultural, fishing) is a way to draw tourists out of the hotels.	1.23	5	0.89	8	0.78	10

Table 3. Controversial statements

Controversial statements	Factor 1	Factor 1	Factor 2	Factor 2	Factor 3	Factor 3
	Z-score	Rank	Z-score	Rank	Z-score	Rank
36. The economic benefits of tourism are currently more important than biodiversity conservation.	-2.04	41	1.75	2	-1.92	39
4. Tourism could be the future for the villages in the region.	1.1	6	-2.15	41	-0.39	29
37. Solid waste pollution in the municipality of Velingrad is a serious problem that also negatively affects forests.	1.59	2	-1.19	36	1.95	1
1. People from the villages are able to benefit from the developed tourism in Velingrad.	1.08	7	-0.96	35	-1.91	38
38. Tourism in the municipality of Velingrad benefits the large hotels and brings too few benefits to the local population.	-0.14	23	-0.29	25	1.9	2
22. For Velingrad to develop, there must be a balance between people and nature.	1.95	1	-0.35	27	1.12	4
23. Forest resources are not being overexploited.	-0.72	30	0.39	17	-2.15	41
14. There are bigger problems in the forests than illegal logging.	-0.54	27	1.64	3	-1.04	36
9. In ten years, there will be almost no people left in the villages.	-1.92	40	0.39	16	0.04	21
10. Wood processing, woodcarving, and traditional crafts are declining industries.	-1.41	38	0.86	9	0.01	22

well as the problem with pollution and the balance between nature and people. Lots of the controversial statements are focused on forests. The local perspectives are certain that they are managed well, but are not unified on whether they are overexploited, whether the logging is out of control and whether there

is a future for the local industry, related to timber. Another point of contention concerns the future of the villages: while some perspectives express optimism and see potential for development, others convey a more pessimistic outlook, anticipating decline.

4. Discussion

The research revealed stakeholders' perspectives, unpacking areas of consensus and conflicts that help understand what the local vibes, ideas, and attitudes are and reflect on the consequences of these on the local development and vice versa—how these are the product of local development.

4.1. Highlights on local issues

Previous studies concluded that the local ecosystems are experiencing a hard time due to several exogenous and endogenous threats acting all at once (Todorova and Zhiyanski 2024). Negative demographic trends that result in depopulation of the mountain villages have their reflection on forestry management, according to Dragozova et al. (2015). Socio-ecological research in the region revealed that conflicts and failures to understand behavioral responses are some of the barriers to improve forest biodiversity outcomes (Dragozova et al. 2015; Paligorov et al. 2015) and pose the question of whether the existing conservatism of forestry management will be adequate for the dynamic changes that come along with climate change (Ivanov et al. 2025). The illegal dumps have been investigated in the summer of 2023, and the issue with household, construction, industrial and plastic waste pollution is acknowledged (Tcherkezova et al. 2023). Studies have also confirmed that the model of development of the tourism sector in Velingrad, although overall profitable, does not lead to common improvement of wellbeing (Sabev and Yordanov 2018). Agriculture statistics indicators are declining both in terms of numbers of animals, arable area and profit (Municipality of Velingrad 2018).

4.2. Input from local perspectives

So, the issues addressed in the discourse are all confirmed by the literature. The way people see them and prioritize them gives additional insight beyond statistics and research. These perspectives are embedded in locally situated knowledge systems that have co-evolved with shared values and collective experiences, shaping how communities perceive and respond to environmental and socio-economic challenges (Gruber 2011). To use local knowledge, we need to understand both the dominant ideas that shape how knowledge is seen and the fact that local knowledge itself is diverse, changing, and based on different ways of thinking and doing (Nygren 1999). Practically, this means that the insights we get contain not only the individual opinion of people but how they collectively perceive certain problems and their solutions, which gives us the opportunity to look for the reasoning beyond these perceptions, in its historical background and more—how to shape/channel these into sustainable thinking.

4.3. Forest management

Ivanov et al. (2025) completed studies in the region and mentions that conservatism of forestry management is one of the indispensable characteristics of human resources engaged in forests management. At the same time, all three perspectives strongly agree that forests are not managed well, and this needs to change to improve the state of the forest. Paligorov et al. (2015) argue that multifunctional forest management is a very good solution, allowing stakeholders to engage in forest management and this way, to minimize the political influence in the sector. The Forest management plan he and his team created in 2015 is designed together with stakeholders, exactly as Adamski and Gorlach (2007) advice, and suggests an excellent framework to address the problems in the sector. But ten years later, it remains unclear whether any actions are undertaken and if they have reached any results (Todorova and Zhiyanski 2024). The belief that politicians have a profound influence on the sector is deeply rooted in local perceptions, and although, obviously, forests are cherished, and the people working in forestry are respected, there is a great dose of pessimism for the forests' future, which leaves people with the sense that nothing depends on them. This is confirmed by the hesitant perception of the problems in forests—people have a general sense that something is not right, but no specific idea of what that is. Their answers indicate they see the problem, they are frustrated, but they consider themselves detached from it. These current perceptions may also be the result of the memories from the past century (especially for the older generations), when people were collectively involved in forestry during communist times and had more trust in the system, being part of it. This aligns with Elinor Ostrom's findings (1990) that collective efficacy and trust in institutions are vital for resource stewardship; where these are absent, as in many post-communist contexts, communities lose the motivation to engage. Similarly, Murray Bookchin's theory of social ecology (Bookchin 1982) helps explain this detachment as a form of political and ecological alienation. There are successful examples in Bulgaria of community engagement in environmental issues that have effectively safeguarded natural resources and defended the public interest (Todorov and Kirilov 2022). The mechanisms for citizens' involvement in local governance in Velingrad need to be improved as a first step for building a strong community for a resilient future through better citizens' engagement.

4.4. Tourism development

Including the locals and enhancing the endogenous potential are essential for the survival chances of vital communities (Maino et al. 2018). This is particularly relevant in the context of tourism, where local engagement is very important for sustainable and resilient outcomes. The consensus statements point to potential opportunities to expand community-based tourism, which is seen as a common ground for joint action. The detachment there comes from the concentration of resources and power in the luxurious hotels. This topic reveals deep divisions, illustrating divergent priorities or perceptions among stakeholder groups about the economic benefits of tourism outweighing biodiversity conservation. This produced the highest z-score variation, indicating a major

fault line between those who prioritize ecological sustainability and those who see tourism as a vital economic engine. This high-disagreement signals areas where dialogue and negotiation are most needed, especially around tourism's role, environmental trade-offs, and benefit-sharing mechanisms. The consensus on the need for alternative tourism reflects a broader recognition of the necessity to diversify and expand the sector. However, the role of rural villages within this envisioned development remains controversial, revealing underlying hesitations regarding their perceived value, capacity, and integration in tourism planning.

4.5. Development and management of mountain villages

When it comes to villages, they find themselves situated between a struggling agricultural sector, a politically influenced forestry industry, and a tourism sector that remains largely inaccessible. Their cultural traditions and landscapes are often undervalued as development assets. Moreover, the future of these villages is not perceived as a shared societal responsibility, but rather as a challenge they are expected to manage on their own.

To change the course of local development, the management model needs to be reframed into a more open community-based platform that integrates local voices and energy. Applying the bottom-up principle through community-led local development (Courades and Brosei 2018; Saracu and Trif 2019; Kah et al. 2023) is a way of encouraging shared responsibility and trust, aligning with Ostrom's principles of collective governance (Ostrom 1990). This involvement needs to be done without bureaucratizing or politicizing local's activities (Marango et al. 2021) and by involving them not only in framing the policies but also in the implementation and monitoring process.

4.6. Limitations of the study

The limitations of the study stem from the broad scope and complexity of the topic, which encompasses multiple intersecting themes. Due to this multifaceted nature, it was not feasible to explore each dimension in comprehensive depth. Furthermore, the study attempts to include diverse stakeholder groups, but nevertheless, some perspectives may remain underrepresented (Pagot and Gatto 2024). Further research is needed to identify specific actions for integrating stakeholders and fostering neo-endogenous development. Although this study does not employ a spatial analytical approach, the role of place and geographic context is undeniably relevant to local development. Future research could combine Q methodology with spatial tools such as participatory mapping or GIS to examine how stakeholder perspectives intersect with geographic realities.

5. Conclusion

The study identifies shared and divergent perspectives that are a reflection of the stability of the socio-ecological system and a result of its long-term dynamics. The Q methodology offers a roadmap for understanding local development perceptions, their nuances and the root causes underlying them. The results

revealed three distinct perspectives with both consensus and conflict points. The first perspective is distinctly shaped by people from villages and foresters. It uniquely emphasizes tourism as both currently and prospectively vital for villages. It recognizes the value of regulating ecosystem services and anticipates the increasing importance of forests. While it closely aligns with the second perspective regarding the role of forests and villages, the latter diverges by prioritizing tourism over nature conservation and downplaying environmental pollution. Although it values forests highly, the second perspective expresses strong pessimism about human impact and underutilized economic potential, viewing both forestry and agriculture as in decline. It also does not consider tourism could bring any more to the region that it currently does. The third perspective, primarily held by middle-aged respondents, shares the same view on forests as the first factor but is more sceptical about the viability of villages. It demonstrates heightened ecological awareness and seeks development opportunities across forestry, agriculture, and tourism. The study revealed deep distrust in the governing system and a general sense of political and ecological alienation. Nevertheless, exceptions from this model are also observed, and examples of local initiatives and motivation are also present. The study recommends transforming the local management model by engaging people and harnessing their energy and local knowledge as essential for crafting inclusive, place-based policies that recognize the local potential, but also integrate the dynamics and resilience of the surrounding ecological systems. It is essential that this involvement takes place from building the policies and continues in its implementation and monitoring phase.

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Additional information

Conflict of interest

No conflict of interest was declared.

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Author contributions

Conceptualization: ET, MZ. Data curation: ET. Formal analysis: ET. Funding acquisition: ET. Investigation: ET. Methodology: ET, MZ. Project administration: ET. Resources: ET. Visualization: ET. Writing - original draft: ET. Writing - review and editing: MZ, ET.

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Data availability

All of the data that support the findings of this study are available in the main text or Supplementary Information.

Supplementary material 1

Q sorts

Authors: Elena Todorova, Miglena Zhiyanski

Data type: xlsx

Explanation note: The supplementary file contains the Q set (statements that were arranged by the participants) and the 26 Q-sorts obtained during the study.

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