Л.Н. Гумилев атындағы Еуразия ұлттық университетінің ХАБАРШЫСЫ.
ISSN (Print) 2789-4320. ISSN (Online) 2789-4339

МЕНЕДЖМЕНТ/ MANAGEMENT/ МЕНЕДЖМЕНТ

IRSTI 06.71.63
Scientific Article

https://doi.org/10.32523/2789-4320-2025-3-119-141

The study of market and economic policy instruments in Kazakhstan: the case of eco-awareness policies

Y.A. Kumar*[1], Zh.B. Utarbayeva[2], K.D. White[3]

[1] Eurasian National University, Astana, Kazakhstan
[2,3]KIMEP University, Almaty, Kazakhstan

(E-mail: [1]yernazar.kumar@kimep.kz, [2]Zhamilya@kimep.kz, [3]kwhite@kimep.kz)

Abstract. Market and economic policy tools are commonly used across the globe to address not only socio-economic issues, but also various environmental issues. In Kazakhstan, the use of market and economic policy measures has become increasingly popular among policymakers.

The study aims to create the first six-item market and economic-based ecoawareness policy taxonomy, which was then evaluated based on nine socio-economic and political assessment indicators, namely effectiveness, transparency, legitimacy, political acceptability, administrative feasibility, enforcement, equity, adaptability, and positive social impact. For that, first, via a thorough literature review, a total of sixteen academic sources that covered market and economic-based eco-awareness policy instruments were identified and synthesized on Google Scholar. Then, online interviews with 30 Kazakhstani ecology experts were conducted to assess each of the six items one-by-one.

Based on the assessment results, all six market and economic tools showed middle-level scores in all six indicators. While the waste charge mechanism tool demonstrated high scores in legitimacy, positive social impact, and enforcement indicators, the deposit-refund scheme and tax cuts relief measures received high scores in the positive social impact indicator. Overall, the financial support for nature conservation and eco-tourism efforts received the highest average score, followed by waste charge mechanisms and tax cut relief measures. These primary data results are of high significance for both environmental policymakers by allowing them to better understand the drawbacks and benefits of each market policy tool. However, research limitations, such as researcher bias and the market-based taxonomy being incomplete and requiring some tinkering, still need to be addressed in future research analysis.

Keywords: Kazakhstan, market and economic-based policy instruments, environmental domain.

Received 23.02.2025. Revised 17.05.2025. Accepted 21.08.2025. Available online 30.09.2025

[1]* the corresponding author

Introduction

Nowadays, environmental problems have become a serious social and government issue all around the world. With technological advancements and human ingenuity developing at a very fast pace, the search for effective policy solutions that could mitigate or solve environmental problems are becoming highly important. Nevertheless, depending on the contextual setting, each country faces their own environmental policy challenges. Various policy tools exist that aim to address environmental problems in any country, ranging from market-oriented approaches to regulatory policy measures. In Kazakhstan, environmental problems have become, alongside the issue of corruption, a systemic headache, which requires the use of various policy tools, resources, and management capabilities.

The study of *market-based (MB)* environmental policies can be considered a well-researched domain all around the world. Nevertheless, no attempts have so far been made to study MB environmental awareness policy tools in Kazakhstan, albeit presence of abundant studies covering specific environmental policy tools related to air pollution or climate change. Therefore, this paper will attempt to create the first policy tool taxonomy and evaluate each instrument with the help of 30 Kazakhstani ecology experts.

Structurally, the paper is divided into seven parts. In the first part, a thorough literature review is presented, where the concept of policy instruments and studies related to MB environmental policies are discussed. Afterwards, the research method section is outlined in which the way how the policy tool taxonomy alongside the assessment indicators is designed and constructed. Next, the research results and discussion sections are discussed, where first the overall results are summarized and then each six MB policy tool's developments in the context of Kazakhstan are explored in detail. In the last two sections, the conclusions of our study and the study's research limitations, as well as future research suggestions, are laid down.

Literature review

Definition & Types: Policy Instruments

According to many definitions, *policy instruments (PIs)* can be understood as policy tools that aim to achieve a certain goal. Others define it as a means that governments use to accomplish certain goals or support major policy initiatives. Often, governments use PIs to either reach specific objectives, such as the objective of reducing levels of air pollution in urban and rural areas, or to supplement other policies in achieving a greater policy objective. For instance, the use of carbon taxes is not only meant to address air pollution issues, but they are also designed to serve as a tool to strengthen sustainable development policies within the environmental market sphere. Each PI type uses various policy tools and has its own strengths and weaknesses when it comes to its effectiveness and efficiency in achieving a specific policy goal.

Generally, PIs are mostly divided into three main types: command-and-control type, MB type, and information-based type. First, speaking of command-and-control type tools, here the focus is on the use of rules and legislations to impose specific policy changes. Often, to enforce adherence to the rules and legislations that governments impose on industries or companies are accompanied using sanctions and punishments. From an environmental policy perspective, the regulations that enforce environmental standards for polluting industries can be pointed out. Other examples also include the effluent national standards that were set to address various environmental

problems around the world. For example, in the USA, the *Clean Air Act* were implemented since the 1970s with the objective to combat air pollution-related consequences. Globally, industrial companies that emit pollution into the atmosphere are subject to specific emission-reduction targets. Another example of a command-and-control policy tool in the environmental sphere are regulations related to *best-available-techniques (BAT)* standards to turn industrial equipment and machines in the production process into tools that are environmentally friendly.

Second, unlike command-and-control type PIs, MB policy tools use the markets, prices, and other economic-related variables to either provide incentives or generate disincentives to bring about certain behavioral changes. For instance, these may include the use of taxes and subsidies. In the context of environmental policies, MB PIs aim to use market incentives, price manipulations, and other economic policy variables to address market failures. Here, the use of carbon taxes is one of the tools that the government applies to mitigate or reduce the so-called issue of environmental externalities. Another example involves the implementation and enforcement of fines for environmental polluters as a form of disincentive for companies or industries. With its use, industries or companies are punished if the release of pollution in the atmosphere or land goes past a certain level of pollution limit.

Research on MB Environmental PIs

Research on MB PIs is more than plenty. Nowadays, each country and each organization has created its own list of MB PIs that can be used to address specific environmental problems.

Over the years, numerous scholars studied MB environmental PIs in various country-specific case studies. Based on the *Google Scholar* research engine, typing *"MB environmental policy tools"* in the search provides more than 421,000 search hits. Hence, MB PIs are studied within various environmental research domains ranging from biodiversity and air pollution to climate change and green economy aspects. Hence, its global research outreach is huge and extensive.

According to most foreign academic literature, MB PIs can commonly be divided into the following six main types: (1) the use of charges, taxes, or levies; (2) the use of tradable permits; (3) the use of deposit-refund scheme systems; (4) the application of subsidies and/or incentive-based tools; (5) the use of liabilities and compensation schemes; and (6) application of green public procurement and eco-labeling. For instance, to address greenhouse emissions, the Center for Climate and Energy Solutions recommends using a combination of MB strategies, namely the use of carbon tax and cap-and-trade programs.

Canada, a country close to the US, is known for using a complex set of policy approaches that facilitate environmental protection measures. As an example, it uses discharge fees for polluters and applies marketable emissions permits. Similarly, in Kazakhstan, carbon tax and emission permits are also popular MB policy tools to reduce environmental pollution and develop green growth mechanisms. While MB PIs are argued to be effective in decreasing to a certain degree the level of environmental pollution, they are not the ultimate panacea.

Often, the issue with solving environmental problems is that the government needs to find a golden middle between allowing firms to operate while at the same time not over-damaging the environment and making the public overly concerned, especially evident in Kazakhstan and other emerging countries. Here, the government's role is to create the rules of the game that everyone can stick to and where everyone can benefit the most, including society. Second, big industrial firms often receive very strong support from political lobbyists that keep them undeterred from laws

that aim to put their industrial activities at risk. In this regard, MB PIs are more seen as a policy tool that can influence the price and market mechanisms in such a way that it leads not only to pro-environmental behavioral changes, but also helps to promote environmental justice initiatives.

Studies in Kazakhstan

In the context of Kazakhstan, MB PIs' studies were covered from various research angles. For instance, one group of scholars looked at specific MB PIs and its impacts on environmental policies on a global level. As an example, Howie et al. paper critically analyzed the policy strengths and weaknesses of emission trading schemes between South Korea and Kazakhstan [1], while Markhayeva et al. article conducted a comparative analysis by investigating how banking support mechanisms helped to implement the government's environmental policy programs in Kazakhstan and the Russian Federation [2].

Another group of scholars studied how various environmental policies with their specific policy tools in Kazakhstan affected different environmental domains on a national level. As an example, the paper by Bokayev et al. in 2023 thoroughly analyzed how current and past marketing policy tools have helped to develop and aid green projects in the country [3]. The use of public crediting to improve business entrepreneurship conditions in facilitating environmental sustainability has also been well-examined in a more recent 2023 study by Kurmanalina et al. [4].

Aspects related to policies that facilitate the process of low-carbon transition are also nowadays popular research streams that local and foreign scholars have looked at. For instance, Daniya & Tang (2024) investigated Kazakhstan's MB state initiatives that helped the industrial sectors to transition to a more effective low-carbon-oriented economy [5], while Ospanova thoroughly examined how specific policy tools as the *Green Bridge Partnership, Zhasyl Damu 2010-2014* programs or civil society actors helped strengthen the transition to green economy [6].

Having outlined a literature review analysis, the following main research gaps were identified. First, while a handful of research papers have studied specific environmental policies or PIs in the context of Kazakhstan, no research article so far has thoroughly assessed MB PIs using specific environmental assessment indicators. Hence, this study will apply specific assessment indicators designed and previously used in foreign contextual settings.

Second, considering the growing recent popularity of sustainable development policies and the presence of ecology experts in Kazakhstani eco-activism efforts, it would be very useful for environmental policy makers to understand the views of Kazakhstani ecology experts on how they perceive and assess the environmental awareness-related MB PIs in terms of the aspects pertaining to effectiveness, political acceptability, or enforcement. Here, the primary data acquired from this research paper will provide a comprehensive and holistic view about MB policy tools used in Kazakhstan, which can be used to by Kazakhstani environmental policy makers not only as a policy blueprint or guidance book in evaluating other policy approaches, but it also can be used to better understand the weaknesses and strengths of each MB PIs. Thus, the primary data obtained from this study can aid in better designing environmental policies and provide expertise knowledge for environmental awareness front-line practitioners.

Methodology

This study has two main research objectives. First, the paper will provide a list of eco-awareness MB PIs from a list of sixteen academic sources (Table 1). This is done via a literature

review analysis, which is located and extracted from the *Google Scholar* research engine website. Then, having compiled a list of MB PIs, the finalized PIs are then checked for their correctness of fit as 'true' eco-awareness MB PIs by 30 ecology experts based on online interviews.

The online interviews consisted of only local Kazakhstani ecology experts, with whom online interviews were conducted via the Zoom platform. As a research method to locate Kazakhstani ecology experts, the professional business platform *LinkedIn* website was used, where the convenience sampling method was applied. The convenience sampling method is used in qualitative studies that involve the researcher selecting participants purely based on the participant's accessibility for the study. In other words, the researcher will include participants who are easier and faster to reach and not include in the study those who are inaccessible. This type of sampling method is often criticized for causing sampling bias and ignoring the importance of random population sampling. Thus, the population sample might not represent the whole population as effectively as a random sampling approach.

In the second stage, the 30 ecology experts are then asked to analyze each of the six MB PIs based on 11 assessment indicators. These indicators were constructed from a list of specific foreign academic sources, where research works mainly covered assessment indicators designed only for evaluating environmental PIs. These included the following nine indicators: (1) transparency (TR); (2) legitimacy (LE); (3) equity (EQ); (4) adaptability (AD); (5) enforcement (EN); (6) effectiveness (EF); (7) administrative feasibility (AF); (8) political acceptability (PA); and (9) positive social impact (PSI) (Table 2). It is worth mentioning that three indicators were taken from the paper written by UNEP [7] and five by Mickwitz [8]. The only indicator that was self-constructed was the indicator that assessed a PI's 'positive social impact'.

During the online interviews, ecology experts were given the option to rate the level of importance of specific assessment indicators based on their practical importance for the study. Originally, the assessment indicators consisted of fourteen potential items. However, after having conducted online interviews, they were then shortened to only eleven items. The following three indicators were excluded from the final list namely indicators related to long-term policy effectiveness, short-term policy effectiveness, and cost-effectiveness of policies.

In Table 2, each assessment indicator's academic source, type, assessment question, and the interpretation of scale score responses alongside scale score response ranges were accurately written down (Table 2). Each ecology expert had to assess each PI based on a 3-point Likert Scale type, where a score of '1' represented a 'low level', '2' represented a 'middle level', and '3' represented a 'high level'. The aggregate scores of all six MB items by 30 ecology experts then gave us the 'average scale scores' for each of the nine indicators.

Table 1. Academic sources used to create MB eco-awareness PIs

No.	Academic Source	URL/DOI:	Area of Study	Taxonomy Classification of PIs
1	Vedung et al. (1998)	https://doi.org/10.4324/9781315081748.	Environmental Policy	Use of regulations (sticks); economic/market interventions (carrots); information-approach tools (sermon).

2	Coria & Sterner (2011)	https://dx.doi.org/10.1146/annurev-resource-083110-120131.	Environmental Policy	Eco-regulations; market use; societal involvement; direct provision; international treaties; macro-economic policy tools.
3	OECD (2017)	https://www.oecd.org/environment/tools-evaluation/PINE_database_brochure.pdf	Environmental Policy	Use of taxes, fees & charges; tradable permits schemes; deposit-refund mechanisms; subsidies usage; voluntary approaches.
4	Böcher & Töller (2007)	https://www.pollux-fid.de/r/sw-685f5592eededbde	Environmental Policy	Regulatory tools; market use; procedural tools; co-operational; persuasive-oriented mechanisms.
5	Oz & Esgunoglu (2017)	https://doi.org/10.1007/978-3-319-46319-3_16	Environmental Policy	Customs; MB measures; command-and-control type measures.
6	Knill et al. (2011)	https://irihs.ihs.ac.at/id/eprint/2092/1/pw_125.pdf	Environmental Policy	Regulative measure; technological standards; use of tax/subsidy; liability-oriented; public investment; informative tools; etc.
7	Ministry of Environment and Natural Resources	https://online.zakon.kz/Document/?doc_id=34476424&doc_id2=39768520	Environmental Policy	Eco-education; awareness campaign; regulations; market use; etc.
8	Huppes & Simonis (2009)	https://doi.org/10.1007/978-1-4020-9158-2_13	Environmental Policy	Political-administrative policy measures; use of regulations and prohibitions; social-oriented tools; etc.
9	Thorsen et al. (2014)	https://jukuri.luke.fi/handle/10024/504515	Environmental Policy	Command-and-control tools; economic instruments; use of informational & educational mechanisms.
10	Monroe et al. (2008)	https://doi.org/10.1080/15330150801944416	Environmental Education	Information-oriented; tools enabling the learning of practical skills; provision of mechanisms ensuring sustainable actions.
11	Hamilton et al. (1997)	https://documents1.worldbank.org/curated/en/209081468739294734/pdf/multi-page.pdf	Sustainable Development	Market mechanisms; regulatory tools; public engagement.

12	Persson (2007)	https://etheses.lse.ac.uk/909/	Environmental Policy	Informational tools; incentive-oriented approaches; directive-based regulation.
13	Bragadottir et al. (2014)	https://copenhageneconomics.com/wp-content/uploads/2021/12/The-Use-of-Economics-Instruments-in-Nordic-Environmental-Policy-2010-2013.pdf	Environmental Policy	Economic-based tool; administrative-oriented; informational-based; research-oriented.
14	UNEP (2019)	https://wedocs.unep.org/handle/20.500.11822/27663;jsessionid=AEBD5853AE98522E719160EAEF789424	Environmental Policy	Command-and-control; economic incentives; enabling actors; supporting investments.
15	Moore (2001)	https://researchportal.murdoch.edu.au/esploro/outputs/conferencePaper/Social-and-economic-influences-on-restructuring/991005545288207891#file-0	Biodiversity Conservation	Motivation-based; financial approach; MB tools; self-regulatory mechanisms; regulatory tools; etc.
16	Partanen-Hertell et al. (1999)	https://helda.helsinki.fi/items/5121d884-69ec-48bd-8a3c-0c0ad350024b	Environmental Education	Economic means; use of regulations; information-oriented approaches.

Note: Compiled by the authors based on literature review analysis via Google Scholar.

Table 2. 11 Indicators with descriptions, questions, and scale score responses

Assessment Indicator	Assessment Type	Academic Source	Assessment Question & Explanation	Scale Score Response	Scale Response Range
Degree of LE	Democracy Type	Mickwitz [8]	How well does the society support and accept the PI?	3: HL LE 2: ML LE 1: LL LE	0-1: LL LE 1-2: ML LE 2-3: HL LE
Degree of TR	Democracy Type	Mickwitz [8]	How well are the PI's outcomes and processes publicly observable?	3: HL TR 2: ML TR 1: LL TR	0-1: LL TR 1-2: ML TR 2-3: HL TR
Degree of EQ	Democracy Type	Mickwitz [8]	How well do participants have equal opportunities	3: HL EQ 2: ML EQ 1: LL EQ	0-1: LL EQ 1-2: ML EQ 2-3: HL EQ

			to participate/ influence in implementation process?		
Degree of EF	Performance Type	Mickwitz [8]	How well do achieved outcomes correspond to PI's intended goals?	3: HL EF 2: ML EF 1: LL EF	0-1: LL EF 1-2: ML EF 2-3: HL EF
Degree of AF	Politico-administ-rative Type	UNEP [7]	How well is the PI technically feasible in administrative context?	3: HL AF 2: ML AF 1: LL AF	0-1: LL AF 1-2: ML AF 2-3: HL AF
Degree of PA	Politico-administ-rative Type	UNEP [7]	How well is the PI supported on a high political level?	3: HL PA 2: ML PA 1: LL PA	0-1: LL PA 1-2: ML PA 2-3: HL PA
Degree of AD	Adaptivity Type	Mickwitz [8]	How well does PI cope with social changes & technological progress?	3: HL AD 2: ML AD 1: LL AD	0-1: LL AD 1-2: ML AD 2-3: HL AD
Degree of PSI	Social Type	Self-made	Measures the degree of positive impacts on the society.	3: HL PSI 2: ML PSI 1: LL PSI	0-1: LL PSI 1-2: ML PSI 2-3: HL PSI
Degree of EN	Legal Type	UNEP [7]	How well is the PI legally enforced in practice?	3: HL EN 2: ML EN 1: LL EN	0-1: LL EN 1-2: ML EN 2-3: HL EN

Note – Compiled by the authors based on [7, 8]. HL = High Level; ML = Middle Level; LL = Low Level

Findings and discussion

The tables below illustrate the findings of the assessment results of the six MB PIs. While Table 3 presents the finalized list of six MB PIs with its academic sources as well as reference to the *New Environmental Code (NEC)* of Kazakhstan, Table 4 highlights the assessment results of the six MB PIs based on nine indicators. Among the six PIs presented in Table 1, only three of them were mentioned in the NEC.

Table 3. The six eco-awareness MB PI items

Item	PI Example	Academic Source	NEC Article
1	Environmental taxes used as costs for environmental damage to companies that pollute (e.g., use of carbon tax); application of polluters-pay-principle and eco-insurance mechanisms.	Hamilton et al., 1997; Vedung et al., 1998; Böcher & Töller, 2007; Persson, 2007; Knill et al., 2011; OECD, 2017; Oz & Esgunoglu, 2017.	127 129

2	Green crediting & financing mechanisms for eco-awareness-raising programs, renewable energy sources, environmentally friendly production technologies, etc.	UNEP (2019).	130
3	Deposit-refund schemes (DRS) for plastic bottles, lead-acid batteries, scrapped tyres, and glass. (A DRS charges user an extra fee when they purchase a product, which is refunded when returned for recycling/reuse.)	Hamilton et al., 1997; Huppes & Simonis, 2009; Coria & Sterner, 2011; Bragadottir et al., 2014; OECD, 2017.	Not mentioned
4	Provision of public state funds/ subsidies/grants/loans for nature conservation and sustainable development projects to aid eco-awareness & eco-friendly production system.	Partanen-Hertell et al., 1999; Böcher & Töller, 2007; Knill et al., 2011; OECD, 2017; UNEP, 2019.	130
5	Tax cuts, tax exemptions, or relief measures for eco-friendly investment among companies and industries.	Vedung et al., 1998; Knill et al., 2011; Bragadottir et al., 2014; Thorsen et al., 2014; OECD, 2017.	Not mentioned
6	Volume-dependent municipal waste charge.	OECD (2017)	Not mentioned

Note – Compiled by the authors based on numerous academic sources.

Table 4. Assessment indicator results for MB PIs

Item	PI Type	LE	TR	EQ	PA	AF	AD	EF	EN	PSI	Overall Mean Score
1	MB	1.90	1.25	1.41	1.65	1.83	1.60	1.44	1.89	1.72	1.63
2	MB	1.90	1.67	1.53	1.53	1.75	1.61	1.58	1.61	1.85	1.67
3	MB	1.84	1.67	1.68	1.44	1.63	1.53	1.89	1.72	2.11	1.72
4	MB	2.05	1.69	1.78	1.65	1.78	1.84	1.94	1.83	1.95	1.83
5	MB	1.95	1.53	1.72	1.65	1.89	1.74	1.89	1.53	2.00	1.77
6	MB	2.00	1.42	1.78	1.53	1.74	1.72	2.00	1.79	2.00	1.78
Average MB		1.94	1.54	1.65	1.57	1.77	1.67	1.79	1.73	1.94	1.73

Note – Compiled by the authors based on expert interview results.

Based on the assessment results, the following findings can be extrapolated. Looking at the six MB PIs, among all nine assessment indicators, the highest average scores were received by the indicators LE and PSI (both 1.94), followed by EF (1.79) and AF (1.77), while the lowest average scores were received by the indicators TR (1.54) and PA (1.57). Next, on average, all six PIs were

assessed to have middle-level scores in all nine assessment indicators. While item 6 showed high-level scores in LE (2.00), EF (2.00), and PSI (2.00) indicators, item 4 showed only a high-level score in LE (2.05) indicator. On the other hand, both items 3 and 5 were assessed to have high-level scores in PSI (2.11 and 2.00, respectively) indicator. In terms of the overall score, the highest overall score was received by item 4 (1.83), followed by items 6 and 5 (1.78 and 1.77, respectively).

Eco-Taxes (Item 1)

Overall, eco-taxes act like PIs that raise the awareness of industries about their pollution activities while also holding them accountable, which are stipulated within the NEC Articles 127 and 129. An environmental tax acts like an additional fee on industries that pollute, which are meant to change the way how industries work in the business sector. As an example, a carbon tax is implemented to not only encourage companies and industries to reduce their carbon footprint, but also to allow for the smooth transitioning towards a green economy and sustainable development. To put it simply, pollutants are taxed to offset their environmental damage or pollution they cause. Considering Kazakhstan's national commitments towards carbon neutrality by 2060, environmental taxes are one of the many policy tools that would support the efforts aimed at diversification of the economy beyond the use of fossil fuels. These efforts should also address issues not only related to greenhouse gas emissions, but also allow the country to gradually allow companies operating in the country to switch towards the use of more eco-friendly technological standards.

For many years, pollution taxes (previously named as charges) in Kazakhstan were meant to support regional and local budgets, but not address environmental problems. In the past, criticisms on environmental reports concerned the use of pollution taxes on air and water pollutant industries, as it lacked transparency with obscure criterions for determining specific levels of pollution charges were common in the country. Hence, this explains why this PI showed very low transparency scores alongside being poorly enforced and ineffective based on analysis results.

Looking at the atmospheric pollution emissions for the period 2020-2024, emissions for more than six gas emissions (e.g., sulfur dioxide, nitric oxide, and others) are projected to likely increase in the future [9]. These numbers highlight the country's huge concern over the rising air pollution emission levels, with 40% stemming from energy industries [9]. Likewise, the amount of eco-taxes collected also increased between 2016–2021 from 1.15 trillion to 2.26 trillion tenge [10], which suggests that the government has considered the issue of rising pollution levels as a real national health concern. Since 2023, energy-related industrial sectors contribute the most share of pollution into the atmosphere followed by the agricultural sector in the country [11]. Hence, the use of various environmental taxes to mitigate carbon emissions is imperative. It is also worth pointing out that according to Yesbergen et al. [12] study on the development of green economy in Kazakhstan, the number of organizations with green and product innovations have significantly dropped during the periods 2016-2022. These data results suggest that while more environmental taxes were collected over the years, there is still a weak encouragement for businesses to transition towards sustainable industrial practices. To tackle this issue, it is necessary to demand for stronger political will in the political echelon to implement policies that would encourage businesses, industries, and companies to integrate better environmentally sustainable practices in their business activities, which particularly concerns green innovations.

With the NEC's introduction of '*polluters-pay-principle',* the costs of pollution prevention measures are now entirely shouldered by the polluters. Apart from eco-taxes, more comprehensive eco-permit requirements, extension of eco-inspection periods, or obligatory installation of automated emission monitoring system were also introduced. Here, the main goal of eco-taxes is not only to make polluting industries pay, but also to change their industrial activities and behavior in such a way that would make them more aware of the harmful industrial impact that their activities have. Thus, creating an incentive to correctly follow pro-environmental regulations. These new legal novelties show that the political and social acceptability levels for this PI item will likely rise in the future, suggesting to us that the government will ensure in the future that eco-tax policies are properly enforced and implemented, meanwhile holding polluting industries more accountable. However, policy makers must always keep in mind that environmental taxes must not discourage innovation but, in fact, encourage it. To achieve it, the government must build a regulatory playing field which is transparent, fair, and just for both society, the business sector, and the government itself. Unfortunately, this is no simple task, as it requires time, efforts, resources, and a bit of patience.

Green Finance Mechanism (Item 2)

Green financing mechanisms play a crucial role in stimulating eco-awareness-raising policies. By adjusting the physical modifications of the economy of Kazakhstan, particularly those related to ecologically sustainable agriculture, projects facilitating eco-friendly saving and energy efficiency, ecological recycling mechanisms or sustainable water management, it is possible to transition towards an eco-friendly economy that adapts gradually but smoothly to the economic realities of Kazakhstan. Since the early 1990s, Kazakhstan has poured large finances to address various environmental issues, ranging from renewable energy and air pollution to climate change-related matters. Only in 2013, the *'green economy'* concept was first adopted, which spurred the *Ministry of Environment and Natural Resources (MENR)* to introduce green financing policy measures [11].

Over the years, studies on green finance have become an increasingly popular research stream among local scholars and practitioners. While research papers covering the topic have grown, the government has also adopted numerous legislative reforms, such as the *Strategic Plan for Renewable Energy of 2009* or the *Law on Support for Renewable Energy of 2009*, to push for green growth processes. Apart from that, the country has also agreed to follow with the Paris Agreement objectives to decrease greenhouse gas emissions at home, as well as created the so-called *'Astana International Financial Centre*' in 2018 to strengthen the regional financial developments of green growth policy mechanisms across the Central Asian region by issuing green bonds. All these efforts are aimed at facilitating the smooth but slow transition towards an economy led by green growth policy mechanisms.

According to Litvishko et al. [13], the share of allocated green investments for eco-education aspects is still low, hence, explaining the PI's low political acceptability. As an example, investments in green financing projects rose during the 2013-2020 period from 29.9 billion tenge to 129.4 billion tenge, while the total amount of investments in eco-awareness projects was still not clearly presented [14], pointing to its low transparency level and weak inclusion of eco-awareness aspects within Kazakhstani green financing mechanisms.

Besides institutional challenges, limited reporting, disclosure of project's successes, weak cross-sectoral coordination, and legal frameworks impeding proper embedment also existed in the past, pointing to the PI's weak compliance and effectiveness measures [15]. One must also consider the fact that Kazakhstan is the second largest coal producer in the Central Asian region, meaning that the country is hugely dependent on coal-fired plants. Thus, from an economic point of view, Kazakhstan faces a dilemma: either using the natural resources as an economic resource while shutting an eye on the release of carbon emissions, or further developing green growth mechanisms by moving away from fossil fuel use. Despite all these challenges, green finance policies look promising, particularly in the fields of solar and wind energy as a renewable energy source. With the recent introduction of the NEC, waste recycling and water-saving policy mechanisms are underway that aim to address the lack of water resources and waste management matters related to recycling, reuse, and disposal.

Deposit-refund Schemes (Item 3)

Next, the paper will speak about DRS, which refers to the use of a surcharge on a product when bought, and citizens are able to obtain a rebate of the same product when returned to a refund vending machine. These vending machines are particularly popular in Germany, with the refunds marked on reusable plastic bottles or cans. As a result of installation of innumerable DRS vending machines across Germany, the government has developed a society that cherishes an eco-friendly way of lifestyle.

In the context of Kazakhstan, this PI has been developing so far poorly due to the public being poorly informed and unaware about simple waste sorting and recycling practices, while at the same time it is projected that the amount of waste would also increase in the next five to ten years [16]. Consequently, one may expect the public demand for the implementation of proper waste management and recycling systems to increase, too.

On a governmental level, there are no huge state-led programs aimed at supporting plastic and glass DRS [17]. This explains the items low political acceptability and enforcement scores. Moreover, according to *Shassalim Shagalimov,* a Kazakh eco-activist who launched with his eco-company named ZQ-2021 numerous DRS machines, Kazakhstan's DRS mechanisms are systemically under-studied and under-utilized, as justified by the item's low transparency level [17]. Another major problem related to the effective implementation of DRS concerns the issue of low city-level government initiatives to promote recycling projects to potential investors and market it properly to the public. Without strong, selfless eco-activism efforts, it is very difficult to push for small changes on a local level. According to *Shassalim Shagalimov*, the major problem with launching DRS machines in major cities is the lack of government-backed funding [17]. Hence, financial support is an important factor that basically decides the death or growth of such projects.

Despite alarming future trends, various local eco-companies *(e.g., Recycle Birge, West Dala,* etc.) have entered the local market with the objective to educate the citizens about the importance of waste management via eco-marathons or seminars. Here, it is of utmost importance for the government to continue financing eco-educational programs to enlighten both the citizens and businesses about eco-management and eco-networking via nationwide grassroots and state-led awareness campaigns.

Additionally, a local waste-recycling female expert, *Pakizat Saylaubekova*, also recommended that the MENR launch awareness campaigns about waste management responsibilities to

better facilitate eco-entrepreneurship networking and provide green project funds through the EcoQoldau system [16]. Overall, this PI had higher effectiveness and positive social impact levels than item 7 despite having regulatory compliance problems.

Promoting SDG principles and nature conservation efforts (Item 4)

The use of subsidies, grants, and loans is one of the means to support nature conservation efforts, which are particularly being implemented nowadays in Kazakhstan via the nationwide eco-tourism policy initiatives. Eco-tourism is considered in many countries, particularly in Iceland, New Zealand, and Norway, as both a tool to raise national revenue and at the same time are considered a mechanism that allows for the preservation of nature in an eco-friendly and sustainable manner.

In the context of Kazakhstan, nature conservation efforts in the form of eco-tourism have gained over the last ten years huge state and private support via investments. Currently, several national nature parks and nature reserves exist in Kazakhstan, such as Altyn Emel National Park, Charyn Canyon, Bayanaul, Kolsai Lake and many others. As the country is filled with rich nature ranging from mountains, lakes, or sand dunes, the government has acknowledged the market potentials eco-tourism can bring and the importance of nature conservation efforts for safeguarding nature from degradation and neglect. According to Kumar & Sheryazdanova [18], the development of eco-tourism has gained popularity in Kazakhstan only by the beginning of the early 2000s, and since then, numerous local and international environmental *Non-Governmental Organizations (NGOs)* have been involved in promoting eco-tourism projects across the country. Environmental organizations as the *Ecotourism Information Resource Centre (EIRC),* the *United Nations Development Program (UNDP),* or the *Organization for Security and Co-operation in Europe (OSCE),* are some of the examples. Over the years, numerous scholars have discussed the weaknesses and strengths of eco-tourism policy developments in the country. Challenges related to underdeveloped transport infrastructure, lack of government funding, weak marketing approaches to promote eco-tourism for both international and local investors, or absence of regulatory mechanisms that allow investors to enjoy preferential tax and duty benefits are some of the main factors that still inhibit the full potential of ecotourism at home [18].

Eco-tourism not only involves attracting visitors to enjoy tourism in nature reserve areas, but it is also designed to protect biodiversity and nature from degradation. Various state-funded projects and programs (e.g., *National Biodiversity Strategy 2015-2030; Concept of the Water Resources Management Program of the Republic of Kazakhstan for 2020-2030; The Strategy for Achieving Carbon Neutrality by 2060; Land Degradation Neutrality Targets by 2030*; etc.) are implemented on the one hand to comprehensively promote eco-tourism while at the same time to address specific environmental problems along the way. Hence, eco-tourism aims to shoot two birds with one shot.

To exemplify the use of subsidies and grants to promote nature conservation efforts under eco-tourism programs, we can look at projects involving Aksu-Zhabagly Nature Reserve. Government-funded financial support for this specific nature reserve area dates to 2004, when the first tourism and environmental education department was established with the support of the UNDP [19]. Over the years, state grants and subsidies were allocated to finance the development of touristic excursions, building of tourist routes, and preparing eco-tourist

guides for the future [19]. Over the years, the number of tourists and opening of hotel-restaurant businesses have been kept under control, as the support for nature conservation efforts do not mean that nature reserve areas become hotspots for uncontrolled recreational tourism [19]. To avoid mass tourism, eco-tourism must be well-regulated and established regulations must always be checked for full compliance. As of now, the Aksu-Zhabagly Nature Reserve is well-equipped with firefighting equipment, transportation facilities and camera traps to study wildlife and biodiversity changes [19]. Other financial subsidy support for nature conservation efforts also come directly from the 'Global Environment Facility' and the UNDP. For instance, these subsidy support measures involve aiding interdepartmental and intersectoral cooperation between NGOs and government authorities to address specific eco-tourism-related barriers as well as promoting public awareness about the importance of eco-tourism. Similar projects include the BIOFIN projects by the UNDP since mid-2010s in various nature reserve areas, programs addressing the promotion of public awareness issues about sustainable eco-tourism in the Almaty region by the Critical Ecosystem Partnership Fund, SWITCH-Asia grant programs funded by the European Union, or the so-called SPACES projects aimed to address biodiversity issues in nature areas.

Overall, numerous subsidy- and grant-based projects and programs exist nowadays to promote the development of nature conservation efforts in the country. Nevertheless, to properly develop eco-tourism and nature conservation efforts, it is also crucial to understand that challenges as habitat loss, the growth of urban areas, weakly developed touristic infrastructure, overgrazing, and underfinancing are some of the major problems that need a more comprehensive policy approach to address them.

Promotion of eco-friendly company investments (Item 5)

Fourth, let us talk about the use of market incentives to promote eco-friendly investment for companies that pollute the environment. One of these uses involves the promotion of stringent BAT standards and technological standards.

Over the last five years, huge waves of government-led programs and initiatives have been launched to tackle air pollution and climate change issues, whilst also making the public and industries more aware of them. For instance, while programs such as *Zhasyl Kazakhstan Program, Concept for Transition to Green Economy* or the annual commitments to Paris Agreement principles have helped with de-carbonization efforts and reduced greenhouse gas emissions, likewise, the stringent technological standards, audits, and BAT principles for polluting industries were also introduced. According to the NEC article 127, polluting industries are obliged within the next ten years to introduce BAT measures and follow the '*polluters-pay-principle',* where paying fines compensate for pollution emissions. The NEC also incorporated a new reference book on BAT applications for oil and gas processing, utilization, and disposal of waste, extraction of ferrous metal ores, production of cement, and lime.

All these new initiatives show that the government's political acceptability level has risen over the last several years, as they understood how ineffective previous regulatory measures were. The introduction of BAT principles should be extremely useful in curbing air pollution emission levels, as the government, along with the public, will be able to control carbon-intensive assets and increase the eco-awareness levels among polluting industries.

However, sometimes firms are discouraged from developing more effective technologies, as standards might be tightened even more. This phenomenon can be cited as an example of why

the enforcement mechanisms in Kazakhstan are not functioning as intended. Another question concerns how much 'change' firms really need to implement technological prescriptions, and if there are some mechanisms to monitor it.

Aside from that, one may also speculate whether technological prescriptions are effective among developing nations, as they require well-developed regulatory capacity to control, monitor and enforce stringent requirements, where with the latter Kazakhstan has huge problems. Taking all these aspects into consideration, the Kazakhstani government must ensure the full implementation of BAT principles and that legal enforcement mechanisms are properly carried out to improve the PI's effectiveness.

Municipal Waste Charge (Item 6)

The issue with waste is an ongoing problem not only anywhere in the world, but it is particularly a big concern in Kazakhstan. According to the latest official figures, municipal solid waste has already reached roughly 5 million tons annually based on the 2023 data, where only 21% of plastic alone is recycled [17]. Over the years, particularly within the last five years, public discussions concerning the use of waste removal fees as an approach to reduce waste accumulation in large cities have been raised. For instance, in 2024, the so-called *Kazakhstan Association of Waste Management, KazWaste,* has urged the government to implement laws to consider introducing collection fees for municipal waste by more than two to ten times [20]. Generally, ecology experts in Kazakhstan had differing views about the increase in fees. While Maria Zhevlakova, a sustainable development expert, argues that the main problem at hand right now is not to simply 'introduce' collection for the sake of reducing the amount of waste, but the real issue concerns the proper use of fees and its proportional distribution among individuals and businesses [20]. Should it either be used to reduce the amount of household waste, or should the fees be used to improve waste recycling plants?

Another expert and environmental blogger, Mikhail Belyakov, does not agree that an increase in fees will solve the problem of municipal solid waste in urban cities, especially if every citizen of a specific city pays the same fees [20]. Hence, a differential waste fee is suggested instead of a standard fee, which is especially important for not only average households, but also for business companies [20]. A differential fee would mean that if companies or people produce less waste, then they will pay less in comparison to those who produce more waste. According to him, there is an issue with implementing an effective tariff policy [20].

All in all, the discussions about an increase in the collection of fees for municipal solid waste can be discussed from different viewpoints. On the one hand, the government and society want to transition to a sustainable waste management system. To achieve this, the authorities might need to be bold and introduce unpopular policy practices of increasing the collection fees, which might be negatively felt in times when, recently, the government announced to increase by the first of February the energy costs for household utility bills, alongside a potential rise in value-added tax. Additionally, considering the economic crisis in the country with the society's low purchasing power parity, downward spiraling average income, and level of public distrust towards the government institutions, the increase in collection fees would also mean that it would directly impact both the pockets of citizens and businesses as well as the government's reputation. Therefore, leading to the questioning of government official's economic management competencies in handling the economy at home. Let us also not forget that the population of

Kazakhstan is continuously rising since the early 2000s, suggesting that a demographic rise would also mean that waste accumulation, along with waste fees, are likely to go up as well. Nevertheless, our research results point out that the PI is extremely effective and socially-well supported to raise the level of eco-awareness and battle municipal solid waste accumulation.

Conclusion

In conclusion, our research results have provided the following key findings. First, based on the online interviews that were conducted with 30 Kazakhstani ecology experts, a total of six MB environmental awareness-related PIs were constructed. These included the following six: (1) use of environmental taxes to offset environmental damages and pollution emissions; (2) provision of green crediting and green financing mechanisms for eco-awareness-raising and other green economy-related programs; (3) installation of deposit-refund schemes for recyclable products; (4) provision of public state funds, subsidies, loans and grants aimed at strengthening nature conservation, eco-tourism and sustainable development policy efforts; (5) introduction of tax cuts and other relief measures for companies and industries; and (6) application of a waste charge mechanism.

Second, based on the nine assessment indicators (namely legitimacy, transparency, equity, effectiveness, political acceptability, administrative feasibility, positive social impact, enforcement, and adaptability), among all nine assessment indicators the highest average scores received the indicators LE and PSI followed by EF and AF, while the lowest average scores received the indicators TR and PA. While most six PIs had middle-level scores in all nine assessment indicators, item 6 showed high-level scores in LE, EF, and PSI. Similarly, item 4 showed high-level scores in LE, and items 3 and 5 in indicators PSI.

In the context of Kazakhstan, all six PIs are being used. While some are used more often and are better financed, others as the deposit-refund scheme mechanisms, are underfinanced, weakly regulated, and not well-enforced. As an example, the use of environmental taxes and carbon taxes are one of the policy tools used in the country to reduce both the carbon footprint while at the same time to diversify the economy towards green economy policy efforts. Moreover, considering the introduction of the NEC in 2021 with its new regulatory novelties, such as the adoption of the polluters-pay-principle and promotion of more strict and comprehensive eco-permit requirements as well as BAT mechanisms, the importance of environmental taxes will also grow in the future.

Unlike environmental taxes, the policy tools used to support green finance policy mechanisms have just recently, within the last twelve years gained their momentum as a government-led environmental policy. One of the main goals of the green finance mechanisms is to smoothly transition the economy towards an eco-friendly modified system that would gradually push the country not only out of the fossil fuel dependence dilemma, but also ensure a more sustainable business climate that would follow a sustainable development path. With the support for green finance mechanisms, the government has adopted and will continue adopting numerous environmental policy reform programs, as *Strategic Plan for Renewable Energy of 2009* or strengthening the Paris Agreement as well as its carbon neutrality commitments by 2060 in tandem to strengthen green growth policy efforts. Nevertheless, challenges with underdeveloped cross-sectoral coordination and weakly regulated legal frameworks green finance mechanisms

still need to address legal compliance issues. Alongside low policy effectiveness and political acceptability, green finance measures still need time to use their full potential.

Next, speaking of deposit-refund schemes, here, this PI can be considered the most underdeveloped among the six MB policy tools. Issues related to low public awareness about the policy tool, weak state-led financial support, and lack of scientific studies inhibit the growth of deposit-refund programs across the country. Nevertheless, the active involvement of eco-organizations (e.g., *Recycle Birge or West Dala)* and eco-activists as *Pakizat Saylaubekova* and *Shassalim Shagalimov,* have revived the importance of the recycling and waste management policy efforts. Programs as *EcoQoldau* and those financed by the *SWITCH-Asia* Programme are some of the examples that keep the policy tool alive.

Unlike deposit-refund schemes, support for nature conservation efforts and eco-tourism development via subsidies, grants, and loans has seen a major growth since the early 2000s. This was particularly evident with the nature conservation efforts allocated fir national nature parks and nature reserves. Additionally, the active involvement of environmental NGOs, eco-companies, and state-led eco-organizations as UNDP, OSCE, or EIRC, have helped to safeguard nature from degradation processes as well as ensure that eco-tourism flourishes with the involvement of local citizens. For instance, programs as the *BIOFIN or SPACES* projects are some of the examples. Besides environmental NGOs and eco-companies, legislative support from the government via the adoption of various regulations (e.g., *National Biodiversity Strategy 2015-2030; Concept of the Water Resources Management Program of the Republic of Kazakhstan for 2020-2030; or The Strategy for Achieving Carbon Neutrality by 2060; Land Degradation Neutrality Targets by 2030)* allowed to approach nature conservation policies from various policy angles. However, issues related to a lack of government funding, underdeveloped eco-tourism infrastructure, as well as roads, and ineffective marketing approaches to attract investors are still ongoing challenges that need to be dealt with.

Next, speaking of the implementation of BAT measures for polluting industries, these specific policy tools have the objective of reducing the emission of greenhouse gases, but with the promotion of eco-friendly investments into technological standards. Unlike environmental taxes, this policy tool does not impose any taxes, but in fact provides financial incentives for following BAT standards and introducing green investments. While this approach is used worldwide as an effective policy tool to control emission standards, it does have its own bottlenecks, particularly related to how well this tool is enforced in practice and to what extent laws discourage or encourage developing more eco-friendly but effective technological standards for industries, firms, and companies.

Lastly, the use of the municipal waste charge is also another tool that is worth discussing. With the rising amount of municipal waste accompanied by a rise in the number of people in Kazakhstan, the issue of waste management is becoming a hotly debated public issues among citizens and policymakers. One of the main issues of introducing municipal waste charge concerns the proportional redistribution of fees among individuals and businesses. Public discussions about differential fees are possible solutions to this problem. The second issue concerns the purpose of increasing waste fees, where local ecology experts as *Maria Zhevlakova* or *Mikhail Belyakov,* have raised questions whether the fees will effectively reduce the amount of household waste or whether they should be used to finance recycling facilities. Despite these two main challenges, our research results have revealed that this PI is considered by our ecology experts as highly effective in raising the level of awareness of people about waste problems at home.

In summary, the results of this study revealed that some MB PIs in Kazakhstan are well-developed while others are still in their infancy stages, especially when speaking of deposit-refund schemes. As no research has ever tried to directly assess specific environmental policy tools by using nine assessment indicators, this paper is the first one of its kind to address this research gap. Policy makers can replicate it to other environmental policy contexts that would eventually help them to better understand the policy dynamics related to climate change, water management or air pollution problems.

Research Limitations & Recommendations

Speaking of research limitations, this paper entails two main limitations. First, the MB PIs are not exhaustive, meaning that they can be updated and extended. For instance, some PIs, such as cap-and-trade mechanisms, are omitted in the discussion section. Therefore, for future research purposes, the MB PI taxonomy list needs to be rewritten and reupdated with new MB policy tools.

As a second research limitation, this study used only in the assessment of PI indicators a total of 30 ecology experts from Kazakhstan, whereby a convenience sampling approach was applied. Here, the use of the convenience sampling method creates possible risk of researcher bias. Second, since ecology experts only represented experts from Kazakhstan, this study did not include foreign expertise. With that said, future researchers must take into consideration to include foreign experts in the interview process to have a balanced sample population of respondents.

Lastly, as a third research limitation, it is crucial to share the issue with respondents not fully understand specific social concepts, such as what is meant by transparency, legitimacy, or enforcement. Some interview respondents mentioned that it was difficult to give a clear assessment score, as unfamiliarity with specific PIs were noted. Therefore, specific social concepts might be understood differently in different contextual settings.

Authors' contribution.

Kumar Y.A. – substantive contribution to the design of the work; collecting, analyzing, or interpreting the results of the work; writing the text and/or critically revising its content; writing the sections on research methodology, findings, and discussion.

Utarbayeva Zh.B. – supporting the literature review section; writing the introduction section; approving the final version of the article for publication.

White K.D. – Polished and helped to finalize the conclusion section; supervised the research limitation and recommendation section.

Acknowledgements

The work was prepared at our own expenses. No financial support was received in writing or production of the research article. The authors acknowledge the valuable comments and suggestions from anonymous reviewers and the editor.

In Memoriam

Prof. Kristopher White has sadly passed away this year, several days after the submission of this paper. Having co-authored this paper and immensely supported in revising the research discussion section, we honor his earnest commitment for contributing immensely to this

paper. He was considered at KIMEP University an extremely valuable researcher and professor, particularly known for publishing countless research papers studying in-depth environmental problems in Kazakhstan.

References:

1. Howie, P., Gupta, S., Park, H., & Akmetov, D. Evaluating policy success of emissions trading schemes in emerging economies: comparing the experiences of Korea and Kazakhstan. // Climate Policy. – 2020. – No. 2. – Vol. 5. – P. 577-592.

2. Markhayeva, B., Ibrayev, A. S., Beisenova, M., Serikbayeva, G., & Arrieta-López, M. Green Banking Tools for the Implementation of a State's Environmental Policy: Comparative Study. // Journal of Environmental Management & Tourism. – 2023. – No. 14. – Vol. 1. – P. 160-167.

3. Bokayev, Z., Kaishatayeva, A., Dzhulamanov, T., Aisin, M., & Maukenova, A. Development of marketing tools to raise funds for green projects. Experience of the Republic of Kazakhstan. // Journal of Environmental Management & Tourism. – 2023. – No. 14. – Vol. 3. – P. 689-697.

4. Kurmanalina, A., Turmakhanbetova, G., Iskakova, Z., Mukushev, A., Khamitkhan, N., & Ichshanova, R. Maintaining Environmental Sustainability through Public Financing. Insights from Kazakhstan. // Journal of Environmental Management & Tourism. – 2023. – No. 14. – Vol. 1. – P. 207-216.

5. Daniya, G., & Tang, D. Green finance and industrial low-carbon transition: A case study on green economy policy in Kazakhstan. // Sustainability. – 2024. – No. 16. – Vol. 17. – P. 1-23.

6. Ospanova, S. Assessing Kazakhstan's policy and institutional framework for a green economy. // International Institute for Environment and Development. – 2014. – P. 1-33.

7. UNEP Organization. Approach to Assessment of Policy Effectiveness – Global Environment Outlook (GEO-6): Healthy Planet, Healthy People Chapter 10, 2019. – [Электронный ресурс] - URL: https://wedocs.unep.org/handle/20.500.11822/27663;jsessionid=AEBD5853AE98522E719160EAEF789424 (Дата обращения: 02.06.2025).

8. Mickwitz, P. Environmental Policy Evaluation: Concepts and Practice? – [Электронный ресурс] - URL: https://core.ac.uk/download/pdf/250110612.pdf (Дата обращения: 02.06.2025).

9. International Trade Administration. Kazakhstan – Country Commercial Guide. – [Электронный ресурс] – URL: https://www.trade.gov/country-commercial-guides/kazakhstan-environmental-technologies#:~:text=The%20country%20has%20created%20a,polluter%20pays%20and%20corrects%E2%80%9D%20principle (Дата обращения: 02.06.2025).

10. Bureau of National Statistics of the Republic of Kazakhstan. Environmental Taxation. – [Электронный ресурс] – URL: https://stat.gov.kz/api/iblock/element/38059/file/en/ (Дата обращения: 02.06.2025).

11. Issayeva, G., Ihnatov, I., Zhussipova, E., & Pazilov, G. Environmental tax mechanism in Kazakhstan: Theoretical approach. // Journal of Economic Research & Business Administration. – 2024. – No. 149. – Vol. 3. – P. 73-86.

12. Yesbergen, R., Maukenova, A., Gumar, N., Shalbaeva, S., & Kalieva, G. Path to Green Economy: Analyzing Innovation, Investment and Taxation in Kazakhstan. // Eurasian Journal of Economic and Business Studies. – 2024. – No. 68. – Vol. 3. – P. 36-50.

13. Litvishko, V., Akhmetova, A., Kodasheva, G., Zhussupova, A., Malikova, R., & Kuralova, A. Formation of ecological education of the population. // E3S Web of Conferences. – 2020. – No. 159. – P. 1–9.

14. Kairatkyzy, A., Khoich, A., & Demiral, M. Green finance in Kazakhstan's context: Market Overview. // Scientific Journal Turan University. – 2023. – No. 1. – Vol. 97. – P. 157–171.

15. Astana International Financial Centre. Concept on introduction and development of green finance instrument and principle. – [Электронный ресурс] - URL: https://gfc.aifc.kz/uploads/Concept%20on%20introduction%20and%20development%20of%20green%20finance%20instruments%20and%20principles.pdf (Дата обращения: 02.06.2025).

16. UNDP Kazakhstan. Fight Plastic! – [Электронный ресурс] - URL: https://www.undp.org/kazakhstan/stories/fight-plastic (Дата обращения: 02.06.2025)

17. World Cleanup Day. Best Practices – Kazakhstan. – [Электронный ресурс] – URL: https://www.worldcleanupday.org/post/best-practices-kazakhstan (Дата обращения: 02.06.2025).

18. Kumar, Y., & Sheryazdanova, K. Ecotourism study in Kazakhstan: The Past, Present and the Future. // Eurasian Journal of Ecology. – 2021. – No. 67. – Vol. 2. – P. 4-20.

19. UNDP Kazakhstan. Boosting tourism in Kazakhstan's oldest Nature Reserve. – [Электронный ресурс] – URL: https://www.undp.org/kazakhstan/stories/boosting-tourism-kazakhstans-oldest-nature-reserve (Дата обращения: 02.06.2025).

20. Central Asian Bureau for Analytical Reporting. Will Rise in Waste Removal Fee Improve Municipal Solid Waste Recycling in Kazakhstan. – [Электронный ресурс] - URL: https://cabar.asia/en/will-rise-in-waste-removal-fee-improve-municipal-solid-waste-recycling-in-kazakhstan (Дата обращения: 02.06.2025).

Е.А. Кумар*[1], Ж.Б. Утарбаева[2], K.D. White[3]

[1]Евразийский национальный университет им Л.Н. Гумилева, Астана, Казахстан

[2,3]КИМЭП Университет, Алматы, Казахстан

Исследование рыночных и экономических инструментов политики в Казахстане: пример политики экологической сознательности

Аннотация. Инструменты рыночной и экономической политики широко используются во всем мире для решения не только социально-экономических, но и различных экологических проблем. В Казахстане применение мер рыночной и экономической политики становится все более популярным среди политиков.

Целью исследования является создание первой таксономии рыночно-экономически обоснованной политики повышения экологической осведомленности, состоящей из шести пунктов. Каждая из них была оценена по девяти социально-экономическим и политическим показателям, а именно: эффективности, прозрачности, легитимности, политической приемлемости, административной осуществимости, правоприменению, справедливости, адаптивности и позитивному социальному воздействию. Для этого сначала посредством тщательного анализа литературы были выявлены и обобщены в Google Scholar в общей сложности шестнадцать академических источников, посвященных инструментам рыночно-экономически обоснованной политики повышения экологической осведомленности. Затем были проведены онлайн-интервью с 30 казахстанскими экспертами в области экологии для индивидуальной оценки каждого из шести инструментов.

На основании результатов оценки все шесть рыночных и экономических инструментов показали средние баллы по всем шести показателям. В то время как инструмент механизма платежей за отходы продемонстрировал высокие баллы по показателям легитимности, положительного социального воздействия и правоприменения, схема возврата залога и меры по смягчению последствий снижения налогов получили высокие баллы по показателю

положительного социального воздействия. В целом финансовая поддержка усилий по охране природы и экотуризму получила самый высокий средний балл, за ней следуют механизмы платежей за отходы и меры по смягчению последствий снижения налогов. Эти первичные данные имеют большое значение для лиц, определяющих политику в области охраны окружающей среды, поскольку позволяют им лучше понять недостатки и преимущества каждого инструмента рыночной политики. Однако ограничения исследований, такие, как предвзятость исследователей и неполнота рыночной таксономии, требующая некоторой доработки, все еще должны быть учтены в будущем исследовательском анализе.

Ключевые слова: Казахстан, рыночные и экономические инструменты политики, экологический аспект.

Е.А. Кумар*[1], Ж.Б. Утарбаева[2], K.D. White[3]
[1]Л.Н. Гумилев атындағы Еуразия ұлттық университеті, Астана, Қазақстан
[2,3]КИМЭП Университет, Алматы, Қазақстан

Қазақстандағы нарықтық және экономикалық саясат құралдарын зерттеу: экологиялық сана саясатының жағдайы

Аңдатпа. Дүние жүзінде әлеуметтік-экономикалық мәселелерді ғана емес, сонымен қатар әртүрлі экологиялық мәселелерді шешу үшін нарықтық және экономикалық саясат құралдары кеңінен қолданылады. Қазақстанда нарықтық және экономикалық саясат шараларын қолдану саясаткерлер арасында танымал бола бастады.

Зерттеу алғашқы алты тармақтан тұратын нарықтық және экономикалық негізделген эко-хабарландыру саясаты таксономиясын құруға бағытталған, содан кейін олар тоғыз әлеуметтік-экономикалық және саяси бағалау индикаторлары, атап айтқанда тиімділік, ашықтық, заңдылық, саяси қолайлылық, әкімшілік орындылық, орындаушылық, теңдік, бейімделушілік және оң әлеуметтік әсер негізінде бағаланды. Ол үшін алдымен мұқият әдебиетті шолу арқылы Google Scholar бағдарламасында нарықтық және экономикалық негізделген эко-саналандыру саясатының құралдарын қамтитын барлығы он алты академиялық дереккөз анықталды және синтезделді. Содан кейін алты тармақтың әрқайсысын бір-бірден бағалау үшін 30 қазақстандық экология сарапшыларымен онлайн сұхбат жүргізілді.

Бағалау нәтижелері бойынша барлық алты нарықтық және экономикалық құрал барлық алты индикатор бойынша орташа деңгейдегі ұпайларды көрсетті. Қалдықтарды өтеу механизмі заңдылық, оң әлеуметтік әсер және орындау көрсеткіштері бойынша жоғары ұпайларды көрсетсе, депозиттерді қайтару схемасы және салықты азайту шаралары оң әлеуметтік әсер көрсеткіші бойынша жоғары балл алды. Тұтастай алғанда, табиғатты қорғау және экотуризм күш-жігерін қаржылық қолдау ең жоғары орташа балл алды, одан кейін қалдықтарды жинау механизмдері мен салықты азайту шаралары келді. Бұл бастапқы деректер нәтижелері қоршаған ортаны қорғау саласындағы саясаткерлер үшін де нарықтық саясат құралының кемшіліктері мен артықшылықтарын жақсырақ түсінуге мүмкіндік беру арқылы жоғары мәнге ие. Дегенмен, зерттеушінің көзқарасы және нарыққа негізделген таксономия сияқты зерттеулердің шектеулері әлі де болашақ зерттеулерді талдауда қарастырылуы керек.

Түйін сөздер: Қазақстан, нарықтық және экономикалық негіздегі саясат құралдары, экологиялық аспект.

References

1. Howie, P., Gupta, S., Park, H., & Akmetov, D. Evaluating policy success of emissions trading schemes in emerging economies: comparing the experiences of Korea and Kazakhstan. Climate Policy. 2(5), 577-592(2020).

2. Markhayeva, B., Ibrayev, A. S., Beisenova, M., Serikbayeva, G., & Arrieta-López, M. Green Banking Tools for the Implementation of a State's Environmental Policy: Comparative Study. Journal of Environmental Management & Tourism. 14(1), 160-167(2023).

3. Bokayev, Z., Kaishatayeva, A., Dzhulamanov, T., Aisin, M., & Maukenova, A. Development of marketing tools to raise funds for green projects. Experience of the Republic of Kazakhstan. Journal of Environmental Management & Tourism. 14(3), 689-697(2023).

4. Kurmanalina, A., Turmakhanbetova, G., Iskakova, Z., Mukushev, A., Khamitkhan, N., & Ichshanova, R. Maintaining Environmental Sustainability through Public Financing. Insights from Kazakhstan. Journal of Environmental Management & Tourism. 14(1), 207-216(2023).

5. Daniya, G., & Tang, D. Green finance and industrial low-carbon transition: A case study on green economy policy in Kazakhstan. Sustainability. 16(17), 1-23(2024).

6. Ospanova, S. Assessing Kazakhstan's policy and institutional framework for a green economy. International Institute for Environment and Development. 1-33(2014).

7. UNEP Organization. Approach to Assessment of Policy Effectiveness – Global Environment Outlook (GEO-6): Healthy Planet, Healthy People Chapter 10, 2019. – [Electronic Resource] – Available at: https://wedocs.unep.org/handle/20.500.11822/27663;jsessionid=AEBD5853AE98522E719160EAEF789424 (Accessed: 02.06.2025) (In English)

8. Mickwitz, P. Environmental Policy Evaluation: Concepts and Practice? – [Electronic Resource]. – Available at: https://core.ac.uk/download/pdf/250110612.pdf (Accessed: 02.06.2025) (In English)

9. International Trade Administration. Kazakhstan – Country Commercial Guide. – [Electronic Resource] – Available at: https://www.trade.gov/country-commercial-guides/kazakhstan-environmental-technologies#:~:text=The%20country%20has%20created%20a,polluter%20pays%20and%20corrects%E2%80%9D%20principle (Accessed: 02.06.2025) (In English)

10. Bureau of National Statistics of the Republic of Kazakhstan. Environmental Taxation. – [Elektronnyi resurs] – Available at: https://stat.gov.kz/api/iblock/element/38059/file/en/ (Accessed: 02.06.2025) (In Russian)

11. Issayeva, G., Ihnatov, I., Zhussipova, E., & Pazilov, G. Environmental tax mechanism in Kazakhstan: Theoretical approach. Journal of Economic Research & Business Administration. 149(3), 73-86(2024).

12. Yesbergen, R., Maukenova, A., Gumar, N., Shalbaeva, S., & Kalieva, G. Path to Green Economy: Analyzing Innovation, Investment and Taxation in Kazakhstan. Eurasian Journal of Economic and Business Studies. 68(3), 36-50(2024).

13. Litvishko, V., Akhmetova, A., Kodasheva, G., Zhussupova, A., Malikova, R., & Kuralova, A. Formation of ecological education of the population. E3S Web of Conferences. 159, 1–9(2020).

14. Kairatkyzy, A., Khoich, A., & Demiral, M. Green finance in Kazakhstan's context: Market Overview. Scientific Journal Turan University. 1(97), 157–171(2023).

15. Astana International Financial Centre. Concept on introduction and development of green finance instrument and principle. – [Electronic Resource] – Available at: https://gfc.aifc.kz/uploads/Concept%20on%20introduction%20and%20development%20of%20green%20finance%20instruments%20and%20principles.pdf (Accessed: 02.06.2025)

16. UNDP Kazakhstan. Fight Plastic! – [Electronic Resource] – Available at: https://www.undp.org/kazakhstan/stories/fight-plastic (Accessed: 02.06.2025) (In English)

17. World Cleanup Day. Best Practices – Kazakhstan. – [Electronic Resource] – Available at: https://www.worldcleanupday.org/post/best-practices-kazakhstan (Accessed: 02.06.2025)

18. Kumar, Y., & Sheryazdanova, K. Ecotourism study in Kazakhstan: The Past, Present and the Future. Eurasian Journal of Ecology. 67(2), 4-20(2021).

19. UNDP Kazakhstan. Boosting tourism in Kazakhstan's oldest Nature Reserve. – [Electronic Resource] – Available at: https://www.undp.org/kazakhstan/stories/boosting-tourism-kazakhstans-oldest-nature-reserve (Accessed: 02.06.2025)

20. Central Asian Bureau for Analytical Reporting. Will Rise in Waste Removal Fee Improve Municipal Solid Waste Recycling in Kazakhstan. – [Electronic Resource] – Available at: https://cabar.asia/en/will-rise-in-waste-removal-fee-improve-municipal-solid-waste-recycling-in-kazakhstan (Accessed: 02.06.2025)

Information about authors:

***Kumar Y.A.* –** corresponding author, PhD Candidate in Public & Municipal Administration, KIMEP University, Political Science Teacher, Eurasian National University, Satpayev St. 2, 010008, Astana, Kazakhstan.

Utarbayeva Zh.B. – Internship Coordinator and Adjunct Principal Lecturer, KIMEP University, PhD Degree in Political Science from Al-Farabi Kazakh National University, Abay Av. 2, 050010, Almaty, Kazakhstan.

***White K.D.* –** PhD Degree in Geography, University of Connecticut, Associate Professor, Department of Public Administration, KIMEP University, Abay Av. 2, 050010, Almaty, Kazakhstan.

***Кумар Е.А.* –** кандидат наук в области государственного и муниципального управления, Университет КИМЭП, преподаватель политологии, Евразийский национальный университета, ул. Сатпаева, 2, 010008, Астана, Казахстан.

***Утарбаева Ж.Б.* –** координатор стажировки и адъюнкт-главный преподаватель, Университет КИМЭП, доктор политических наук, Казахский национальный университет имени аль-Фараби, пр. Абая, 2, 050010, Алматы, Казахстан.

***White K.D.* –** доктор географических наук, Университет Коннектикут, доцент кафедры государственного управления, Университет КИМЭП, пр. Абая, 2, 050010, Алматы, Казахстан.

***Кумар Е.А.* –** КИМЭП университетінің мемлекеттік және муниципалдық басқару саласындағы ғылым кандидаты, Л.Н.Гумилев атындағы Еуразия ұлттық университетінің саясаттану оқытушысы, Сәтбаева көшесі, 2, 010008, Астана, Қазақстан.

***Утарбаева Ж.Б.* –** КИМЭП Университетінің тағылымдама үйлестірушісі және адъюнкт-бас оқытушысы, әл-Фараби атындағы Қазақ ұлттық университеті, саясаттану ғылымдарының докторы дәрежесі, Абай даңғылы 2, 050010, Алматы, Қазақстан.

***White K.D.* –** Коннектикут университетінің география ғылымдарының докторы, КИМЭП Университетінің Мемлекеттік басқару кафедрасының доценті, Абай даңғылы 2, 050010, Алматы, Қазақстан.