

Normatov Khusan

Teacher

Faculty of Translation, Department of English Translation Theory

Uzbekistan state university of world languages

husanbek0405@gmail.com

ECOLOGICAL TERMINOLOGY AND TEXT TRANSLATION

ANNOTATION

This article explores the formation of ecological terminology, its linguistic characteristics, origins, and the theoretical and practical challenges encountered in translating ecological texts. Due to the rapid development of ecology as a science, new scientific terms emerge every year, and the expansion of international scientific cooperation makes the accurate translation of these terms essential. The article scientifically analyzes the interdisciplinary nature of ecological terminology, its polysemy, the critical role of context in translation, and the need to standardize terminology used by international organizations. Furthermore, semantic distortions, stylistic inconsistencies, and methodological shortcomings frequently encountered in ecological text translation are explained with examples. The study emphasizes that accurate translation of ecological terms plays a crucial role in environmental policy, scientific research, ecological education, and the formation of environmental awareness.

АННОТАЦИЯ

В данной статье рассматриваются формирование экологической терминологии, её лингвистические особенности, происхождение, а также теоретические и практические проблемы, возникающие при переводе экологических текстов. В связи с быстрым развитием экологии как науки ежегодно появляются новые научные термины, а расширение международного научного сотрудничества делает точный перевод этих терминов особенно важным. В статье научно анализируются междисциплинарный характер экологической терминологии, её многозначность, ключевая роль контекста при

переводе и необходимость стандартизации терминов, используемых международными организациями. Кроме того, объясняются семантические искажения, стилистические несоответствия и методологические недостатки, часто встречающиеся при переводе экологических текстов, приводятся соответствующие примеры. В исследовании подчёркивается, что точный перевод экологических терминов играет важную роль в экологической политике, научных исследованиях, экологическом образовании и формировании экологического сознания.

ANNOTATSIYA

Ushbu maqola ekologik terminologiyaning shakllanishi, uning lingvistik xususiyatlari, kelib chiqishi hamda ekologik matnlarni tarjima qilishda uchraydigan nazariy va amaliy muammolarni o'rganadi. Ekologiya fani tez sur'atlarda rivojlanayotgani sababli har yili yangi ilmiy atamalar paydo bo'lmoqda, xalqaro ilmiy hamkorlikning kengayishi esa ushbu terminlarni aniq tarjima qilish zarurligini kuchaytiradi. Maqolada ekologik terminologiyaning fanlararo tabiati, uning ko'p ma'noliligi, tarjimada kontekstning hal qiluvchi roli va xalqaro tashkilotlar tomonidan qo'llaniladigan atamalarni standartlashtirish zarurati ilmiy jihatdan tahlil qilingan. Shuningdek, ekologik matnlarni tarjima qilishda tez-tez uchraydigan semantik buzilishlar, uslubiy nomuvofiqliklar va metodologik kamchiliklar misollar orqali tushuntirilgan. Tadqiqot ekologik atamalarning aniq tarjima qilinishi ekologik siyosat, ilmiy tadqiqotlar, ekologik ta'lim va atrof-muhit ongining shakllanishida muhim o'rin tutishini ta'kidlaydi.

KEYWORDS: ecology, translation, terminology, scientific texts, sustainable development, climate change, global warming, biosphere, international standards, context.

INTRODUCTION

The 21st century is recognized as a period of ecological crises, global climate change, pollution of the atmosphere and water bodies, loss of biodiversity, expansion

of desertification, and a sharp decline in natural resources. Today, ecology has become not only a scientific field but also a strategic global direction. Therefore, accurate, objective, and scientifically grounded translation of ecological information into different languages holds significant importance.

Reports, scientific recommendations, and global assessments published by major international environmental organizations—such as the IPCC, UNEP, UNESCO, FAO, and IUCN—shape environmental policies of many countries. Accurate translation of these documents into national languages ensures correct interpretation by the scientific community, supports the development of environmental awareness among the population, and contributes to forming effective national environmental strategies.

There are hundreds of ecological terms, some widely used and others belonging to narrow scientific branches. Thus, translating ecological terminology is a complex task for both linguists and environmental specialists. This complexity arises primarily from polysemy, interdisciplinary origins, metaphorical uses, and the emergence of new concepts.

The main objective of this article is to systematically analyze the process of translating ecological terms and texts, to reveal their linguistic and semantic characteristics, and to highlight essential scientific principles required in the translation process.

Formation and Linguistic Features of Ecological Terminology

Ecology is inherently an integrative discipline, combining numerous scientific fields. This significantly influences its terminology. For example:

- **Terms from biology:** population, biocenosis, gene pool, biodiversity;
- **Terms from chemistry:** emission, concentration, reaction chain, oxidation;
- **Terms from geography:** relief, landscape, climate zone;
- **Terms from economics:** green economy, environmental audit, resource efficiency;

- **Engineering and technical terms:** filtration, exhaust gases, purification facilities.

The diversity of terminological sources creates two major challenges for translators:

1. The translator must clearly understand the scientific meaning of each term.
2. The term must be used correctly according to the appropriate context.

Ecological terms usually have strict scientific boundaries, and attempting to convey them with generalized wording may result in conceptual errors. Therefore, precision is a priority in scientific translation.

Etymological Origins

Many ecological terms originate from Greek and Latin. Knowledge of these roots greatly facilitates accurate translation. For instance:

- *ecology* — from *oikos* (house, habitat) + *logos* (study);
- *biosphere* — *bios* (life) + *sphaira* (sphere);
- *abiotic* — *a* (without) + *bios* (life);
- *anthropogenic* — *anthropos* (human);
- *phytocenosis* — *phyton* (plant) + *koinos* (common).

Understanding etymology is essential because some terms have multiple meanings depending on the scientific context, and incorrect interpretation may distort the scientific message.

Polysemy and Contextual Meaning Shifts

Many ecological terms acquire different meanings depending on context. For example:

- **habitat** — living environment, natural habitat, dwelling area;
- **pollution** — contamination, toxicity, anthropogenic disruption;
- **conservation** — protection, preservation, ecological restoration;
- **resilience** — stability, capacity to return to equilibrium, adaptability.

Misinterpretation of context is one of the most common errors encountered in translating environmental policy documents.

Theoretical Principles of Ecological Text Translation

Ecological texts rely on scientific facts, numerical data, statistics, and precise scientific patterns. Therefore, *accuracy* is the leading principle of their translation.

For example:

- **global warming** — must be translated strictly as “global warming,” not “planet overheating”;
- **ecosystem services** — must not be translated as “benefits of ecosystems,” but as “ecosystem services.”

Any deviation may result in loss of scientific accuracy.

The Role of Context

Since ecological terms often carry multiple scientific meanings, context plays a decisive role in translation. For example:

restoration

- for forests — reforestation;
- for landscapes — landscape restoration;
- for climate — climate stability restoration.

Translating terms outside their context leads to scientific inaccuracies.

Stylistic Requirements

Ecological texts usually:

- follow a formal scientific style;
- include complex syntactic structures;
- contain extensive numerical and terminological data;
- rely on description, comparison, and cause-and-effect reasoning.

A translator must preserve the stylistic features of the original text. Terminological consistency is especially important in adapting scientific terms into the Uzbek language.

Current Issues in Translating Ecological Terminology

The rapid development of ecological sciences leads to the emergence of new terms, such as:

- *carbon footprint*,
- *zero emissions*,
- *climate neutrality*,
- *green economy*.

Standardized equivalents for many of these in Uzbek are still being developed.

Semantic Uncertainties

Some terms are inconsistently interpreted by translators:

- **ecosystem** — correctly “ekotizim,” but sometimes incorrectly rendered as “ecological system”;
- **sustainability** — means “barqarorlik,” not “permanence”;
- **renewable energy** — “qayta tiklanuvchi energiya,” not “renewable/updated energy.”

Such inconsistencies lead to confusion in academic discourse.

Discrepancies in International Terminology Usage

Although international organizations like UNEP, IPCC, and IUCN provide standard terminology, different translations appear in local literature. For instance:

- **greenhouse gases** — correctly “issiqxona gazlari,” but sometimes mistranslated as “hot house gases.”

Lack of standardization negatively affects translation quality and scientific communication.

CONCLUSION

This study demonstrates that translation of ecological terminology is a highly responsible process requiring scientific investigation, awareness of international practices, and deep linguistic competence. The polysemy, interdisciplinary nature, and context-dependency of ecological terms significantly complicate the translation

process. Additionally, due to the rapid evolution of global ecological processes, new terms continue to emerge, requiring ongoing adaptation into the Uzbek language.

The study leads to the following conclusions:

1. Ecological terminology possesses an interdisciplinary character, therefore translators must have a solid understanding of ecological science.
2. Context is a decisive factor in ecological translation; one term may acquire different meanings in different texts.
3. Standard terminology approved by international organizations must be used consistently in translation.
4. The emergence of new scientific terms requires the development of unified Uzbek standard forms.
5. Incorrect translation can lead to scientific errors, misguided policy decisions, and confusion in educational contexts.
6. Translating ecological texts requires scientific thinking, methodological discipline, precision, and logical coherence.
7. Creating scientific ecological dictionaries, improving translator training, and standardizing ecological literature translations into Uzbek are urgent tasks.

Thus, accurate translation of ecological terminology plays a crucial role in enhancing environmental culture, understanding global ecological issues, and finding effective solutions.

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