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Benefit Sharing in the Arctic

Extractive Industries and Arctic People

Edited by
Maria Tysiachniouk, Andrey N. Petrov and Violetta Gassiy

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About the Special Issue Editors

Maria Tysiachniouk is a researcher and associate professor. She holds a Master of Science in Environmental Studies from Bard College, NY; a PhD in Biology from the Russian Academy of Sciences; and a PhD in Sociology from Wageningen University (2012). She has taught at Herzen Pedagogical University in St. Petersburg, St. Petersburg State University, Johns Hopkins University, Dickinson College, PA, Ramapo College of New Jersey, Towson University, Wageningen University, University of Lapland, University of Eastern Finland, and Erfurt University. She has studied issues of global governance since 2004. In 2012, she started to conduct extensive research on transnational oil production chains in the Arctic and sub-Arctic. Dr Tysiachniouk has written more than two hundred and seventy publications on topics related to transnational environmental governance. She has edited several books and has fieldwork experience in several countries and regions. She is currently chair of the Environmental Sociology group at the Center for Independent Social Research, St. Petersburg, Russia, and is a researcher at the Nelson Institute for Environmental Studies of the University of Wisconsin-Madison.

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Preface to ”Benefit Sharing in the Arctic”

Benefit sharing has become an increasingly central concept for investigating the relationships between extractive industries and society. A large variety of stake, rights and knowledge holders in communities affected by resource extraction depend on the fair, equitable and just distribution of benefits from this activity. Benefit sharing is closely related to other important concepts, such as corporate social responsibility, social license to operate, and free, prior and informed consent. In some ways, benefit sharing may have the broadest coverage of issues among them, yet it is most specifically focused on the processes and outcomes of implementing these principles in practice. Moreover, well-designed benefit sharing arrangements appear to be a potential tool for sustainable development, a link that needs further understanding. With a strong legacy and the rapid growth of the extractive industry in the Arctic, as well as the complicated engagement of extractive firms with local and Indigenous communities, the Arctic represents both a fascinating, globally important ‘case study’ region and a data-rich place for synthesis, and a theorization of contemporary research findings.

The papers presented in this book highlight and classify benefit sharing regimes, modes and mechanisms across the Arctic. The reader will see how benefit sharing arrangements are strikingly different among Arctic regions. Applications of global conventions, national legislation, rules in use, corporate policies and practices, as well as local/Indigenous capacities to assert their rights, vary across and within Arctic countries. Amid this diversity, we build our theoretical and empirical insights. This volume originated as a Special Issue on benefit sharing in the Arctic, launched as part of the Research Coordination Network Arctic-FROST (Arctic Frontiers of Sustainability). The Arctic-FROST-led workshop held in 2018 in Moscow, Russia started the process, and the collaboration has continued and expanded ever since.

The goal of the eleven papers selected for this volume is to capture a comprehensive understanding from case studies conducted in a variety of Arctic regions related to benefit sharing, CSR, SLO and other interactions between extractive industries and Arctic communities. Despite diversity and complexity, we aimed to find systematic commonalities and differences, identify best practices and fill most critical knowledge gaps. As a result, the volume will be of interest to policy, legal and impact assessment experts, community organizations, extractive companies operating in the Arctic, and all those interested in sustainable development options for resource-dependent regions.

The authors are deeply indebted to the Arctic-FROST (NSF #1338850), ASUS (NSF #1532655) and Resources and Sustainable Development in the Arctic (ReSDA) projects for the workshop support. The authors are also grateful for all workshop participants, Resources journal editors, reviewers and the production team. We hope that this work will be inspirational for further research on benefit sharing, co-management and sovereignty in the Arctic and elsewhere in the world.

Maria Tysiachniouk, Andrey N Petrov, Violetta Gassiy
Special Issue Editors

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Editorial

Towards Understanding Benefit Sharing between Extractive Industries and Indigenous/Local Communities in the Arctic

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Abstract: The aim of this Special Issue is to provide a comprehensive view of the benefit sharing and compensation mechanisms for the Indigenous Peoples and local communities in the Arctic and sub-Arctic regions due to industrial resource extraction. The papers cover the following topics: (1) Benefit-sharing frameworks in the Arctic. (2) Corporate social responsibility standards and benefit sharing by extractive industries in the Arctic. (3) Benefit sharing and international and national legislation. (4) The practice of implementing legislation to support Indigenous and local interests. (5) The methodologies for assessing compensation to Indigenous communities from extractive industries.

Keywords: benefit sharing; extractive industries; social license to operate; arctic; sustainability; natural resources; oil companies; corporate social responsibility; oil rent; equity; indigenous peoples

Editorial to the Special Issue: Benefit Sharing in the Arctic: Extractive Industries and Arctic People

The Arctic has a long history of extractive industry activity that shaped local communities and regional economies. Some of these colonial path dependencies could be considered negative lock-ins to perpetuate boom and bust economic cycles, accumulate resources in the hands of companies, deprive local residents of access to traditional activities and cause land degradation and pollution [1–3]. However, extractive industries, despite negative impacts, have also created new wealth and local investment in infrastructure with benefits beyond the industry itself [4,5]. In some communities, extractive industries have become an essential element of the local social, economic and political environment [6].

As new resource development comes to the Arctic, the question of benefit sharing becomes as relevant as ever. Benefit sharing is the distribution of monetary and non-monetary benefits between extractive industries and communities affected by extractive operations. The essence of benefit sharing, however, goes beyond mere compensation for damage or investment in local society. First of all, it is about the recognition of the rights and interests of the Indigenous and local communities, their sovereignty over resources and the knowledge that they share with the industry. Benefit sharing is

rooted in the Convention on Biological Diversity (1992) and Nagoya Protocol (2010) [7] and emphasizes the need to allocate the benefits coming from natural resources extraction to the local actors. In this situation, Indigenous and local communities are viewed as rights-, stake- and knowledge holders. Secondly, benefit sharing is about addressing social justice and inequalities between communities and those who commercialize resources [8]. In this sense, it directly links to the corporate social responsibility (CSR) and the social license to operate (SLO) that companies must earn in order to meet the expectation of being responsible [9]. More so, benefit sharing is a mechanism to support free, prior and informed consent (FPIC) through good-faith negotiations and meaningful consultations with Indigenous and local residents affected by extractive industry [10,11]. Thirdly, benefit sharing is about the empowerment of (or regaining control by) the Indigenous Peoples and local communities in the resource-use process, especially in benefits that are negotiated as a part of FPIC and resource co-management [2,12]. Finally, benefit sharing may be instrumental in attaining sustainable, long-term economic development in Arctic communities [13,14]. However, not all forms of benefit sharing lead to the desired outcomes [9,15].

This set of papers presents a collection of papers that shed a new light on the benefit sharing regimes across the Arctic. The frameworks of benefit sharing differ substantially among Arctic countries and regions. Legal platforms, state policies, corporate practices, and Indigenous empowerment vary considerably, thus creating a multitude of benefit sharing regimes. For example, in Alaska, where Native corporations are well established, the role of shareholders is key to distributing oil wealth. In Russia, the power of the state in managing the distribution of benefits is greater than in other Arctic countries. Even within one country, there is a diversity in benefit sharing arrangements. In this diversity, we attempt to find conceptually important commonalities, shared trends and convergent patterns, thus providing an enhanced theoretical and practical understanding of benefit sharing frameworks in the Arctic. For instance, the mechanisms of benefit sharing (such as contracting, taxation, negotiated agreements, etc.) are often similar, although utilized differently in various settings. To achieve this goal, we brought together data-rich case studies to highlight key connections, dynamics and transformations, and to reveal the strengths, weaknesses and opportunities of alternative extractive industry benefit sharing frameworks.

The bulk of the contributions to this issue comes from the participants of the Benefit Sharing in the Arctic workshop co-hosted by the Arctic-COAST research coordination network and ReSDA project in Moscow in April 2018. As a result, much of the content describes benefit sharing in various Russian regions, with a particular focus on the Republic of Sakha (Yakutia), where the benefit sharing regime is considered to be the most elaborate in Russia. Examples of benefit sharing regimes from other Arctic regions also provided critically important information for conceptual and practical synthesis. As a result, the workshop gave impulse for an in-depth study of the nature of benefit sharing and the possible implementation of its best practices in Russia. Many issues have arisen from that discussion, such as approaches to co-management; types of compensations; legal basis of negotiations; and what could be done before the mining period is over to ensure that Indigenous communities for the future. The authors of this Special Issue are trying to find these answers.

The opening article *Benefit Sharing in the Arctic: A Systematic View* by Petrov and Tysiachniouk offers an original contribution to the theory of benefit sharing frameworks. The paper provides an overview of multiple case studies from Russia, Alaska, and Canada and develops the typology of benefit sharing regimes in the Arctic. The authors illustrate the multitude of principles, modes, mechanisms, and scales of benefit sharing that constitute unique benefit sharing regimes in various Arctic regions. The paper discusses the advantages and pitfalls of different existing arrangements, and provides suggestions for further research on the subject matter.

In *What is Benefit Sharing? Respecting Indigenous Rights and Addressing Inequities in Arctic Resource Projects*, Wilson uses the analysis of international law and industry standards to elaborate the notion of benefit sharing as it applies in the Arctic. Drawing on field research in Russia and Norway, she explores the international standards and guidance associated with different models of benefit sharing practices

by extractive industries in the Arctic and sub-Arctic. The paper discusses models of benefit sharing that represent a greater degree of Indigenous participation and control. The article calls for greater efforts to incorporate and center-place Indigenous voices into extractive industry decision making that affects them, starting from strategic planning and continuing throughout project implementation.

Novikova in her article *Pipeline Neighbours: How to Avoid Conflicts?* examines the coexistence between the Indigenous Peoples and oil companies. The paper looks into corporate social responsibility policies and standards of major oil companies, such as Gazprom, Lukoil–Western Siberia, Surgutneftegas, Sakhalin Energy and Exxon Neftegaz Limited. The author investigates how these policies are perceived and assessed by the Indigenous Peoples. It is explained that, in the early stages of oil extraction in Russian regions, the Indigenous Peoples perceived oil workers as temporary migrants. In recent years, both groups perceived themselves as 'neighbors'.

Tulaeva and Nysten-Haarala in *Resource Allocation in Oil-Dependent Communities: Oil Rent and Benefit Sharing Arrangements* focus on the relationships between oil companies and oil-dependent Indigenous communities. In particular, the paper is devoted to the oil rent and its distribution in the Russian Arctic and sub-Arctic. The authors review decision-making processes and benefit sharing arrangements used by companies in several regions, including Nenets, Khanty-Mansi, and Sakhalin. They point out that, in Russia, state authorities continue to play a decisive role in the negotiation of agreements. Despite the trend of formalizing the relations between oil companies and the Indigenous Peoples, informal rules are still prevalent and favorable to stronger stakeholders.

Several articles in this Special Issue examine specific methodologies of extractive industry impacts assessment and compensation used in Arctic Russia as a part of the benefit sharing system, and especially focus on the Republic of Sakha (Yakutia) as Russia's Arctic region with the most elaborate legal system of benefit sharing arrangements.

Gassiy and Potravny in the article *The Compensation for Losses to Indigenous Peoples Due to the Arctic Industrial Development in Benefit Sharing Paradigm* use the case study of the Republic of Sakha (Yakutia) to consider the perspectives on implementing foreign benefit sharing experiences in the Arctic regions of Russia. The authors discuss the instruments and mechanisms for the inclusive and sustainable management of traditional lands. They examine the opportunities to involve local residents and Indigenous communities in environmental management and socio-economic development. The urgent issue for modern Russia is the ability to calculate economic losses of Indigenous communities in order to compensate for damage due to industrial development of the traditional lands. The authors demonstrate an original methodology for calculating the losses and discuss possible approaches to its improvement.

The paper by Nosov, Bondarev, Gladkov and Gassiy *Land Resources Evaluation for Damage Compensation to Indigenous Peoples in the Arctic (Case-Study of Anabar Region in Yakutia)* brings to light the new tools and mechanisms that can be utilized to complete the 'ethnological' impact assessment (also known as '*ethnological expertise*' in Russia). Such impact assessment evaluates resource disposition and the alienation of traditional lands and calculates the compensation for losses in traditional economic activities, such as reindeer herding, hunting, fishing and gathering. The authors argue that the proposed data-driven methodology allows for reducing the conflicts between the Indigenous Peoples and extractive industry. These tools were implemented in seven impact assessments in Yakutia in 2015–2019 and allowed the Indigenous Peoples' rights to compensation to be defended and benefit sharing agreements to be concluded.

Sleptsov and Petrova in Ethnological Expertise in Yakutia: The Local Experience of Assessing the Impact of Industrial Activities on the Northern Indigenous Peoples offer a detailed description of the methods for assessing the impact of extractive activities on Indigenous communities for benefit-sharing purposes. They discuss the experience of the 'ethnological expertise' (impact assessment) instituted in the Republic of Sakha (Yakutia), Russia, since 2010. This assessment is presented as a mechanism for ensuring that the rights of the Indigenous Peoples are protected and their voices are heard. The article reviews the practices, advantages and shortcomings of the 'ethnological' impact assessment. In the

authors' opinion, the implementation of such assessment contributes to more fair compensation to the Indigenous communities.

The theme of impact assessment and compensation methodologies is continued in the contribution by Burtseva an Bysyna entitled Damage Compensation for Indigenous Peoples in the Conditions of Industrial Development of Territories on the Example of the Arctic Zone of the Sakha Republic. The main argument of this paper is that impact assessment methods prescribed by the Russian federal legislation are based on the experience of Russia's western Arctic and cannot be easily applied to the entire territory of the Russian Arctic and sub-Arctic, and Yakutia in particular. Using case studies from that region, the article provides recommendations on improving federal impact assessment methodologies to account for local context and traditional livelihoods of the Indigenous Peoples.

The final set of articles in this Special Issue provides an in-depth analysis of particular actor relationships (state–company–citizen) and modes of implementation (agreement making, infrastructure development, and employment) of benefit sharing and presents an in-depth analysis of specific localized experiences of benefit sharing in the Arctic. Among them, two papers pay particular attention to the key actors engaged in benefit sharing, namely the state and companies.

In Globalizing Extraction and Indigenous Rights in the Russian Arctic: The Enduring Role of the State in Natural Resource Governance, Tulaeva, Tysiachniouk, Henry and Horowitz apply the governance generating networks (GGNs) theory to examine how global engagements affected Nenets Indigenous communities in oil-rich Yamal, by analyzing Indigenous protests and emergent benefit sharing arrangements. They argue that despite the growth of the GGNs that link global benefit sharing standards that companies adopt, to local implementation practices, thus reducing the power of national and regional governments, Indigenous communities in Russia have not been empowered by this process. The state continues to play a significant role in determining benefit-sharing outcomes. The authors contend that the GGN in the region are under-developed, thus ensuring the central role of the state in controlling benefit sharing arrangements.

Britcyna draws the attention to socio-economic agreements in extractive industries (oil, gas, metals and minerals) as a form of benefit-sharing arrangements and their practical applications in Russia. The paper *Industrial Projects and Benefit-Sharing Arrangements in the Russian North. Is Contracting Possible?* reveals several major issues impeding effective benefit sharing in Russia through extractive industry written agreements with communities and governments. These issues include the superficial nature of stakeholder dialogues the lack of transparency and philanthropy-like approaches to corporate citizenship practices. The article provides suggestions on how socio-economic partnership agreements aligned with corporate citizenship and stakeholder management can assist in delivering mutually acceptable benefit sharing arrangements between local people and extractive companies in the Russian Arctic.

Finally, the paper by Kuklina, Petrov, Krasnoshtanova and Bogdanov Mobilizing Benefit Sharing through Transportation Infrastructure: Informal Roads, Extractive Industries and Benefit Sharing in the Irkutsk Oil and Gas Region, Russia brings the attention to a relatively new subject: the extractive industry's transportation infrastructure, and informal roads in particular, as an element of benefit sharing. The study argues that informal roads constitute an important part of benefit-sharing arrangements, whether intentionally or not. Taking the Irkutsk Oil and Gas region in Russia as a case study, the authors examine the existence and use of informal roads from a benefit sharing perspective and consider their impacts on Indigenous communities. They investigate different benefit-sharing mechanisms by which road access, use and impacts enter in the socio-economic agreements with the companies or happen outside of the formal benefit sharing frameworks.

The articles included in this Special Issue cover various aspects of benefit sharing from broad theoretical and methodological questions to specific case studies and local experiences. However, all contributors agree that good-faith benefit sharing is a key precondition for promoting sustainable development that improves the wellbeing of Indigenous and local communities while potentially limiting impacts on the environment. Although benefit sharing does not guarantee sustainable

development or even can be misused as an excuse to absolve extractive companies of the responsibility to conduct their business sustainably, if implemented properly, benefit sharing can serve as a successful tool to advance sustainability. Most importantly, as suggested by Petrov and Tysiachniouk in this volume, as benefit sharing frameworks evolve, sustainable development would be most compatible not just with benefit sharing, but with benefit co-management and benefit sovereignty. Co-management in this case implies that communities have an equitable role in defining, monitoring, and managing benefits from extractive activities. Benefit sovereignty necessitates the control of the benefits by communities who may choose to share with the industry on a negotiated basis. Ultimately, this empowering and community-driven regime may lead to sustainable development outcomes, even when the leading economic role of the extractive industry is inevitable.

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Article

Benefit Sharing in the Arctic: A Systematic View

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Abstract: Benefit sharing is a key concept for sustainable development in communities affected by the extractive industry. In the Arctic, where extractive activities have been growing, a comprehensive and systematic understanding of benefit sharing frameworks is especially critical. The goal of this paper is to develop a synthesis and advance the theory of benefit sharing frameworks in the Arctic. Based on previously published research, a review of literature, a desktop analysis of national legislation, as well as by capitalizing on the original case studies, this paper analyzes benefit sharing arrangements and develops the typology of benefit sharing regimes in the Arctic. It also discusses the examples of various regimes in Russia, Alaska, and Canada. Each regime is described by a combination of principles, modes, mechanisms, and scales of benefit sharing. Although not exhaustive or entirely comprehensive, this systematization and proposed typologies appear to be useful for streamlining the analysis and improving understanding of benefit sharing in the extractive sector. The paper has not identified an ideal benefit sharing regime in the Arctic, but revealed the advantages and pitfalls of different existing arrangements. In the future, the best regimes –in respect to sustainable development would support the transition from benefit sharing to benefit co-management.

Keywords: benefit sharing; extractive industries; Arctic; corporate social responsibility; social license to operate

1. Introduction

Benefit sharing is formally defined as the distribution of monetary and non-monetary benefits generated through the resource extraction activity [1,2]. Globally, benefit sharing offers means to peaceful co-existence between indigenous/local communities and extractive industries. Ultimately, it aims to facilitate turning the resource "curse" into a developmental asset [3]. The concept of benefit sharing was formulated in the Convention on Biological Diversity (CBD) in 1992 and further developed in the 2010 Nagoya Protocol, a supplementary agreement to the CBD. The concept highlights the necessity of sharing the benefits that arise from the extraction of natural resources with local actors who live adjacent to resource extraction areas and provide companies access to the resources [4].

Central to benefit sharing are the issues of social justice and inequality between resource providers and those who commercialize these resources [5]. Benefit sharing represents one aspect of corporate social responsibility (CSR), and can play a major role in reducing the gap between local residents and global beneficiaries [6]. Ideally, benefit sharing fosters sustainability in local communities and facilitates the long-term economic development in remote Arctic regions [7]. Although companies often commit to benefit sharing in their corporate policies, the implementation varies significantly. The development in areas where companies and indigenous people co-exist typically falls into the extractivist model, in which actors, external to the local/indigenous communities, make major decisions

about using land and natural resources [8,9]. This leads to failure in delivering fair and equitable benefit sharing arrangements. This paper makes an effort to analyze existing benefit sharing frameworks in an attempt to find ways that would lead to sustainability of local indigenous communities.

1.1. Benefit Sharing and Social License to Operate

The concept of social license to operate (SLO) appeared in the 1990s, calling companies to act beyond legal compliance, addressing stakeholder concerns and representing a kind of "soft" regulation initiated by local communities [10] (p. 138). Today, SLO has become complementary to legal compliance and it is socially recognized that companies have to gain SLO in order to avoid risks and minimize conflicts [11]. Companies themselves acknowledge that SLO became part of their corporate social responsibility (CSR) policies, ensuring reputational benefits [12–14]. The extractive industry is given a social license to operate when its activities are performed in line with all requirements pertaining to resource extraction and are accepted by society. Society is understood broadly, assuming different kinds of stakeholders, including local/indigenous communities as well as other local residents, who are always key actors in granting SLO to the companies [14].

SLO represents an intangible agreement built on relationships between the company and local community about the project initiated by the extractive industry and involves intense negotiations between the interested parties. In the course of negotiations, the parties adapt to each other's interests and values. In these negotiations, sustainability is a major concern for local communities as they make an effort to integrate social, environmental, and economic issues in the planning of a development project. SLO has direct linkages with both benefit sharing and Free Prior and Informed Consent (FPIC), which is part of the 2007 UN Declaration on the Rights of Indigenous peoples. However, if FPIC is granted prior to the start of the project, SLO does not end with project approval by the community; it can be lost, gained, and renegotiated over the course of the mineral extraction [11]. SLO is context bound and community specific depending on community needs, expectations, culture, and values [14] (p. 584). Local benefits and local community involvement in the decision-making processes represents part and parcel of SLO. Often local support for the extractive industry project is granted in case sufficient benefits are delivered to communities [3,15–17].

Therefore, benefit sharing is an important constituent of SLO [15,18]. While the social license to operate remains to be a broad, metaphorical term [19], the benefit sharing concept is more tangible as it encompasses the distribution of monetary and non-monetary benefits generated through a resource extraction activity [1]. Differences in benefit sharing arrangements or regimes depend on international expectations imposed on the companies by investors, existing legislation, prevalent practices, regional contexts, and the level of empowerment of indigenous and local communities.

1.2. Fair and Equitable Benefit Sharing

The term "fair and equitable benefit sharing" is rooted in international conventions on biodiversity, international human rights, maritime law, and the right to science [20,21] (p. 353). Today, it is a normative concept in the field of natural resources and benefit sharing agreements [22,23]. Fairness and equitability in benefit sharing are required by EO100TM (Equitable Origin's EO100TM Standard for Responsible Energy Development), a private standard of voluntary certification. However, in the oil sector there are no companies that comply with the standard and are certified by Equitable Origin.

That being said, benefit sharing agreements, in order to be part of the SLO, must be fair, equitable (both regarding procedure and distribution), and just. These characteristics cannot be only achieved by providing damage compensations to the communities [20,21,24]. Benefit sharing is expected to contribute to the local communities' welfare and enhance the residents' control over their lives [25]. In some cases, the state can control the process of benefit sharing by means of sovereign wealth funds, land lease agreements, or obligatory social investments [12] (p. 10). Additionally, there are voluntary companies' initiatives, which can be subdivided into philanthropic activities, such as supporting cultural festivities, revitalization of languages or sports, and strategic investment in education and

training. For example, investments in education in specialties important to the oil and gas industry; trainees then would become potential employees of the company.

In this paper we work to theoretically enrich the concept of benefit sharing, as it applies to the Arctic extractive industries, and describe regimes, highlight their principles, modes and mechanisms. Finally, drawing on our previous studies and the literature, we discuss examples of benefit sharing regimes in different parts of the Arctic: Russia, the United States, and Canada.

1.3. Towards a Conceptual Framework of Benefit Sharing in the Arctic

Benefit sharing arrangements vary across regions, industries and political jurisdictions. In the Arctic, extractive companies establish and implement a multitude of benefit sharing practices that often bring together global standards, national demands, regional traditions and local idiosyncrasies. It is inherently difficult to classify and systematize these diverse practices. However, a growing volume of studies of benefit sharing in Arctic communities provides an opportunity to reflect and synthesize our knowledge on these arrangements or benefit sharing regimes [8,20–22,26–28]. This paper describes these regimes in respect to principles, models, mechanisms, and scales/targets of benefit sharing in order to provide more systematic and focused, yet nuanced, insights about benefit sharing in the Arctic.

2. Materials and Methods

The goal of this paper is to accomplish synthesis and theory building of benefit sharing frameworks in the Arctic. It is based on previously published research, analysis of literature, a desktop analysis of national legislation and regulations, as well as on the authors' own case studies conducted in the Russian North and the North Slope of Alaska. In all original studies the same methodology was used involving a combination of semi-structured interviews, participant observation, and document analysis. Interviews were conducted with extractive companies' representatives, indigenous residents, state officials from different levels of government, and other stakeholders. For each category of informants, a separate interview guide was developed with questions related to benefit sharing. The interviews were transcribed, and coded to highlight relationships between companies and communities, attitudes toward development and benefit sharing arrangements. Among the case studies used in this paper, in Nenets Autonomous Okrug (NAO) field work has been done in Naryan-Mar, and small indigenous settlements: Nelmin-Nos, Horei Ver, Kolguev Island and Krasnoe during four expeditions between 2011 and 2017 (148 informants) [16,29]. In Khanty-Mansi Autonomous Okrug (KMAO) field work was done in Surgut, Khanty-Mansiysk, Beloyarsk and 29 indigenous family enterprises in the Numto Nature Park (51 informants) [30]. In Yamalo Nenets Autonomous Okrug data were collected in Summer 2017 at Salekhard, Jar-Sale and Seikha (39 informants). On Sakhalin Island research was done in 2013 and 2015 in Yuzhno-Sakhalinsk, Okha, Nogliki and small indigenous settlements, e.g., Nekrasovka, Val, Veni (63 informants) [3]. In Alaska research has been carried out during several research trips to the U.S. between 2015 and 2018. Three research expeditions (June 2016, August–September 2017 and July 2018) were organized to the three settlements on the North Slope of Alaska: regional center Utqiagvik, and villages of Nuiqsut and Kaktovik. Data collection also took place at indigenous peoples' gatherings in Fairbanks and Anchorage, as well as at the company headquarters of ConocoPhillips, ExxonMobil and Shell in Houston (January–February 2018, 107 informants). The case of Nunavik, used to illustrate the benefit sharing regime prevalent in the Canadian Arctic, was described based on the literature review.

3. Results: Systematic View and Theoretical Synthesis

3.1. Benefit Sharing Regimes

A benefit sharing regime can be defined as a system of relationships, principles, procedures and actions, formal and informal, that describe benefit sharing arrangements and processes in a given region, community or specific extractive project. Each benefit sharing regime is complex and embedded

in national and local practices, traditions, legacies, power relations, degrees of indigenous, and local people's empowerment, as well as in company management, ownership, level of internationalization, etc. We propose to consider benefit sharing regimes by examining their key components (Table 1), which together describe prevalent benefit sharing arrangements and processes.

Table 1. Components of a benefit sharing regime.

Principle	Foundational principle of benefit sharing that define the origin and nature of the benefits
Mode	Interactions in benefit sharing processes resulting in institutionalized benefit distribution arrangements and practices
Mechanism	Financial, legal, and procedural ways used to operationalize benefit sharing
Scale/Target	Extent and inclusiveness of targeted beneficiaries

3.2. Benefit Sharing Principles

Benefit sharing principles are the foundational principles of benefit sharing that define the nature of the benefits (Table 2). In other words, a principle formulates the logic under which the benefits exist. The principle of compensation implies that the benefits are distributed to compensate for a past or future damage or loss of value resulting from extractive activity. This could be a compensation for land, pollution, loss of access to resources, etc. In either case, the benefit is a compensation by an extractive company designed to "pay for" the negative consequences of their operation. This principle most often entails environmental and socio-economic assessment of impacts, which are then monetized. The targets and mechanisms of benefit sharing under this principle vary, but most typically once the assessment is completed, a compensation is a one-way process, where a company dispenses the payment and, to an extent, absolves itself from further responsibilities, while a community (or a household) is left to identify the best use of the received benefit to alleviate the damage.

Table 2. Benefit sharing implementation by benefit-sharing principle.

Benefit Sharing Principle	Examples of Benefits
Compensation	Individual payments Payments to indigenous family enterprises Community/administrative unit funds Budget subsidies and supplements
Investment	Direct employment Local subcontracting Grants to local organizations or family enterprises Loans to businesses Support for training and education Building community facilities (e.g., stadiums, swimming pools, houses of culture, schools and kindergartens)
Charity	Donations Sponsorships Financial assistance and aid Awards

In contrast, investment as a benefit sharing principle aims to support or stimulate current and future activities, capacities and opportunities in a community affected by extractive activities. It targets the priorities identified by the receiving party or negotiated with the company (and sometimes the government). It may include payments, but also investment in training and education, developing infrastructure, providing employment opportunities for the residents, contracting local businesses, etc. Metaphorically speaking, this principle of benefit sharing focuses on giving "a fishing rod instead of a fish". This principle thus empowers local communities and possesses considerable procedural equity.

However, it also can take paternalistic forms when a company substitutes the state by investing in infrastructure and local services.

Another principle of benefit sharing is charity. The charity principle is based on the assumption that an extractive company has no fundamental obligation to provide any benefits, but it chooses to share some profits as a matter of philanthropy and good will. This principle implies little procedural or distributional equity and may serve as a self-promotion mechanism for a developer to earn the SLO.

3.3. Modes of Benefit Sharing

Modes of benefit sharing characterize the types of interaction between an extractive industry and indigenous/local communities that result in institutionalized benefit distribution arrangements and practices. Each mode gives particular roles to certain actors (e.g., state, company, community) and employs various mechanisms to accomplish benefit sharing. Modes can be built on single or multiple benefit sharing principles. Modes are also mixed and can change over time. In practice, however, one mode typically dominates. Previous studies developed a classification of benefit sharing modes existing in the Arctic [5,31,32] and identified paternalistic, company centered social responsibility (CCSR) partnership, beneficiary, and shareholder modes.

Under the paternalistic mode the state takes the dominating role in defining and distributing the benefits. It dictates, monitors, and intervenes in companies' policies and practices towards communities. Frequently, an extractive company takes the role of the state or contributes significantly to some elements of state support to local communities and indigenous peoples. Paternalism, especially prevalent in the Russian Arctic, results partly from the failure of the state to provide sufficient services to remote communities and strong pressure on both private and public corporations to support local infrastructure and welfare. In these cases, the state identifies and negotiates with companies the community needs, and by doing so, closes the gaps in its own budget. In Russia, negotiations between governments and companies represent a long-standing practice, partly rooted in Soviet type of interactions [3,16,17,30]. In other contexts, e.g., in Alaska's North Slope, a municipal government takes a paternalistic stance fulfilling its role in welfare provision implemented in a top-down manner. Therefore, the paternalistic mode of benefit sharing eschews stakeholder engagement, disembowels both local communities, and indigenous peoples [29].

CCSR represents a mode where a company plays the central role in setting benefit sharing arrangements by adopting globally developed standards, standards of various international organizations, funding agencies or legislation. It is primarily designed to please the investors and shareholders and to earn the SLO. A company's contributions to local communities under this mode often take the form of compensation or targeted investments. However, the leading role in benefit sharing (and thus, the power) is retained by the company, and in many ways the interest of the company prevails over community needs and desires.

The partnership mode is often based on a tripartite partnership among the extractive companies, government, and indigenous communities. Partnership implies a mutually empowering process with relatively high procedural equity. The partnership mode is found in the Sakhalin Island, Russia [3,12,33] and in Alaska, among others; where state, companies, and local rights-holders (indigenous organizations/Native corporations) make joint decisions and coordinate activities on both the business (e.g., subcontracting to Native corporations) and community side (e.g., coordinate hunting, gathering, fishing). The partnership mode is well positioned to generate a targeted and concerted investment in local capacities, infrastructure and businesses and thus promote development and self-reliance in the indigenous/local communities.

The beneficiary mode of benefit sharing establishes community-oriented beneficiary organizations that act as non-profit corporations to run community services, businesses, and civic institutions. These corporations negotiate and receive benefits from extractive companies and then invest in local or extraterritorial businesses, ventures, and financial markets. Revenues are usually administered through

community funds, but distribution payments are possible on an equal basis to all beneficiaries. This mode is dominant in the Canadian Arctic.

The shareholder mode involves dividend funds and shares from for-profit regional and village indigenous corporations. Indigenous shareholders receive dividend payments. Native corporations contract with extractive companies and receive royalties from extraction on the indigenous-owned land or subsoil rights to resources and distribute them between indigenous shareholders. This mode is unique to Alaska; where, for example, the indigenous residents of the North Slope are almost always shareholders of the Arctic Slope Regional Corporation and usually hold shares in one of the village corporations, thus receiving shares (and dividends) from both.

3.4. Target Groups and Scales of Benefit Sharing

Benefits can be shared at different scales and directed towards particular groups. For example, negotiations with regional and local authorities may lead to benefits being shared at the regional level, i.e., with the entire region (province, territory, or republic, represented by the regional government. Same happens at the municipal level, when the entire municipality may be a target of benefit sharing. Alternatively, the benefits could be directed at indigenous communities, indigenous enterprises, households, and individuals. In respect to the primary target of benefit sharing, we can distinguish between benefits aimed for the entire community, selected groups and individuals.

Community benefits target the entire community, represented by a designated authority, and are shared by all community members as appropriate. Sometimes only a subset of members receives the benefit (children, elderly, poor, etc.), but eligibility is not limited, and primary recipients are defined by community needs. Examples include an investment in school buildings, roads, elderly homes, foodbanks, etc.

Sometimes benefits are selective of particular groups, where membership is limited and regulated. These benefits target a specific, selected, institutionalized group or organization, such as indigenous land claim organizations, tribes, indigenous enterprises, or other membership-based entities. Examples include trapping subsidy, support for a local indigenous organization, grant to a veteran association, etc.

Finally, individual benefits are directed at each beneficiary (or household) individually. They may entail direct compensation payments to households, dividends, wages, scholarships and travel subsidies, among other benefit types.

3.5. Benefit Sharing Mechanisms

Benefit sharing mechanisms have been defined as financial, legal, and procedural ways that are used to operationalize benefits sharing [5]. There are several key groups of such mechanisms employed in the Arctic:

Streamlined benefits are stipulated in the legislation, regulation, and tax code. Long-term contractual obligations, royalty payments, and production sharing agreements become streamlined when negotiations are over and agreements are reached. Benefit sharing is unambiguous; the implementation and distribution processes are identified and repercussions for noncompliance are prescribed.

Negotiated benefits is an eclectic group of negotiated arrangements between companies and regional, district, and municipal authorities or directly with communities or indigenous enterprises. These arrangements are often triggered by external actors, such as the state or a foreign investor. This form of benefits is most closely associated with community investment. A classic example of such benefit sharing arrangements is a direct benefit agreement, such as an Impact and Benefit Agreement.

Semi-formal benefits are a more informal "plea-and-take" system, where a company may choose to "share benefits" by responding to semi-formal requests from community actors, local authorities, or private citizens. All these benefits are informally or semi-formally negotiated, often without much transparency or public participation.

'Trickle-down' benefits include gains experienced by the community through general economic impacts, such as income growth, employment, increased consumer spending, new infrastructure development, etc.

Each benefit sharing mode is characterized by a combination of mechanisms, and each mechanism would entail certain implementation forms depending on what principle is utilized to construct the benefit sharing regime. Overall, it is evident, that benefit sharing regimes are complex and have multiple dimensions, variants, and overlapping characteristics.

4. Results: Case Studies of Benefit Sharing Regimes

In this part of the paper we discuss several case studies to illustrate how the systematic view of benefit sharing is manifested in different Arctic regions. As mentioned earlier, in each given case we usually observe a combination of principles, modes, mechanisms, and scales of benefit sharing. However, having a framework that can help navigate these complexities is a step forward in respect to better understanding and assessing benefit sharing arrangements. Therefore, the cases examined below do not constitute pure ideotypes of any one mode, mechanism, or principle, but illustrate benefit sharing regimes which involve elements of several modes, multiple co-existing mechanisms, principles, and scales.

4.1. Yamal-Nenets Autonomous Okrug (YNAO, Russia)

YNAO's benefit sharing regime is based on the two principles: investment (at the regional level and through regional non-governmental organizations (NGOs) and compensatory (to reindeer herding state farms). The prevalent mode of benefit sharing is paternalistic, i.e., the state is the primary source of benefit distribution. All types of benefit sharing mechanisms are present. However, negotiated agreements concluded by the extractive companies exist only with the state and also exclude private reindeer herding enterprises.

Yamal is home to a large indigenous population and a place of intensive extraction by giant oil and gas companies, such as Gazprom, Gazprom Neft, Rosteft, and Novatek. All of these companies conduct socio-economic agreements with the regional state agencies and municipalities. Indigenous NGOs *Yamal* and *Yamal Potomkam* are active. Specifically, Yamal Potomkam (translated as "Yamal for the Future Generations") is working closely with both municipalities and local indigenous villages to distribute money for different community initiatives as part of the socio-economic agreements. However, the regional government is the main decision maker on spending these funds. State-owned reindeer herding enterprises lease agricultural lands and these enterprises are receiving the bulk of compensation for land expropriation and damage (calculated using the federal methodology). There is also a regional legislation on the Traditional Territories of Nature Use (TTNU) (TTNU is a type of land use in Russia, established for the protection of the traditional way of life of indigenous peoples of Russia, Russian Federal Law on TTNU, 7 May 2001 (amended 26 June 2007. No 118-FZ)) that gives additional protections to the traditional economy. However, it is not widely practiced in Yamal: many relatively large private reindeer-herding indigenous enterprises are not designated as TTNUs. The state agencies are slow in helping reindeer herders to designate TTNUs to receive compensations. These private enterprises thus collect nothing from companies. Instead, the money from the socio-economic agreements are used for the construction of roads and village infrastructure under the municipal authority. The only exception is Novotech, as it received a loan from an international bank and is required to include local people in consultations and decision-making processes.

4.2. Nenets Autonomous Okrug (NAO, Russia)

NAO's benefit sharing regime incorporates investment (at the regional level), compensatory (payments to reindeer herders) and charity principles. In contrast to the previous example, the benefit sharing mode has been transitioning from paternalism to CCSR. All benefit sharing mechanisms are present: streamlined, negotiated, semi-formal, and trickle-down. Because of the Khariaga Production

Sharing Agreement, more tax money stays in the area, but most extractive companies are registered outside of NAO. Agreements with the state are still broadly negotiated, but with the reindeer herders benefit sharing has become more formalized.

Several large Russian and international oil and gas companies are operating in NAO (Lukoil Komi, Rosneft, Total, and Rusvedpetro). Benefit sharing at the Okrug (regional) level is implemented through the negotiated socio-economic agreements with the governor's office. The money contributes to community investment, e.g., the building of new (or repairing existing) sports halls, kindergartens, schools, medical, recreation centers, etc. In addition to agreements at the gubernatorial level, oil companies provide support to the municipal administration. Many companies go beyond socio-economic agreements and employ the charity principle to voluntarily provide funds for cultural events, education, and other activities as part of broader social programs to earn the SLO [29].

By law, companies are required to compensate the herders for expropriated lands; these lands in NAO are designated for agriculture and leased by reindeer herders. The amount of compensation is decided through negotiations and a federally developed methodology for calculating the loss of income. The socio-economic agreements between companies and reindeer herding enterprises have always been direct and confidential. They are framed as "socio-economic partnerships," but have a compensatory nature. Oil companies are obliged to obtain consent from reindeer herders and compensate them for expropriated and damaged lands. In the early stages of resource development, the amount of compensation was mostly in-kind and only rarely monetary. In case money was given, reindeer herding enterprises were obliged to deliver reports on their spending according to the agreements. Since 2011–2012, CCSR has been slowly replacing paternalism: the relationship between the company and reindeer herders has become more direct and formalized and the compensation is calculated using a standard federal methodology with money being transferred straight to bank accounts. With these changes, the compensatory money increased and helped reindeer herding enterprises to build processing plants and slaughterhouses.

4.3. Khanty-Mansi Autonomous Okrug—Yugra (KMAO, Russia)

KMAO's benefit sharing regime also combines features of investment and compensatory principles. In areas with no TTNUs, the dominant benefit sharing mode is paternalistic, but in other places it is overtaken by CCSR. All mechanisms are present in Yugra, but there are some important distinctions. For example, tax money coming from Surgutneftegas stays in the region since the company is registered in KMAO, but other companies (e.g., Rosneft and Lukoil) have their tax home in Moscow. Agreements with the regional government are negotiated, but with the reindeer herders only standardized, one-size-fits-all agreements, are concluded.

Like in NAO, extractive companies negotiate annual socio-economic cooperation agreements with the governor and the municipalities. These are focused mostly on social and transportation infrastructure projects. In addition, companies construct a certain number of residential buildings with the consent of the regional authorities. The companies also provide direct charitable help for sports, educational, and medical institutions. Local residents often criticize the process of allocation of money [30].

In addition, the extractive companies in KMAO conclude standardized agreements with the reindeer herding enterprises. These agreements contain a standard set of goods which are supposed to compensate for a reduced use of land. The volume of compensation is not tied to the level of damage, so all enterprises receive the same compensation. Equal distribution of benefits to reindeer herding enterprises allows companies to cut their transaction costs. The main goal of these agreements is to comply with the legislation on TTNU, which requires compensation and consent. Under these agreements, the companies usually provide snowmobiles, outboard motors, chainsaws, fuel, and clothing. If there is no formally-designated TTNU, companies transfer funds to the budget of the district administration, who then distributes the benefits [30,34].

4.4. Partnership Mode: Sakhalin Island, Russia

The Sakhalin benefit sharing regime is largely based on the investment principle with the Russian companies focused on investments in infrastructure, while foreign co-owned oil companies engage in strategic investment in community empowerment and traditional indigenous activities. The latter is accomplished through a system of tripartite partnerships, which is the dominant mode of benefit sharing in the region. In respect to benefit sharing mechanisms, all of the groups are practiced, but the tax money stays in the region because of the production sharing agreements. Negotiated benefits are also well-established, primarily in the form of grants to indigenous communities and families.

Sakhalin Energy and Exxon Neftegaz Limited established tripartite partnerships with the indigenous peoples and the regional authorities in the mid- to late-2000s. Sakhalin Energy initiated the Sakhalin Indigenous Minorities Development Plan (SIMDP). The SIMDP supports two main foci: the Social Development Fund and the Traditional Economic Activities Support Program. The first finances healthcare, cultural, and educational projects. The second provides financial aid for specific households that allows them to buy equipment (motors, machines, boats, cars, etc.). Company representatives and public officials participate in the development and management of the SIMDP, and distribution of funds is the responsibility of the indigenous peoples. The SIMDP has been implemented in all territories populated by indigenous peoples, even in places where Sakhalin Energy does not operate. The tripartite partnership mode that Sakhalin Energy employs in benefit-sharing is considered one of the most successful in the world by the UN [35,36].

Exxon Neftegaz Limited conducted a similar type of tripartite partnership agreement with the state and indigenous peoples. However, Exxon's range of support for social programs is narrower than that of Sakhalin Energy. Both companies allow local residents to take part in the decision-making process related to distribution of funds allocated by the company. Empowerment and building capacity of indigenous communities is key in this benefit sharing arrangement [3,34,37].

4.5. Shareholder Mode: the North Slope of Alaska, USA

The Alaska North Slope benefit sharing regime is based on investment, compensation, and charity principles administered by different actors, such as: the North Slope Borough, Native villages and village corporations, oil companies, and state and federal governments. The unique mode of benefit sharing in Alaska is the shareholder mode, although it is mixed with others: the paternalistic, CCSR, and partnership modes. All types of mechanisms are also present.

In Alaska there are several layers of benefit sharing, the most essential and unique mechanism being the shareholder mode, which is twofold. On the one hand, through the Alaska Permanent Fund (Sovereign Wealth Fund), every citizen of Alaska receives a share of money from the oil income [38]. On the other hand, indigenous Alaskans are shareholders of regional and village corporations, which appeared in the framework of the Alaska Native Claims Settlement Act (ANCSA) [5]. Approximately 80,000 Alaskans are currently enrolled in Native corporations. In 1971, corporation membership was open to any resident who has at least "quarter blood" (had at least one Native grandparent), with an option to join one regional and one village corporation. Each shareholder who was born before 1971 received 100 shares. Those who were born after 1972 were supposed to inherit shares later or receive them as gifts. Further decision-making about sharing with "afterborns" differed from corporation to corporation and depended on shareholders' vote and/or board decisions. For instance, the Arctic Slope Regional Corporation (ASRC) made a positive decision on this issue, and the number of shareholders grew from 3700 at the time of establishment to 13,000 in 2018. Village corporations on the North Slope of Alaska decided not to provide shares to members born after 1972. This decision entailed intra-generational inequalities that emerged over time.

Under the stipulations of ANCSA, the Alaska regional corporations share income from resource revenues with each other. This is due to the fact that some corporations own the land rich with oil and minerals, while others do not. Seventy percent of a corporation's income coming from resource extraction on Native Alaskans' lands received via ANCSA are shared with other regional corporations

(ANCSA 7i provision). In the North Slope, the ASRC contracts with many oil companies and receives royalties from oil extraction on Native-owned land. Village corporations own the surface title to the land, receive royalties through surface-use agreements and contract oil field services from oil companies. This money is also partly distributed to shareholders. ASRC, along with the village corporations, is overseeing the mineral-rich lands and controls the development of resources by leasing mineral-rich lands to oil companies. As a result, the corporation provides jobs to its members.

Other benefits include state revenues coming from oil companies' royalties plus the production and corporate income taxes, which are partly distributed to communities via state grants and revenue sharing. The indigenous-run municipality, the North Slope Borough (which operates under the state of Alaska), is distributing money from taxation of oil infrastructure to communities. These state-led benefit sharing arrangements are top down and paternalistic. Finally, transnational corporations, such as Conoco-Phillips and ExxonMobil, pursue CCSR mixed with the partnership mode. They are committed to strategic investments in education, training, and capacity building in indigenous communities. This funding is channeled through direct sponsorship or grants to indigenous and non-indigenous nonprofits.

4.6. Beneficiary Mode: Nunavik, Canada

The benefit sharing regime in the Canadian Arctic mostly builds upon the investment principle, although compensation is also included. Canada is home to a unique mode of benefit sharing, the beneficiary mode. All mechanisms of benefit sharing are available, but Impact and Benefit Agreements (IBA) are very prevalent and most notable.

In Canada, many benefit sharing arrangements originate from the Comprehensive Land Claim Agreements (CLCA) [39]. Throughout history, most of them were signed in conjunction with implementing extractive industry projects. The CLCAs normally include a compensation for the surrendered surface rights using a per-capita formula, as well as ownership over a portion of the land surface and over a smaller portion of the subsurface. The subsurface rights and rights of sharing the resource revenue became part of the most recent CLCAs [40]. CLCAs not only bring benefits to the communities, but serve as an empowerment instrument for the implementation of indigenous peoples' rights. CLCAs establish resource co-management boards involved in the management of natural resources and Environmental Impact assessments. CLCAs are often supplemented by the self-governance policies.

To establish benefit sharing in order to obtain SLO [18], and to avoid risks and litigation processes, extractive industries sign IBAs with the indigenous organizations that represent communities affected by projects. The major aim of IBAs is to ensure benefit sharing, i.e., sharing profits, creating local jobs for Inuit, and making contracts available for indigenous businesses [41]. Some CLCAs require IBIs between the extractive industry and indigenous peoples, for example, the Nunavut and Labrador Inuit land claim agreements [40]. IBAs represent a private, confidential agreement between indigenous organizations and developers [42]. Although communities do not have a right to veto the project directly, the indigenous peoples can ban the project through continuous litigation and by refusing to sign an IBA, i.e., exercise a quasi-veto [40,43].

Nunavik in the Canadian Eastern Arctic has two major on-going mining projects: Raglan (started in 1994), and Expo (operating since 2012). Nunavik is one of signatories of the 1975 James Bay and Northern Quebec Agreements (JBNQA) and Makivik Corporation, which represent the land claim organization that negotiates and signs IBAs. Makivik Corporation, the villages of Salluit, Kangiqsujuaq, and landholding corporations signed their IBA with the Raglan subsidiary in 1995 [44]. According to this IBA, 4.5% of profits acquired by mining are divided between Salluit (45%), Kangiqsujuaq (30%) and the Kaktivik Regional Government (25%). The distribution of money depends on the community decisions by annual voting. Salluit beneficiaries voted for distributing most of the money to individuals, while Kangiqsujuaq mostly initiates community projects [45]. In the framework of the

IBA, a consortium of Salluit and Kangiqsujuaq businesses, called Nuvimmiut, was created. It works on contracts with Raglan, which allows additional benefits to be provided to communities [46,47].

5. Discussion: Considering Advantages and Disadvantages of Benefit Sharing Regimes

This paper developed the typology of various benefit sharing regimes in the Arctic and illustrated them with examples from Russia, Alaska, and Canada. In the cases of the NAO, YNAO, and KMAO regions of Russia we see path-dependent practices of benefit sharing at the regional level vested in the principles of social infrastructure investment, compensation, and charity and implemented through a largely paternalistic mode [3,16,17]. In all these regions, the most common practice is to conduct socio-economic agreements between companies and the regional governor. Regional authorities, with little input from indigenous and local communities, act as the main actors in decision-making in respect to social investment and industrial activity, thus reproducing Soviet and post-Soviet paternalistic experiences [17,30,34]. Indigenous and local peoples participation in the decision-making processes is minimal. Therefore, the benefit sharing regime at the regional level is characterized by insufficient procedural and distributive equities [5], strong path-dependency, extractivism and overreliance on semi-formal and trickle-down mechanisms.

If we look at the local scale and direct interactions between companies and indigenous peoples in the Russian Arctic, we observe a continuum of regimes that span from strictly paternalistic to CCSR mode-based arrangements. It is important to point out that benefit sharing regimes differ considerably among Russian territories. YNAO represents an example of a regime where local agreements are setup via the regional and local governments, and no separate agreements with indigenous communities are negotiated, except for state-owned reindeer herding enterprises. In NAO we observed a move towards CCSR due to the switch to the new federal methodology for calculating the compensation for damage, which partly substituted socio-economic agreements between companies and indigenous peoples. The new arrangement gave more leverage, funds and spending freedom to reindeer herders. However, we concur with the literature [17,29] that in Russia, CCSR-based benefit sharing regimes echo the Soviet experiences. They are characterized by the companies' paternalistic attitudes towards the indigenous communities and desire to retain the decision-making power in respect to benefits. This is often done by applying the charity principle to benefit distribution and reliance on semi-formal arrangements, in which communities are typically at the mercy of an extractive company. Direct benefit sharing arrangements between companies and indigenous peoples in NAO and KMAO are determined by the regional legislation. In NAO companies are obliged to compensate for expropriated and/or damaged agricultural land leased by reindeer herding enterprises. In KMAO, companies are required to compensate for building infrastructure and damaging the TTNU lands.

Benefit sharing regimes based on both paternalism and CCSR are characterized by the limited involvement of indigenous peoples in decision-making processes. During the construction phase of large oil infrastructure, public hearings and environmental impact assessment proceedings are organized in larger settlements with limited participation of nomadic reindeer herders. The main decisions on social investments are made via semi-formal negotiations between the company and the authorities. Money is allocated for building social infrastructure, purchasing goods and providing transport for indigenous peoples. Indigenous peoples own initiatives receive little attention. There are no mechanisms developed for monitoring public opinion and requests from the indigenous and other local residents.

In contrast, the benefit sharing regime in Sakhalin is guided by the corporate policies of the international consortia conducting the oil extraction, as well as by the standards of international financial institutions. Both Sakhalin Energy and Exxon Neftegaz Limited strategically involve the state actors in the tripartite partnerships in order to avoid state pressure to force these companies to fill gaps in the state budget and public services (which happens with the state-owned extractive companies, such as Rosneft) [37]. In the case of Sakhalin, the transnational actors brought in the international standards that are reflected in benefit sharing arrangements. The peculiar feature of

the tripartite model is that the companies readily involve indigenous people in making decisions about their own development. Sakhalin Energy is granting indigenous representatives the power to allocate and distribute funds without assistance from the company or the state. Both companies enabled a procedure of filing complaints to the company. The information about the results of grant competitions, the amount of money granted and the beneficiaries are fully disclosed to the community. Social investment involves supporting and promoting local initiatives [3].

Successful benefit-sharing practices can help companies to ensure a long-term SLO and can enhance sustainability in resource-dependent communities [14,33,34]. However, the practices of interactions with stakeholders differ in the investigated case studies. In NAO and KMAO we observed the shift from arrangements based on the financial aid (charity) principle to the compensation principle of benefit sharing with the growing role of CCSR. This kind of benefit-sharing may enhance corporate efficiency for the short-term, but does not guarantee long-term SLO and does not eliminate risks of conflicts, especially in cases when compensations are small and/or are not calculated properly. However, this does not mean that the tripartite partnership model in Sakhalin is unequivocally better for effective benefit-sharing among indigenous communities. The partnership mode assumes that the communities are ready to comply with the transparent rules, as well as the companies themselves. This also assumes that the community is able to take responsibility for its decisions. This, however, is not always true. For instance, in the case of Sakhalin, the company delegated power to indigenous representatives to distribute grants between households, which in turn entailed conflicts. In the partnership mode, local initiatives and entrepreneurship workshops are prioritized, however, not all training programs prove to be efficient. In a variety of cases, investing corporate funds by Russian companies in the construction of communities' facilities turns out to be a more important instrument of social investment [34].

The Alaskan and Canadian Arctic benefit sharing regimes differ considerably from one another and from Russia. This can be explained by differences in land ownership, as well as by diverging political and economic contexts. In Russia the land belongs to the state and land with mineral deposits is leased to the extractive companies. Benefits from lease sales go to the state. In both Alaska and Canada, a significant sum of money comes to indigenous communities via royalty payments. In Russia when companies encroach upon land (TTNU or agricultural) leased by indigenous reindeer herders, these companies pay (relatively minimal) compensation for the loss of pastures. In Alaska in the framework of ANCSA, and in Canada in the framework of CLCAs, land is owned by indigenous peoples and a significant amount of royalties are paid to indigenous communities when oil companies use the land. These royalty payments are much greater than compensations in Russia. In both Alaska and Canada, a significant effort was made to invest in indigenous communities and build capacities by creating indigenous-run businesses. Such benefit sharing mechanisms have largely not emerged in Russia. In Alaska, Native corporations, are involved in oil drilling themselves, and in Canada regional corporations invest and maintain a variety of businesses. In both Alaska and Canada, however, there are often tensions between indigenous traditional activities and non-traditional businesses involvement with potentially negative impacts of the expanding wage economy on traditional practices and cultural vitality [48,49].

Benefit sharing regimes based on the shareholder mode in Alaska and beneficiary mode in Canada are relatively unique for the Arctic and may present considerable interest to other world regions, although they do have their strengths and weaknesses. Conceptually, each regime has characteristics that support increasing the wealth of both individuals and communities. In both cases the indigenous peoples are empowered to make decisions on distribution of benefits, however, some of these decisions may fail to foster sustainability in local communities. At the same time, in the North Slope of Alaska village corporations create intergenerational inequalities by denying the "afterborns'" shares and in Canada the distribution of payments to individuals may elevate alcohol and drug abuse and disrupt social services.

6. Conclusions

Building on various existing case studies, this paper presented a systematic view of benefit sharing regimes found in the Arctic. Each regime is characterized by a combination of benefit sharing principles, modes, mechanisms, and scales of benefit application. While not exhaustive or entirely comprehensive, this systematization and typologies appear to be useful for streamlining the analysis and improving understanding of benefit sharing in the extractive sector. The ability to make distinctions among benefit sharing frameworks is not only an academic task, but an important practical tool. The notions of benefit sharing regimes, mechanisms, modes, and scales may help both communities and companies to more effectively assess and compare their existing or proposed arrangements with known practices.

The case studies in the Russian North, Canada and Alaska described in this paper demonstrated various benefit sharing arrangements in the Arctic. We observed a continuum from mostly compensatory, paternalistic frameworks to regimes that promote partnerships and co-management of benefits. The regional specifics, including path-dependency, appear to be very important in the making of benefit-sharing arrangements across the Arctic. Land designation (agricultural, traditional nature use, public, or private) is essential for the benefit sharing regimes, and their specific combinations of principles, modes, and mechanisms. Legislation is also an important component, especially laws related to TTNU in Russia, ANSCA in Alaska, and CLCAs in Canada. In certain cases, the approach to benefit sharing is guided by the company's corporate principles or requirements set by landing financial institutions. High indigenous involvement in the negotiation of benefits was observed in Sakhalin, Alaska, and northern Canada.

In the Russian North the investments have been mainly focused on creating "brick-and-motor" infrastructure. Construction projects (sports halls, schools, and so on), as well as cultural or sports events, are prioritized. Here, the development of indigenous peoples' initiatives and entrepreneurship receives little attention. In contrast, both in Alaska and northern Canada, the benefit sharing regimes foster development of indigenous-run businesses and local (self)governments.

The paper has not identified an ideal benefit sharing regime in the Arctic, but revealed the advantages and pitfalls of various arrangements. Diversity of regimes seems beneficial for different Arctic communities; however, in each benefit sharing framework there is a significant space for improvement. Sustainable development in the Arctic can be defined as development that improves the wellbeing, health, and security of Arctic communities and residents while preserving ecosystem structures, functions, and resources [50]. Ideally, benefit sharing services have exactly the same purpose: to improve human wellbeing and protect ecosystems to the maximum extent possible (or compensate for their degradation). Therefore, benefit sharing is a mechanism that affects multiple aspects of sustainability— economic, social, and environmental. Equitable benefit sharing is also part of sustainable governance and supports community sustainability.

In the future the best regimes in respect to sustainable development would be those that support the transition from the currently prevalent forms of benefit sharing to benefit co-management and benefit sovereignty. Benefit sharing in a narrow sense may mean a simple recognition by the state or a company that some benefits belong to rights, knowledge, and stakeholders. Benefit co-management emphasizes the active and equitable role of communities in designing, monitoring, and managing benefits from extractive activities, where the guarantees of sharing are coupled with the flexibility and responsiveness to the community's current and future needs. In addition, co-management implies the availability of a functioning monitoring system that (independently) tracks impacts of benefit sharing arrangements on communities, and thus, allows informed decisions to be made about benefit sharing arrangements. So far, in most regions of the Arctic such monitoring systems are very limited and incomprehensive, or do not exist altogether [51]. Finally, benefit sovereignty requires a full community control over the benefits, their sharing, and management, where an extractive company may be delegated some benefits for performing certain services (such as conducting resource extraction). The dynamics towards co-management and sovereignty contributes to the design and implementation of

broader democratic procedures, which ensure high indigenous participation. Developing the principles and practices of more equitable benefit sharing is an important task for future research.

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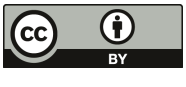

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What is Benefit Sharing? Respecting Indigenous Rights and Addressing Inequities in Arctic Resource Projects

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Abstract: International standards refer to Indigenous peoples' right to benefit from resource development, participate in decision-making and determine priorities in development planning that directly affects them. While good practice exists in benefit sharing, Indigenous peoples still lack opportunities for a meaningful role in strategic planning. In his role as UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya identified a 'preferred model' of resource development in which Indigenous peoples have greater control over planning decisions and project implementation, and consequently a more meaningful share of the benefits of resource development. This paper explores the requirements of international standards and guidance alongside different models of benefit sharing in practice by extractive industries in Arctic and sub-Arctic contexts. It is based primarily on desk-based analysis of international hard and soft law and industry standards, while also drawing on ethnographic field research in Russia and Norway. It highlights good practice within mainstream development scenarios and identifies models of benefit sharing that represent a greater degree of Indigenous participation and control. It concludes that there is a need to consider benefit sharing within an overall paradigm that allows greater space for Indigenous voices in decision making, including at the strategic planning stage.

Keywords: arctic; Indigenous; extractive industries; international standards; benefit sharing; equity; strategic planning

1. Introduction

Indigenous and local communities are increasingly calling for more equitable benefit sharing by the extractive industries, alongside the effective management of environmental and social risks of industrial activity. Within international law, the concept of 'fair and equitable benefit sharing' is increasingly accepted as a norm in a range of sectors, including the extractive industries [1]. For the purposes of this paper, the term 'benefit sharing' encompasses taxation and revenue distribution, job creation, ownership of companies and shares, negotiated agreements and community development programmes. The paper focuses in particular on the benefits that accrue to local, especially Indigenous, communities directly affected by resource development. Benefit sharing is not an isolated process and should be considered alongside local and Indigenous rights to land and resources, project impact mitigation, and compensation arrangements. Benefit sharing is distinct from compensation (although there may be overlaps in practice) and relates to broader questions of equitable development. This paper focuses primarily on the Arctic (and sub-Arctic) context, building on a steadily increasing amount of scholarship related to various aspects of benefit sharing in Arctic resource development [2–8].

The paper highlights a key aspect of benefit sharing that has been under-explored in scholarship and neglected in practice to date, namely the role of Indigenous peoples in strategic planning. The term 'strategic planning' refers, inter alia, to the development of national policies, plans, programmes and

strategies for resource development and benefit distribution; and the allocation of lands for resource exploration and extraction, including resource mapping and land-use zoning at the national level or within local area plans [9,10]. Indigenous peoples' right to participate in decision-making and determine priorities at this stage of planning is written into international Indigenous rights instruments (see Section 3.1). The lack of influence of Indigenous peoples over these crucial planning stages results in a resource development model that is controlled by the state and economic players that are external to local Indigenous communities, commonly resulting in less than equitable benefit-sharing outcomes for those communities [11] (see Sections 3.3 and 3.4).

At the national level, benefits from resource projects are expected to derive from taxation and revenue distribution, job creation, project-related infrastructure and social services, and various multiplier effects such as the growth of secondary industries and increased purchasing power [12,13]. Governments are responsible for setting legislation and regulations related to the above, while benefit-sharing may also be managed by state-owned companies. Governments are also responsible for land agreements and treaties, which may determine local and Indigenous rights to negotiate benefits. They also set requirements for consultation around government policies, plans, programmes and strategies that relate to the environment and those that directly affect Indigenous peoples (see Section 3.1). Governments may also establish sovereign wealth funds, such as Norway's Oil Fund, or sub-national funds, such as the Alaska Permanent Fund [14,15]. Community-level benefit sharing is mandated by government legislation in some countries, but the detail and content of these regulations vary greatly [16].

Yet the people who experience most of the direct environmental and social costs of extractive projects—many of whom are Indigenous—frequently fail to benefit from the so-called 'ripple effect' of revenue distribution and job creation [17]. They may not receive many of the tax payments or revenues generated by projects, while local workers and businesses may not have the skills or experience—or indeed the desire—to compete for jobs and contracts [6]. This imbalance of costs and benefits is compounded by the unpredictable nature of commodity markets and the impacts on communities of economic slumps or sudden project closures [18–20]. Inadequate or poorly-managed benefit-sharing can lead to the breakdown of trust, to social tension or even conflict, threatening the success of projects, company profits and the ability of governments to meet policy goals [21,22]. The disempowerment, 'voicelessness' and lack of agency of Indigenous, poor and marginalized people have long been identified as key factors in the failure of extractive industries to have positive development outcomes [12,23].

Benefit sharing in Arctic (and sub-Arctic) extractive industries has traditionally been driven by state-owned companies in the context of colonial and neo-colonial type approaches to extractive industry development [24,25]. Where the company itself is not state-owned, the state may still play a significant role in benefit sharing. Across the Arctic and sub-Arctic region, the role of the government (nationally and regionally) varies greatly, which is partly a reflection on the relative size of the countries and their contrasting governance regimes [8,26]. Tysiachniouk and Petrov identify four modes of benefit sharing in the Arctic: (1) 'paternalistic mode' (a mode dominated by the state); (2) 'company centred social responsibility (CCSR) mode' (a mode in which the company takes a more decisive role); (3) 'partnership mode' (bi-lateral partnerships between communities and companies, or tri-lateral partnerships involving government); and (4) 'shareholder mode' (a mode in which local communities own shares in mineral projects and in the companies exploiting the resources) [8]. Writing about Canada, Coates and Crowley [24] (p. 20) state:

> While there is no single model of resource and economic development that has or will work in Aboriginal communities across the country; it is increasingly clear that most Indigenous peoples are open to partnership approaches. Collaboration makes sense for Aboriginal people, communities, companies, governments and Canada at large.

In an analysis of international law that specifically seeks to clarify the concept of benefit sharing, Morgera recognizes the iterative and dialogic nature of the concept as established in international legal instruments [1] (p. 364):

> [B]enefit sharing differs from the unidirectional (top-down) flows of benefits and, rather, aims at developing a common understanding of what the benefits at stake are and how they should be shared. In this connection, it has been argued that benefit sharing is geared towards consensus building. It entails an iterative process, rather than a one-off exercise, of good-faith engagement among different actors that lays the foundation for a partnership among them.

In Morgera's analysis 'partnership' refers to 'an approach to accommodate state sovereignty over natural sovereignty and indigenous peoples' self-determination' [1] (p. 364). This balance—particularly between state sovereignty and Indigenous peoples' self-determination—lies at the heart of current efforts to ensure equitable benefit sharing in the context of extractive industry activity that takes place on Indigenous peoples' lands.

The former UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya, identified the 'standard' or 'prevailing' model of resource development, driven by economic actors external to the local Indigenous community, which frequently fails to deliver adequate benefits to local Indigenous communities [11]. He contrasted this with a 'preferred' model, based on greater levels of Indigenous control over the nature of the development and the sharing of the benefits, emphasizing in particular the Indigenous right to 'determine priorities and strategies for the development or use of their lands and territories' according to Article 32 of UNDRIP [11] (see Section 3.3). Elsewhere, the 'prevailing' model of resource development has been termed 'extractivism' [27,28], and has been contrasted to Indigenous relations with the natural environment, based more on partnership, respect and entitlement through 'knowing' rather than 'owning' the resources [29,30]. Anaya's 'preferred' model corresponds to Tysiachniouk and Petrov's 'shareholder' mode, while also envisioning greater Indigenous control over decision-making, including strategic planning (see Section 4). The notion of 'Indigenous control' also extends to decision-making about whether or not a project goes ahead. In cases where Indigenous peoples do not own the mineral resources in question, this requires a process of free, prior and informed consent (FPIC) before key development decisions are made [11].

A growing awareness of the lack of fairness or equity in the standard resource development model is now compelling Indigenous communities to urge governments and companies to: (a) ascertain how communities envision their future in relation to extractive industries, and whether or not they want resource development to take place on their lands; and (b) to ensure appropriate decision-making powers and adequate benefit sharing, if developments are to take place [7,31,32]. This is supported in international standards—notably the International Labour Organisation (ILO) Convention No.169 on Indigenous and Tribal Peoples in Independent Countries (ILO 169, 1989) and the United Nations (UN) Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007), which refer, inter alia, to the right of Indigenous peoples to decide their own priorities and to exercise control over their own development; yet, as Anaya has pointed out, this particular Indigenous right is rarely respected in practice [11] (see Sections 3.1 and 3.3).

A key trend in macro-level benefit sharing is transparency, as a way to tackle the so-called 'resource curse' that frequently hampers resource-rich countries in taking advantage of this potential (e.g., due to corruption, revenue mismanagement, excessive government spending and political authoritarianism) [17,33]. The Extractive Industries Transparency Initiative (EITI) is a leading influence in this sphere, although by no means the only one [34]. Norway participates in and has strongly supported and promoted EITI, which was launched in 2002 and obliges signatory governments to disclose extractive industry revenues that they receive, while companies disclose what they pay to governments. Recent revisions of the Standard have sought to increase sub-national and project-level transparency; however, efforts to ensure that project-affected communities can access sufficient

information about revenue flows and project benefits have had limited success [34]. EITI has also been criticized for the lack of Indigenous peoples' involvement in what is promoted as a multi-stakeholder initiative [35]. At the same time, in Canada, which has not signed up to EITI but where national legislation is moving ahead on transparency, experts advocate caution around disclosure of information relating to previously confidential payments made to Indigenous groups [36].

Investment contracts between host governments and companies frequently contain benefit-sharing arrangements [37]. Mandatory clauses may relate to infrastructure development (e.g., roads, bridges or power generation) or 'local content' (mandatory levels of local hiring and contracting) [38,39]. Local content policies are aimed at developing local economies, building a skilled workforce and creating a competitive supplier base. However, local content targets tend to relate to the national level rather than numbers of project-affected local or Indigenous workers hired. Local content targets for local and Indigenous populations can, however, be incorporated into voluntary company-led initiatives and benefit-sharing agreements [40] (see Section 3.2). In North America, development corporations or Native corporations are a key model for benefit sharing. In Canada, Aboriginal development corporations have received funds from modern treaties and legal settlements as well as resource revenues, and have become significant players in Indigenous economic development [24] (see Section 3.4). In Alaska's North Slope residents receive Permanent Fund dividends and many are also shareholders in the Arctic Slope Regional Corporation and their local village corporation. Yet the 'shareholder' model of benefit sharing has its challenges, including shareholder eligibility, inter-generational fairness and the challenge of trying to keep wealth within the local community [8].

Some companies view their corporate responsibility primarily in terms of paying taxes and following the legislation of the host country [5]. However, increasingly many companies and financial institutions are starting to realise the importance of recognising human rights and Indigenous rights. Benefit sharing is understood to be a good opportunity to build trust and a social licence to operate in local and Indigenous communities and society more widely [41,42]. Therefore, there is increasing interest among industry players in benefit sharing at the project level, particularly where government regulation or leadership is lacking on local-level benefit-sharing. A World Bank-commissioned report explored the pros and cons of government-regulated and non-regulated approaches to benefit sharing [16]. Some practitioners interviewed for the report feared that mandatory standards and requirements would create a 'lowest common denominator' system. Others feared that a lack of legal obligations might result in low levels of commitment; and, without adequate legal clarification and monitoring, companies could struggle to deliver effective benefit-sharing programmes. Others argued that it may lead governments to abdicate their own responsibilities. This approach may also result in dependency on the company; in some areas, there has reportedly been a shift from 'state paternalism' to 'corporate paternalism' [43].

Companies' voluntary 'social investment' efforts range from philanthropic activities to negotiated agreements with communities. The global oil and gas industry association for environmental and social issues, IPIECA (the global oil and gas industry association for environmental and social issues), defines social investment as 'the voluntary and/or regulatory contributions companies make to the communities and broader societies where they operate, with the objective of mutually benefiting external stakeholders and the company' [44] (p. 2). Social investment can be 'mandatory' (or 'regulatory') via the above-mentioned legal obligations within investment contracts, or 'voluntary' (initiatives that companies develop based on their own corporate policies and commitments to international financial institutions, in response local demands, or to establish a competitive edge in negotiations with host governments) [45]. Social investment can be philanthropic (e.g., support for sports or cultural activities in the local community) or 'strategic' (e.g., development of local skills to provide labour, goods or services to the resource-development project) [42]. Frequently, programmes of support for Indigenous peoples come under the rubric of 'voluntary social investment', with mixed levels of success (see Sections 3.2 and 4).

In practice, social investment interventions in Indigenous and non-Indigenous communities have frequently been based on a limited understanding of the local context, with little strategic planning, often involving distribution of free goods and services, with little local ownership and no clear objectives, transparency or effort to measure and communicate the outcomes [16]. Some programmes ended up creating community dependency on the company, or allowing 'benefit capture' by elites, or fuelling local corruption. The failure of such efforts to provide tangible long-term benefits to communities led to the evolution of more targeted and formalised approaches, often termed 'strategic social investment', with a strong focus on local ownership and the essential 'exit strategy' to ensure sustainability beyond the life of the industrial project [44,46]. Independent foundations, trusts and funds have also been used to deliver development projects [47]. Increasingly there are calls for projects to support not only project-related skills development, but also locally appropriate and desired livelihoods support and skills development outside of the industry. Households may combine this with the income of one or more members of a family or extended family working in mineral or petroleum development. Such models and potential models of 'coexistence' are worth exploring further [6,29].

A key factor enabling local communities to assert their rights is whether or not they are officially recognized as Indigenous in national law, and therefore able to enjoy the associated legal protections and benefits, or—in the case of project finance from international financial institutions—whether they meet a set of criteria that might 'trigger' the performance standard that relates to Indigenous peoples. This is a particular challenge in parts of Russia, where not all Indigenous traditional resource users benefit from official recognition in Russian law, notably the reindeer-herding Komi people of northwest Russia, who live in a major petroleum province [48,49] (see Sections 3.2 and 4). There is also a question of the geographical scope and boundaries of a support programme. For instance, the Sakhalin-2 project Indigenous peoples' development plan covered all the Indigenous people on Sakhalin Island, the Russian Far East, whether or not they were directly impacted by the project, a decision that was welcomed by the Indigenous groups themselves, many of whom live in difficult circumstances; but this was only made possible by their small total number [50]. Political contests for resources and benefits inevitably arise in benefit sharing, and so broad-based representative decision making in the design and governance of a programme is more likely to generate equitable outcomes [51].

Frequently the first companies to visit a community are junior exploration companies, which are smaller than the multinationals and have fewer resources and less experience to engage in meaningful engagement with the local community or to implement development projects [52]. At this point, while the outcome of their exploration is uncertain, many feel that it is too soon to engage in benefit-sharing activities. In general, benefit sharing only takes place at this stage if it is mandated by national legislation as is the case, for instance, in Greenland's oil sector [53]. Moreover, extractive projects may change hands several times during their development, with the risk of a lack of consistency as project personnel change. In many cases, contractors to major projects also engage in voluntary social investment, especially during construction phases; a lack of co-ordination between contractors means that strategic advantages could be lost [54]. A further risk is that of a project being discontinued and social investment programme support withdrawn suddenly if there is a downturn in the price of commodities. This may leave communities with half-built infrastructure or a legacy of skills development with no project to apply the new skills to [55].

Where Indigenous communities are involved, discussion and practice in benefit sharing increasingly relates to the negotiation of agreements between communities, companies and/or the state, known as benefit-sharing agreements, community development agreements (CDAs) or impact-benefit agreements (IBAs). These may be a mandatory requirement from national or regional governments, or a voluntary practice (e.g., a condition of finance from international financial institutions). Such agreements are common in Canada [7,56,57]. They are also a long-established tradition in Russian Arctic regions with significant indigenous populations [2,3,58]. Agreements can reduce risk by offering predictability, transparency and a way to manage expectations; they offer a framework for

long-term structured engagement, participatory decision-making and monitoring, with clear roles and responsibilities, and mutually agreed objectives and commitments [40].

In the past, agreements dealt primarily with local employment and business opportunities, but the scope of agreements has since expanded to include: revenue sharing and equity shares; education and training; land access; local use of mine infrastructure; and community participation in planning [59–61]. In some countries in recent years royalty payments have become more common than cash payments within community development agreements, and this has increased the scale of benefits, which can in some cases be comparable to the revenues typically accruing to the state or provincial governments [51]. While benefit sharing is distinct from compensation, benefit-sharing negotiations may also include a component of environmental and social impact mitigation and is likely to be closely related to impact assessments [40,62]. A process of FPIC might also be constructed around a benefit-sharing agreement [60,63]. However, good practice guidance emphasises that agreement to begin negotiations does not imply community consent to a proposed project and a community has the right to terminate a negotiation if, for example, information becomes available that makes the project unacceptable [40].

Within mainstream resource development models, good practice includes: open, inclusive dialogue on costs and benefits, and inclusion of cost-benefit analysis in social impact assessments; preferential employment and related training; livelihoods development support; profit-sharing and equity stakes [16,44]. Good practice in agreement making includes a process of inclusive dialogue with methods, goals and indicators of effectiveness agreed in advance between the parties; the sharing of full information around potential project impacts and benefits; and leading to mutual agreement on the way forward in developing the project [51,59]. A benefit-sharing agreement should document all agreed aspects of the negotiation and be legally binding, with potential to revisit the agreement if circumstances change significantly. Issues can be addressed in the course of the project through a locally-appropriate grievance mechanism and participatory and third party monitoring [40,64]. According to Anaya, the 'general rule' ought to be to carry out such negotiations according to the principles of FPIC [11].

Studies suggest that a benefit-sharing agreement can be successful where it can be integrated and supported by local, regional or national government and complements existing development plans [16]. However, in some cases a less centralised approach can ensure greater empowerment of communities and more effective local-level benefit sharing [8]. Benefit sharing within a community is also important, as the poorest and most vulnerable may not be able to take advantage of opportunities, such as jobs, that arise from an agreement [51,59]. Communities also need to be able to agree—at least to some degree—amongst themselves what position to take in relation to a proposed development. They may prepare in advance for negotiations by developing their own 'community protocols'. These are documents prepared by the community, often with assistance from appropriate civil society organisations, which articulate the community's vision and their agreed ground rules for the ways in which project proponents should engage with them [60,65].

In the Arctic context, scholars have observed a lack of guidance from key institutions such as the Arctic Council Sustainable Development Working Group [66], and while there is a lot of guidance from industry associations and others, communities and practitioners often need help to negotiate the mass of guidance and adapt it for local contexts. Companies frequently struggle due to the lack of a quantitative standard to measure the share in the benefits of a project that 'should' be directed towards communities, or to assess the fairness of benefit-sharing arrangements. An IFC-commissioned report [59] (p. 63) observes that: 'Legitimate and reasonable arrangements are arrived at through negotiation between the project, the government and the community over time', while '[s]uccess depends on inclusive, respectful and transparent processes'. Tysiachniouk and Petrov prefer to assess their benefit-sharing models in terms of both 'procedural' and 'distributional' fairness [8], an approach followed by others when assessing the social licence to operate in the mining sector, which is influenced greatly by benefit sharing [41]. Project-level grievance mechanisms can be an effective way to assess

the effectiveness of a benefit-sharing arrangement, alongside surveys and third-party monitoring, and various tools such as measuring the 'social return on investment' (SROI) [40,64,67].

This paper explores the standards and guidance that regulate and shape benefit sharing as it relates to the extractive industries, and some of the different ways that benefit sharing has been implemented in practice in the Arctic and sub-Arctic. In particular, the paper explores the extent to which standards and practice incorporate the Indigenous right to 'determine and develop priorities and strategies' for development, identifying this as a key gap in current analysis and practice relating to benefit sharing. In line with Anaya [11], the paper concludes that the vast majority of efforts by governments and industry to share the benefits of extractive industry development with local, and particularly Indigenous, communities remain entrenched within with the prevailing 'extractivist' resource development model, which is inherently biased towards less than equitable outcomes for Indigenous and local communities. The discussion section points to ways that both scholars and practitioners might approach benefit sharing in a way that is strategically more resilient to social risks, while also more adequately respecting Indigenous rights and tackling inequities in resource development.

2. Materials and Methods

This is primarily a desk-based analysis of international standards and guidance and their implementation, along with current literature on benefit sharing, particularly as it relates to Arctic and sub-Arctic extractive industry projects. This includes analysis of the texts of international standards, national legislation and regulations in the relevant countries, and publicly available materials from company, government and civil society websites, academic journal articles, popular publications and the media. The findings have been supplemented by interviews and email exchanges with key stakeholders. The research has also been informed by ethnographic field research in Russia [68] and Norway [55] between 2013 and 2016, although fieldwork does not provide the bulk of the material on which this article is based.

The field work involved semi-structured interviews, group meetings and informal discussions with local residents, civil society organizations, government officials, company representatives and academics. In Norway, a total of 26 qualitative interviews were held during two 7–10-day visits in 2015 and 2016, relating to a proposed mine site close to the Sami village of Guovdageaidnu (Kautokeino), northern Norway. In Russia, 33 interviews were carried out during three 10–15-day visits to the north of the Komi Republic in November 2013, March 2014 and June 2015, relating to the oil and gas industry, which is dominant in that area and affects several communities of Indigenous Komi people. Prior field research has also been carried out on extractive industry development in Greenland [69] and Sakhalin Island in the Russian Far East [70]. In Russia, field work was carried out in Russian; in Norway and Greenland, it was carried out in English, with interpretation where required.

For all field work, handwritten notes were taken during interviews and meetings, and were subsequently typed up and coded for the analysis, so as to identify recurring themes. The interviews were supplemented (and triangulated) by participant observation during the field work. The desk-based analysis has continued since the field visits and allows for constant updating in a context that is highly dynamic across the Arctic and sub-Arctic region.

3. Results

This section seeks to clarify some of the requirements of international legal instruments and industry standards pertaining to benefit sharing, while also highlighting some of the recommendations from relevant guidance documents and legal commentaries, which are commonly accepted as 'good practice'.

The analysis is divided into four sections. Section 3.1 outlines the requirements of four significant international instruments that frame state obligations. The International Labour Organisation (ILO) Convention 169 on Indigenous and Tribal Peoples (ILO 169) (1989) is legally binding on the 23 countries that have ratified it, including Norway and the Kingdom of Denmark among the Arctic states. The UN

Declaration on the Rights of Indigenous Peoples (UNDRIP) (2007) is not legally binding, but is highly influential—at least rhetorically—as a UN instrument, while some elements have been incorporated into national legislation and have become customary international law [71]. UNDRIP was adopted in 2007 by a majority of 144 states, with four votes against it at the time, including Canada and the United States (which have now endorsed it), and 11 abstentions (including Russia, which has not changed its position).

Two further instruments are also considered, due to their relevance to the arguments in this paper. The UN Economic Commission for Europe (UNECE)'s Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998) (the Aarhus Convention) has been ratified by Finland, Iceland, Norway, Sweden and Denmark (but not Greenland), and has relevance to public participation in strategic planning related to the environment. All Arctic states except the United States are parties to the Convention on Biological Diversity (CBD) (1992), which sets out important principles for benefit sharing arising from the utilization of genetic resources. The US has signed but not ratified the CBD (see Section 3.1). This analysis does not include other instruments that are also relevant to the extractive industries, such as the OECD Guidelines for Multinational Enterprises and the UN Declaration on Business and Human Rights, which the author has analysed in depth elsewhere [72].

Section 3.2 outlines several key provisions of standards established by international financial institutions, industry associations and other industry players, relating to benefit sharing. These are significant not only in those situations in which they are directly applied, but also in establishing a benchmark for industry-wide international good practice. Section 3.3 focuses specifically on the notion of 'Indigenous control' within resource development as articulated by the then-UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya; this articulation lies at the core of this paper's arguments.

In Section 3.4, three Arctic countries—Norway, Russia and Canada—are highlighted for comparison regarding the way in which benefit sharing is managed in the context of extractive industry development on Indigenous peoples' lands. Norway has ratified ILO 169 and the CBD and has endorsed UNDRIP. It is a small country with well-developed democratic traditions, and while there is a strong central government influence over its resource policy, it is open to public debate and consultation, including with the Indigenous Sami population [15,72]. It also has a strong welfare state which provides support that Indigenous groups in other countries might seek from benefit-sharing agreements. At the same time, Norway has also been criticized for its lack of attention to Sami rights in some cases, while Sami involvement in strategic-level decision-making is also lacking [73,74].

In contrast to Norway, the Russian Federation—a vast country with a much less democratic heritage—has not ratified ILO 169 and abstained from voting on UNDRIP (and has still not endorsed it), although it is a signatory to the CBD. Russia's federal structure allows for regional governments to develop their own approaches to benefit sharing between extractive industry projects and Indigenous communities, which has resulted in a widespread practice of negotiating benefit-sharing agreements [2,3,5]. The role of international companies and international financial institutions has also had a significant influence on the way that benefit sharing is practiced with Indigenous communities in the context of international extractive industry projects in Russia [4,5,25].

People frequently look to North America for models of benefit sharing in which Indigenous peoples take a more proactive role. Canada is a signatory to the CBD, but has not ratified ILO 169 and initially voted against approving UNDRIP. Since endorsing UNDRIP in 2010, Canada has been struggling to fully implement it—largely because of the challenges posed by FPIC [75,76]. While Canada has no federal legal requirement for benefit-sharing agreements, the practice of signing such agreements is widespread [7,56,57]. Other forms of benefit sharing include Aboriginal development corporations and proactive efforts by companies to generate job and business opportunities for Indigenous entrepreneurs [24] (see Section 3.4).

3.1. State Obligations: International Hard and Soft Law Instruments

This section considers international hard and soft law instruments that define state obligations relevant to benefit sharing. The term 'hard law' refers to legally binding instruments such as ILO 169, the Aarhus Convention and the CBD. 'Soft law' refers to non-binding legal instruments, such as UNDRIP. International instruments do not clarify the issue of benefit sharing to a great extent, especially in comparison to the related topics of consultation and participation [1,77]. Nonetheless, Indigenous rights instruments expand on the rights to self-determination, property, the means of subsistence and non-discrimination, and they articulate key principles that have direct relevance to the process of benefit sharing in extractive industry projects that take place on Indigenous peoples' lands.

In the context of resource development, Article 15 of ILO 169 requires governments to ensure that Indigenous peoples 'wherever possible participate in the benefits of such activities'. Article 7 underscores a key right of Indigenous peoples (as a feature of self-determination), which is to have a determining influence on development planning that affects them directly, including at the strategic level of plans and programmes, while governments have the responsibility to ensure—in collaboration with the Indigenous peoples concerned—that these planning processes prioritise the wellbeing of those peoples:

> 7(1) The peoples concerned shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands they occupy or otherwise use, and to exercise control, to the extent possible, over their own economic, social and cultural development. In addition, they shall participate in the formulation, implementation and evaluation of plans and programmes for national and regional development which may affect them directly.
>
> 7(2) The improvement of the conditions of life and work and levels of health and education of the peoples concerned, with their participation and co-operation, shall be a matter of priority in plans for the overall economic development of areas they inhabit. Special projects for development of the areas in question shall also be so designed as to promote such improvement.

UNDRIP does not refer to benefit sharing as such, but like ILO 169, Article 21(1), underscores Indigenous peoples' right to improvement of their living and working conditions:

> Indigenous peoples have the right, without discrimination, to the improvement of their economic and social conditions, including, inter alia, in the areas of education, employment, vocational training and retraining, housing, sanitation, health and social security.

Article 21(2) obliges states to 'take effective measures and, where appropriate, special measures to ensure continuing improvement of their economic and social conditions'. Article 32(1) of UNDRIP also confirms Indigenous peoples' right to influence strategic-level decision-making:

> Indigenous peoples have the right to determine and develop priorities and strategies for the development and use of their lands or territories and other resources.

This right is reinforced in Article 32(2), which obliges states to consult and co-operate with Indigenous peoples in order to obtain their FPIC prior to the approval of projects affecting their lands and resources.

In some cases, instruments that do not specifically protect Indigenous rights may also provide opportunities for influence over strategic planning. For instance, according to Articles 7 and 8 of the Aarhus Convention, public authorities are obliged to seek public participation in decision-making during the preparation of plans, programmes, policies and regulations that relate to the environment, which, in the case of resource development, may also include a component that regulates benefit-sharing [78].

The CBD)sets out key principles for the 'fair and equitable sharing of benefits' arising from the utilization of genetic resources and of traditional knowledge that relates to the conservation and sustainable use of biological diversity. The related Nagoya Protocol on Access to Genetic Resources and Equitable Sharing of Benefits Arising from their Utilization (2010) sets out obligations relating, inter alia, to FPIC. These two instruments have made a considerable contribution to the development of benefit-sharing norms and understandings, and the norms are increasingly referred to in extractive industry contexts. In 2004, the Secretariat to the CBD approved the Akwe: Kon voluntary guidelines for the conduct of cultural, environmental and social impact assessment regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities. Clause 46 of the voluntary guidelines states:

> Proposed developments on sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities should ensure that tangible benefits accrue to such communities, such as payment for environmental services, job creation within safe and hazard-free working environments, viable revenue from the levying of appropriate fees, access to markets and diversification of income-generating (economic) opportunities for small and medium-sized businesses. In accordance with national legislation or relevant national regulations, indigenous and local communities should be involved in the financial auditing processes of the developments in which they participate to ensure that the resources invested are used effectively.

The Akwe: Kon Guidelines are now widely taken into account in extractive industry contexts. They have been used by Indigenous peoples seeking to protect their rights in the context of extractive industry development, and they are recognized as best practice in the 2016 OECD Due Diligence Guidance for Meaningful Stakeholder Engagement in the Extractive Sector [79].

3.2. Company-Focused Standards and Initiatives

The activities of extractive industry companies are regulated by a combination of government regulation and industry standards. In some jurisdictions with weak government regulation—for instance in Russia—some of the more progressive approaches to consultation and benefit-sharing with Indigenous communities have been driven by the project's obligation to meet the requirements of project finance, as established by international financial institutions. A key standard setter in this field is the International Finance Corporation (IFC), the private sector lending arm of the World Bank Group.

The Environmental and Social Performance Standards (2012) of the IFC require the client—a company borrowing money from the IFC—to engage the local community in discussions around 'sharing development benefits and opportunities' (Performance Standard 1). Where Indigenous peoples are affected, clients of the IFC are required to follow the specific requirements of Performance Standard (PS) 7 on Indigenous Peoples. PS7 states that, where adverse impacts are unavoidable, clients should develop an Indigenous Peoples' Plan, with the informed consultation and participation of the Indigenous peoples. According to PS7(14), '[i]f the client proposes to locate a project on, or commercially develop natural resources on lands traditionally owned by, or under the customary use of, Indigenous Peoples, and adverse impacts can be expected,' the client is required to take a number of steps, including:

> Ensuring fair and equitable sharing of benefits associated with project usage of the resources where the client intends to utilize natural resources that are central to the identity and livelihood of Affected Communities of Indigenous People and their usage thereof exacerbates livelihood risk.

This is listed under 'Circumstances requiring free prior and informed consent'. Thus, the benefit sharing arrangements represent an integral part of an FPIC process. PS7(18) states that the client, together with the affected Indigenous community, will identify 'opportunities for culturally appropriate

and sustainable development benefits' and will ensure 'the timely and equitable delivery of the agreed measures'. PS7(19) states that benefit sharing will 'take account of the laws, institutions and customs of these communities, as well as their level of interaction with mainstream society'. PS7(20) continues:

> Various factors including, but not limited to, the nature of the project, the project context and the vulnerability of the Affected Communities of Indigenous Peoples will determine how these communities should benefit from the project. Identified opportunities should aim to address the goals and preferences of the Indigenous Peoples including improving their standard of living and livelihoods in a culturally appropriate manner, and to foster the long-term sustainability of the natural resources on which they depend.

While these are positive developments in industry standards, they still tend to link benefit sharing with negative project impacts, rather than acknowledging Indigenous peoples' right to share in the benefits of resource extraction from their lands whether or not they also have to experience negative effects from these activities. Moreover, the challenge of defining whether or not a community can be considered 'Indigenous,' thus triggering the relevant performance standard, has still not been fully resolved by companies and international financial institutions (see Section 4).

The 94 financial institutions which have signed up to the Equator Principles are obliged to follow the IFC Performance Standards in the case of large-scale projects (more than 10 million USD) in countries where national legal and regulatory regimes are deemed to have insufficient safeguards (of the Arctic states this is only Russia). In projects that affect Indigenous peoples, clients of Equator Principles Financial Institutions are required to follow IFC Performance Standard 7. Other international financial institutions have adopted similar ethical frameworks to the IFC, according to which they make lending decisions, including the European Bank for Reconstruction and Development (EBRD), which focuses on Central and Eastern Europe, Russia and Central Asia. As of the date that this article was submitted, the EBRD's revised performance requirements were undergoing review and public consultation.

Of course, not all extractive industry projects use project finance from international financial institutions. Other standards have been developed for institutional investors (e.g., the Principles for Responsible Investment) and export-credit agencies (e.g., the OECD Common Approaches). Many companies are also involved in voluntary membership initiatives, such as the UN Global Compact, or various industry associations (see below). However, many companies are self-financing, including state-owned companies, and are not obliged to adhere to international standards, only to the legal framework of the countries in which they operate. In the case of joint ventures (e.g., between a multinational corporation and a state-owned company), the policies and standards applicable to the project in question (over and above national law) need to be negotiated and agreed between the partners.

Industry associations have made a significant contribution to standard-setting. The International Council on Mining and Metals (ICMM), for instance, has 27 member companies, who are obliged as a condition of membership to adhere to and report on ICMM's Principles and Position Statements, which themselves can be viewed as an agreed industry standard for good international practice. In line with the ICMM Position Statement on Indigenous Peoples and Mining (2013), ICMM members commit to '[e]ngage with potentially impacted Indigenous Peoples with the [objective of] ensuring sustainable benefits and opportunities for Indigenous Peoples through the development of mining and metals projects' (Commitment 1). ICMM's requirements for benefit sharing do not only relate to Indigenous communities, and it offers a range of guidance documents and tool kits that cover benefit sharing and measurement of socio-economic impacts of mining projects [67,80–82]. The oil and gas industry association IPIECA, which has 35 member companies, has produced (non-binding) guidance that represents industry consensus around good practice as it is developed by working groups of industry experts from IPIECA member companies. IPIECA has produced, inter alia, guidance on social investment [44] and Indigenous peoples [83]. Individual companies have also pushed the

boundaries of good practice, consolidating this in published reports, for instance Rio Tinto's report 'Why agreements matter' [84]; setting precedents for engagement and enterprise support, e.g., Suncor in Alberta [24]; or they have been forced to innovate by new government regulation in frontier resource development contexts, as was the case for Tullow in Greenland [69].

Further relevant guidance has been produced by practitioners, researchers and foundations, aimed at companies, governments, communities, consultants and negotiators [40,85,86]. Of particular interest to benefit-sharing debates is the guidance that helps to understand effectiveness factors and measure the socio-economic impacts of an extractive industry project [64,87]. The IFC guidance highlights the importance of defining up front 'what success will look like in the eyes of the community, the company, local government representatives and other relevant stakeholders' [44]. This is in line with good practice around FPIC, which entails agreement between the proponent and the community up front regarding what consent will look like, who is to take part in the negotiations, how they will take place and how they will be monitored [60,63]. In 2014, the indigenous rights NGO, First Peoples Worldwide developed their Indigenous Rights Risk Report, a risk assessment tool, in response to demand from investors for better ways to identify, manage, and mitigate Indigenous rights risks [76]. Under 'social investments' in Indigenous communities, the highest level of risk is posed when 'There is no evidence of social investments in Indigenous communities', while the lowest risk rating can be achieved where: 'There are social investments in Indigenous communities; there is full or nearly full local control over design and implementation; benefits accrue to a broad cross-section of community members, and will be sustained beyond the project's life cycle' [76] (p. 22).

3.3. Indigenous Control: Exploring James Anaya's 'Preferred Model' of Resource Development

In his former role as UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya wrote a UN-endorsed commentary on Indigenous rights and extractive industries in response to the launch of the UN Guiding Principles on Business and Human Rights (2011). According to Anaya, the standard scenario or 'prevailing' model of resource extraction is when states or third party business enterprises promote natural resource extraction in Indigenous territories, 'with the affected indigenous peoples at best being offered benefits in the form of jobs or community development projects that typically pale in economic value in comparison to profits gained by the corporation' [11] (p. 3). Anaya articulates a 'preferred' model involving resource extraction through Indigenous peoples' own initiatives and enterprises (as long as environmental risks are minimised). He outlines this model as follows, with reference to UNDRIP, Article 32(1) [11] (p. 5):

> As part of their right to self-determination, 'indigenous peoples have the right to determine priorities and strategies for the development or use of their lands and territories'. This right necessarily implies a right of indigenous peoples to pursue their own initiatives for resource extraction within their territories if they so choose. In cases in which indigenous peoples retain ownership of all the resources, including mineral and other subsurface resources, within their lands, ownership of the resources naturally includes the right to extract and develop them. But even where the State claims ownership of subsurface or other resources under domestic law, indigenous peoples have the right to pursue their own initiatives for extraction and development of natural resources within their territories, at least under the terms generally permitted by the State for others.

Anaya also states clearly that Indigenous peoples have the right to decline to pursue such developments, and to decline to be consulted on such developments. He refers to the rights to freedom of expression and to participation, which are established in international human rights law, according to which Indigenous individuals and peoples have the right to oppose extractive projects. He asserts the right to freedom from reprisals and violence in response to such protests, with reference to the UN Guiding Principles on Business and Human Rights and the Voluntary Principles on Security and Human Rights. He also states that Indigenous peoples should be free from pressure and coercion to

accept extractive projects or to engage in consultation; while affirming the principles of FPIC, which he terms the 'general rule' for decision-making relating to extractive projects within indigenous territories.

Anaya argues that the 'preferred' model is 'by its very nature more conducive to the exercise of indigenous peoples' rights to self-determination, lands and resources, culturally appropriate development and related rights' [11] (pp. 4–5). Anaya also states that, in the light of Indigenous peoples' claims to land and resources, and their stewardship role in safeguarding these for future generations, 'recognising a priority for indigenous peoples for the extraction of resources within their territories is a matter of equity if not of entitlement' [11] (p. 6). Further, he argues that it is also a matter of good practice, since resource extraction by Indigenous peoples themselves maximises the possibility that it will be undertaken with respect for their rights and interests. As such, this type of development will reduce the risk of instability in such development, while profits are also more likely to stay within the country, and capacity enhancement will benefit local people.

In practice, Anaya observes that Indigenous peoples are frequently marginalised in resource development. He identifies strategic planning as a critical area for participation, but observes that Indigenous peoples are very rarely involved at this stage of development planning in resource sectors, and rarely have the opportunity to determine the direction of extractive industry projects. He also observes that many Indigenous people currently lack the required business and technical skills, strategic partnerships and start-up investment, and advocates government assistance to those Indigenous people who may want to pursue such business opportunities 'in contrast to the alternative of seeing the natural resources within their territories being extracted under the control of others' [11] (p. 6). To this end, Anaya proposes that governments (and where appropriate international donor agencies) support programmes of grants, loans, tax breaks, advisory services, skills training and scholarships, as well as preferential licencing and permitting for Indigenous peoples.

3.4. Implementing Norms in Practice

In this section, benefit sharing practices in three Arctic countries are compared in the context of extractive industry development on Indigenous peoples' lands. In line with the analysis of the standards presented above, benefit sharing is seen within the wider context of the development model for resource extraction. A key question is whether or not this development model grants the space for Indigenous peoples to 'determine development priorities' through involvement in strategic planning, as an essential foundation for equitable benefit sharing.

Since the 1970s, Norway has become one of the leading countries for local content policy in its (offshore) oil and gas sector, which has stimulated the growth of a globally competitive industry; and it is also lauded for the success of its sovereign wealth fund [15,88]. There is a—sometimes powerful—role for local government in decision-making on mining projects, which has empowered one Sami municipality to reject a gold mining project (see below). However, the role of municipalities is seen by some as a source of weakness or confusion in decision-making—and certainly as an area ripe for policy review [10,89]. Norway has also been criticised in relation to its tax regime that limits the flow of project benefits to local communities; the politicization of environmental and mining issues; and the lack of success in translating public consultation into meaningful public involvement in resource-related decision-making [90–92]. Moreover, resource extraction is still practiced within an overall extractivist model of development in Norway (as elsewhere). In the case of the Nussir copper project in northern Norway, while the company was given credit for its inclusive approach and concern for the local population, some local stakeholders felt there was little space for debate about 'the multiple concerns about values other than those measurable through economic growth' [89].

Norway has also been criticised for its lack of attention to Indigenous rights, despite having legislation and institutions to support Sami rights [73,74]. This includes the ability of Sami institutions to influence strategic-level decisions about resource development. While Norway's Minerals Act (2009) has undergone consultation with the Sami Parliament, the lack of a specific clause on benefit sharing for the Sami is one of several reasons why the Sami Parliament has not approved it [72,93]. Mining

activities need to secure certain approvals from the local authorities and land-owners early in the project cycle [93]. However, in Norway's northern Finnmark county where many of the Sami live, the official landowner is the Finnmark Estate, which collects the 'landowner fee' on behalf of the people of Finnmark [94], while mining companies can still obtain exploration licences for lands used by Sami reindeer herders, without engaging in advance in a process of meaningful consultation or FPIC with the local herding communities [55].

In 2012, in Sami-dominated Guovdageainnu (or Kautokeino) municipality, a reindeer-herding region of Finnmark County, the elected municipal council voted (narrowly—reflecting the wider community split) in favour of protecting reindeer herding livelihoods rather than allowing an environmental impact assessment to go ahead that could potentially give the green light for the Biedjovaggi gold mine to be re-opened in the area [94]. It was not Norway's commitments under ILO 169, but its decentralized decision-making arrangements (under the Norwegian Planning and Building Act) which allowed this to happen [93]. The project proponent, Swedish company Arctic Gold, challenged the legality of the 2012 vote, offered a one-off payment of around 2 million GBP to the community, and drafted a form of benefit-sharing agreement (to implement if the project went ahead), but in 2013, the municipal council again voted (narrowly) against the project [93,94]. Following municipal elections in September 2015, the newly elected council immediately placed a four-year moratorium (until the next elections) on discussions about Biedjovaggi, in order to focus on other aspects of socio-economic development [55]. Magnussen and Dale suggest viewing this decision as the evaluation not only of the potential economic benefits of the mining project, but also aspects of the local way of life that are valued in non-monetary ways—such as 'being Sami', living within an undisturbed landscape, and resisting political influence from Oslo [93]. However, the municipality did not go so far as to exclude the possibility of mining from the local area plan, and with the next round of municipal elections the mining question could arise once more.

In Russia, there is no national regulation determining how companies ought to share benefits with local and Indigenous communities, although the rights of (most) northern Indigenous peoples are protected by relevant legislation, including the right to set up a tax-free *obschina* (or commune) to protect their legal rights to traditionally used lands, which can form the basis to claim compensation [95,96]. Greater centralisation under President Putin, along with revisions to the federal law 'On subsurface resources', have reduced the amount of control that Russia's resource-rich regions have over revenue distribution. The regions benefit from income taxes and some land taxes, but the federal mineral tax goes to Moscow. This arrangement means that compensation and companies' social investment projects take on greater significance for local people [49].

Nonetheless, regional governments in Russia's Arctic and Far Eastern regions with significant populations of Indigenous peoples, have developed their own regulations governing extractive industry activities, including benefit sharing [5]. Some require companies to negotiate an agreement with local Indigenous resource users prior to securing their licence to extract resources, with or without regional government participation [2,97]. In some cases, the lack of government involvement in some of these agreements has been seen as a weakness [5]. In other cases, as in Russia's Komi Republic, a shift away from centralized agreement-making towards greater control by local Indigenous communities has led to the strengthening of local institutions and greater economic independence for Indigenous resource-user groups [8,49].

The role of international companies and international financial institutions has also had an effect on the way that benefit sharing is practiced with Indigenous communities in the Russian extractive industry context. On Sakhalin Island, in the Russian Far East, for instance, the Sakhalin-2 offshore oil and gas project sought to secure project finance from the European Bank for Reconstruction and Development (EBRD) for Phase 2 of the project. In 2005, following protests by the local Indigenous resource-users, the EBRD asked the proponent company Sakhalin Energy to prepare and implement an Indigenous peoples' plan [98]. The Sakhalin Indigenous Minorities Development Plan (SIMDP) was launched in 2006, with Indigenous governance structures in place, and has been running since

then, with later involvement of the regional government and with plans employing an FPIC process to reach agreement [4,50,99]. The Yamal liquefied natural gas (LNG) project in northern Russia, carried out a 4-year FPIC process with local Indigenous communities, which ended in 2014 with the signing of FPIC declarations and agreement on an Indigenous Peoples' Development Plan that included support for local Indigenous populations [77,100,101]. This was largely in response to the requirements of the Equator Principles financial institutions lending to the project.

Canada has considerable experience of inclusive resource development models and benefit sharing with Indigenous communities, and is still viewed as a leader in this area, despite controversies surrounding the implementation of UNDRIP in the country [102]. In their study of Canada's difficult relationship with UNDRIP, Favel and Coates challenge the heavy emphasis on FPIC in public debates, which they feel obscures other UNDRIP imperatives such as ensuring that Aboriginal communities meet the living standards of the wider Canadian population, which, they argue, can sometimes be achieved through equitable and respectful partnerships with extractive companies [75].

Where land claims have been settled, First Nations may own surface and subsurface rights within the land claim settlement area, although some land claims negotiations have lasted many years and remain locked in disagreement over land and resource-based benefit sharing [16,103,104]. Canada has no federal legal requirement for benefit-sharing agreements, but the practice of signing such agreements is widespread [56,60]. As part of the Nunavut Land Claims Agreement, for instance, resource developers are obliged to negotiate Impact and Benefit Agreements (IBAs) with the regional Inuit associations, as a condition of the licence. A study of the use of IBAs in Nunavut concluded that they are an effective way to ensure that industrial developers commit to benefit sharing with local communities, but that IBAs would be more equitable and have a greater sustainability impact if decision-making were devolved more to the beneficiaries [105]. Another model is that of the Aboriginal development corporation: these are community-based, collectively owned enterprises, many of which have become significant economic players. Many have benefited from funds from modern treaties and legal settlements, revenue from resource activity and arrangements with oil-sands companies pledging benefits to Aboriginal enterprises, such as priority access on bids [24].

Yet, despite efforts to ensure greater Indigenous involvement in resource development, observers note that underlying issues of poverty and inequity persist. Irlbacher-Fox notes that land-claim negotiations in Canada cannot be separated from the colonial heritage of the government–Aboriginal relationship, observing that while communities may have access to the procedures of participation, the historical context and forms of communication within negotiation forums mean they frequently cannot influence the thinking of the people they are negotiating with [103]. Meanwhile, in 2016, the Mining Association of Canada (MAC) issued a Position Statement on Government Resource Revenue Sharing between the Crown and Aboriginal Communities [103]. It observes that despite the existence of 265 active agreements between mining companies and Aboriginal communities across Canada, as well as joint ventures, collaborative planning efforts, training and employment initiatives, there is still a need to address outstanding issues of poverty and ensure greater consistency in the flow of benefits. MAC suggests that government resource revenue sharing with Aboriginal communities—as distinct from bilateral arrangements between companies and communities—could provide these communities with 'greater opportunities to participate in the mineral exploration and mining industry and significantly contribute to the elimination of socio-economic disparities between Aboriginal and non-Aboriginal Canadians' [106] (p. 2).

4. Discussion

Different models of benefit sharing—and individual elements within those models—are distinguished largely by the degree to which the state, companies and local communities are involved in and control the distribution of benefits, while other drivers include the role of international finance and global civil society networks. Key types of benefit-sharing and related activities are summarized in

Table 1, which offers a typology based on existing typologies and categorizations [8,11,44,45], drawing on the standards and practices analysed in Section 3.

Table 1. Elements of benefit-sharing models for local and Indigenous communities.

Type of Model	Description
A. State-Controlled Benefit Sharing	
Taxation, revenue payments and revenue distribution	Governments have the responsibility to establish and enforce regulations, and there is increasing pressure for greater transparency of revenues paid to governments and how these are used. Companies bear their own responsibility for paying taxes, not avoiding them, and, where required, e.g., under the Extractive Industries Transparency Initiative (EITI), to report on what that they pay to governments.
Local content obligations	Targets for the hiring of local workers and procurement of local goods and services may be included in host government agreements with companies, and in some cases is legislated. Government-mandated local content is frequently interpreted as 'national' content, rather than targeting local and Indigenous communities.
Mandatory social investment	Social investment spending can be mandatory as part of a host government agreement or national legislation, whereby companies are required to invest in infrastructure programmes, such as road construction or health facilities, as a condition of their licence.
B. Voluntary Company-Led Initiatives	
Philanthropy	Companies may voluntarily engage in community spending in addition to their mandatory obligations under contracts and licences. Philanthropic support might include medical facilities, cultural or sports programmes, scholarships and environmental projects.
Strategic social investment	Increasingly companies seek to target their social investment spending on programmes designed to survive beyond the life of the industrial project and/or to create value for the industrial project. These might include micro-credit programmes, local livelihoods support programmes, skills training, enterprise development support, or conservation programmes.
C. Partnership Model	
Voluntary local content initiatives	Companies may develop partnership programmes based on voluntary targets and initiatives to train and bring in the local and Indigenous workforce to a project, with training and enterprise support linked to opportunities to secure employment or contracts, often with an element of preferential contracting. This may or may not form part of a wider benefit-sharing agreement.
Benefit-sharing agreements	Benefit-sharing agreements are negotiated directly with communities and may include cash payments, profit sharing, local hiring, skills development, education, cultural support and environmental protection. These are likely to be closely related to impact assessments, and may also provide the basis for a process of free, prior and informed consent (FPIC).
D. Indigenous Ownership and Control	
Indigenous ownership	Indigenous ownership might include Indigenous peoples' ownership of companies or equity shares in enterprises involved in extracting or processing resources or enterprises providing services to the industry. Opportunities can be enhanced through government support and preferential hiring and contracting.
Indigenous control	Indigenous control relates to Indigenous peoples' right to determine their own development priorities and strategies, and includes participation in strategic-level decision-making on resource-related policies, programmes and regulations, including resource mapping, zoning and land allocation, and processes of FPIC where appropriate.

The coverage of benefit sharing in international instruments frequently lacks clarity; there is no standard format or quantitative guidance on how to structure the distribution of benefits from a project; and there is no identified optimal ratio of involvement of public and private sector, as much will depend on the specific local context [8]. On the other hand, many guidance documents have been produced by standard-setters, industry guidance bodies, consultants and NGOs, while scholars have covered the area of benefit-sharing in some depth (see Section 3). Good practice can be identified, but

this is mostly presented in terms of processes and procedures to be carried out in the context of the prevailing 'extractivist' model of development [11,29]. A key finding from this research is that 'fair and equitable benefit sharing' needs to start by reassessing the wider development model and ensuring greater Indigenous peoples' involvement in strategic-level decision making and setting the rules of the game and related forms of communication and engagement.

This paper focuses primarily on Indigenous peoples and Indigenous rights. However, this discussion cannot ignore the fact that certain Indigenous peoples are arbitrarily excluded from rights because they are not officially recognized as being Indigenous, while other groups are not technically Indigenous but are nonetheless highly dependent on the land and resources of a particular place and therefore especially vulnerable to extractive industry activities. International financial institutions and companies struggle to accommodate those groups who may wish to claim Indigenous status in a project context, but who are not technically eligible to be considered 'Indigenous' and to trigger the relevant performance standard. This can be a genuine dilemma in a specific project context, but it can also be a distraction from the priority of protecting the rights and addressing the needs of vulnerable local communities. While equitable benefit sharing is considered to be good practice in both Indigenous and non-Indigenous communities, Indigenous peoples are entitled to greater participation in decision-making and to benefit sharing arrangements that are part of a wider process of FPIC. It seems inappropriate to deny this opportunity to certain vulnerable, resource-dependent communities simply due to a question of definition. More guidance is needed for practitioners to understand how to tackle this question more sensitively. 'Vulnerability' is one possible entry point, but the vulnerability of Indigenous communities is an additional consideration to their right to self-determination and the implications of that in a project context. Thus self-determination and vulnerability both need to be addressed appropriately.

The Biedjovaggi case would indicate that the Norwegian government is not fully meeting its obligations under ILO 169 or UNDRIP by not involving the Sami enough in decisions that directly relate to them at a strategically early point in the planning process. This approach not only threatens Indigenous livelihoods, it also puts companies at financial risk if they invest considerable amounts of money in exploration activities, only to discover that the local community is opposed to the activity and may have the power to halt it. In the Biedjovaggi case, this resulted in the Swedish proponent company making multiple forceful attempts to convince the municipality to agree to the project, even after it had refused on two occasions. Scholars have also drawn attention to the need to evaluate such cases not only in economic terms, but in terms of those non-economic aspects of life that are valued by local and Indigenous people.

In Russia, three key drivers have particularly influenced benefit sharing models in particular project contexts—regional government regulation, international scrutiny and local public protest. International governance and Indigenous rights principles have reached outlying regions of Russia via international projects, which have even incorporated FPIC into their procedures. Nonetheless, these projects are still implemented within the 'extractivist' model of resource development. By its very nature, the promotion of meaningful stakeholder engagement and FPIC by multinational corporations and international financial institutions comes too late to ensure adequate involvement of Indigenous peoples in early strategic-level decisions. The regional governments perhaps have the strongest opportunity to do so, by including Indigenous representatives in planning processes and development of legislation. This does take place in some cases and should be studied further [5].

In Canada, while the practice of proponent-Indigenous agreement making is widespread, and despite great progress in developing Indigenous-owned and run businesses for the extractive industries, there is still an important role for the government in benefit sharing in addition to the partnerships and agreements between companies and Aboriginal communities. This would reflect government obligations under UNDRIP to ensure continuing improvement of Indigenous peoples' economic and social conditions. Yet the government role is frequently set within an extractivist paradigm influenced by the colonial history, which undermines opportunities for equitable outcomes from negotiations.

Where Aboriginal Canadians have secured greater control of local government, as in Nunavut, they still tend to promote an extractivist model of resource development and there is a risk that power becomes concentrated in the hands of the governing elite, while local resource users remain marginalized. This challenge of ensuring equity through devolved decision-making within an already devolved Indigenous governance structure is also present elsewhere, notably in Greenland [69,71]. Therefore the level and nature of Indigenous representation becomes a critical aspect of Indigenous rights implementation and equitable benefit sharing in practice.

5. Conclusions

This article has explored standards, principles and practice related to benefit sharing in the context of extractive industry development on Indigenous peoples' lands, with the aim of identifying what models or elements of particular models serve to ensure greater equity and respect for Indigenous rights. All the case studies discussed in Section 3.4 are embedded within an extractivist development model, which James Anaya identified as the 'prevailing model' of resource development, and this can be said of most experience of benefit sharing in the extractive industries, even the most progressive. From the outset of developments, the extractivist bias in priorities and mindsets tends to compromise the ability of Indigenous resource users to benefit in an equitable manner from extractive industry development on their lands. In particular, the lack of involvement of Indigenous peoples in making strategic decisions about extractive industry development on their lands—decisions including the allocation of land for extractive industry activities and the granting of exploration licences—undermines the possibilities for equitable development outcomes.

It is likely that the extractivist model of resource development will continue to prevail for some time to come, although increasing awareness of the potential for Anaya's 'preferred' model may lead to wider innovation in that direction. This would more closely reflect government obligations under ILO 169 and UNDRIP to ensure continuing improvement of Indigenous peoples' economic and social conditions and to ensure that Indigenous peoples are able to determine priorities and strategies for development that takes place on their lands; and to ensure 'fair and equitable sharing of benefits' arising from resource development, in line with the principles established by the CBD, the Nagoya Protocol and the Akwe:Kon Guidelines.

While it may be an unfamiliar development paradigm for many governments, the 'preferred' model is already being implemented, at least partially, in some Arctic and sub-Arctic contexts. This includes efforts by the public and private sectors, including policy incentives and support for Indigenous enterprise development, preferential contracting, and embedding the principle of FPIC in decision-making structures and processes. Corporate approaches, such as those implemented by multinational corporations in response to the requirements of international financial institutions, or by enterprises that are simply more in touch with the communities in which they operate, provide the opportunity to analyse the results and effectiveness of such approaches. This can lead to greater adoption by industry associations and individual companies, and within government regulation at the national and sub-national levels.

Greater participation of Indigenous peoples at the strategic level in extractive industry planning and programme development—to determine priorities for their own development—may also prove to be a more effective foundation for equitable benefit-sharing and a stronger social licence to operate for extractive projects, if they are to go ahead. This offers potential benefits to governments—through reduced risk of social unrest and opposition, and increased security and predictability for investors. This may require a longer time frame for developing the natural resources, and may also require some resource-rich lands to be set aside and not developed, as part of strategic zoning agreements with Indigenous representative institutions and local Indigenous landowners and land users. However, in the longer term it may prove to be a more effective, sustainable and stable development model.

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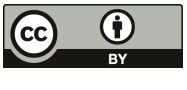

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Pipeline Neighbors: How Can We Avoid Conflicts?

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Abstract: In this article, I consider the various policies of oil and gas companies relating to Indigenous peoples of the Russian Federation. The analysis is based on field research in Northern Russian regions. Data for the analysis comprises: International standards, Russian laws, corporate codes, official regulations, and interviews with company employees and representatives of the Indigenous populations. The research methodology is based on the concept of legal pluralism as the coexistence of various legal regimes and the search for platforms of common interests. The goal of this article is to analyze policies on benefit sharing by assessing projects and programs adopted by various industrial companies according to the social and humanitarian prospects of their social acceptance. I consider the possibilities for Russian legislation to promote respecting Indigenous people's interests in the preparation of corporate sustainability reports.

Keywords: indigenous people; oil and gas companies; corporate social responsibility; Russian North; benefit sharing; legal regulation

1. Introduction

Achieving partnership between Indigenous peoples and industrial companies in the Russian North is important not only for the survival of such populations, but for operation of major economic sectors, and the social and economic development of the Arctic and regions of the Russian North. Today, awareness regarding mutual responsibility and mutual interest in the establishment of such new relations between companies and Indigenous communities is only beginning to arise. Of special importance to their relations with industrial companies are the consultations with Indigenous peoples, and their ability to say "no" to projects that violate their rights and legal interests. New international documents have been adopted that govern the processes I consider in this article; indeed in Russia the awareness of the need to address this problem is growing. Economic and sociological research focus much attention on the issues of compensation, and thus the distribution of company profits to society. In this article I focus on the non-material/non-financial aspects of mineral extractivism in areas inhabited by the Indigenous peoples of the Russian North, and on possible means of their regulation.

1.1. Main Themes, Objectives, and Methodology

The goal of this article is to analyze policies on benefit sharing. The major research questions are: How has the social climate in regions of industrial development changed over time? How has the experience of living next to each other—of living as neighbors—come to shape attitudes of both representatives of industrial companies and members of Indigenous communities towards monetary compensation?

The study is based on legal anthropology methods, which combine ethnographic field research with the analysis of national laws and internal corporate documents. The benchmark for comparison comprises international standards [1,2] and Russian standards for business and sustainable development [3,4]. As a framework I employ the concept of legal pluralism, which acknowledges the coexistence of various legal regimes [5,6]. It is this very coexistence that ensures a relatively peaceful

cohabitation, while domination or coercion by one party provokes conflicts. These approaches allow a more comprehensive consideration of all the actors involved in environmental management and highlight the opportunities for diverse regulations of the relations between Indigenous peoples and industrial companies.

The methodological approach of comparing the ideal and experienced legal order is useful for my work [7]. Since I focus on normative culture, my method incorporates an anthropological critique of legislation and corporate documentation. I have first collected and studied the documents and regulations, which lay out the rules of behavior for workers, and then, during field research, considered the extent to which these are lived out with respect to Indigenous people; they are experienced by the latter in everyday life.

So far, no country has created an ideal model of benefit sharing with regard to oil and gas production and impacted Indigenous communities. Research of the interrelationships between Arctic communities and industrial companies demonstrates, "Indigenous people seek jobs and income while not undermining opportunities for using local resources and have enduring nutritional, cultural and economic benefits." This tension reflects the definition of sustainable development and also self-determination and self-reliance of Indigenous people [8] (p. 122).

The academic and public discourse is increasingly acknowledging the need to study all environmental stakeholders and manage cultural diversity, especially in large federal states. A comparative study of benefit sharing issues associated with industrial development stresses, "the importance of communication, cooperation and consultation [...] This is crucial not only for Indigenous peoples—who need to be active partners from the beginning of access and benefit sharing initiatives, and to receive clear and honest information about projected benefits and risks—but also for governments, which have a responsibility to establish simple and clear information channels, to cooperate among themselves where resources or knowledge crosses national borders, and to establish transparent and fair consultation processes for the development of access and benefit sharing policies" [9] (p. 349). The former UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya, has discussed the interactions between Indigenous peoples and industrial companies. One of his reports is dedicated to the status of Indigenous peoples in the Russian Federation in the context of industrial development. Anaya noted: "In many instances agreements have been concluded for the development of natural resources on or near Indigenous lands, bringing some benefits to the Indigenous peoples concerned. However, a broader understanding of cooperation is called for: Rather than limiting the interaction between extractive industries and Indigenous people to compensation agreements, administrators should encourage ownership interest and profit-sharing in extractive industries, when Indigenous communities are so inclined. The federal government should establish reliable methods of monitoring the development of industrial projects . . . " [10]. So far, these recommendations have been mere suggestions for Russia.

The Indigenous peoples' level of involvement in resource co-management, decision making, obtaining compensations, and profit sharing is largely dependent on constitutional guarantees and land tenure security. In northern Canada, the interaction process is enshrined in the Constitution Act, 1982 and in the agreements with the federal government. Also, Indigenous peoples have had to advance their rights and interests through the Canadian courts. As a result, for example, a long-standing policy development process took place in the Northwest Territories of Canada regarding the construction of a pipeline in the Mackenzie valley. This led to the fact that "Indigenous peoples are major stakeholders in Mackenzie Gas Project. Aboriginal Pipeline Group expect to receive additional capacity, which will eventually increase its ownership percentage to 33.33%" [11] (pp. 108–109). One Indigenous leader said: "A pipeline down the Mackenzie Valley will . . . not destroy the land, but without some form of economic base we will surely destroy our people" [11] (p. 111).

The example of Alaska demonstrates the joint-stock model of profit sharing and the difficulties it has created for the social and economic development of local communities [12]. Researchers note: "As the scale of industrial development increases, however, costs to landscape, wildlife, subsistence

and cultural values can also increase while benefits from jobs and immediate income remain modest or even decline" [8] (p. 134).

Indigenous peoples give preference to working with local sustainable resources, usually seeing industrial development as a risky business with high expectations that cannot always be fulfilled. Therefore, benefit sharing may only mitigate the negative consequences of industrial development. In Russia, these practices look even more precarious, especially since industrial companies and government authorities practice benefit sharing primarily in the form of financial compensation.

In the past few years quite a number of papers on corporate policy have been published, including one by this author [4,13–15]. I approach the problem by looking for effective corporate and social policies in the Russian North as well as opportunities for legal regulation of benefit sharing. I will reflect on the fact that many oil and gas workers, who were formerly fly-in/fly-out employees, became local residents, and I will examine how this fact impacts benefit sharing. I will also consider who implements the policies of industrial companies and how.

1.2. Legal Regulation

In Russia, relations between Indigenous peoples and industrial companies are primarily regulated by constitutional and legal provisions in the special laws on rights of Indigenous peoples [16]. The Federal Law 'On the Guarantees of Rights of Numerically Small Indigenous Peoples in the Russian Federation' defines the right to compensation (collective and individual) as reimbursement for damages [17]. Unfortunately, these provisions are not incorporated in the legislation on resources, thus limiting their capacity to a large extent. Article 42 on profit distribution, which was incorporated in the first version of the Federal Law (1995) 'Subsoil Law', was abolished in a later stage. Federal Law 'Subsoil Law' (1995 edition) Article 42, "During the development of underground resources in the areas inhabited by small Indigenous peoples and ethnic groups payments to the budgets of the subjects of the Russian Federation shall be partly used for the social and economic development of these peoples and groups." [18]. Indigenous organizations and experts have for many years tried unsuccessfully to promote the protection of the Indigenous people's rights and to introduce corresponding amendments to this law. The Federal Law 'On Production-Sharing Agreements' guarantees reimbursement for damages to Indigenous peoples [19]. Article 7 of this law stipulates the responsibilities of investors operating within areas of traditional residence and economic activity of numerically small Indigenous populations to take measures to protect the latter's ancestral lands and traditional way of life and to appropriately compensate them. In 1994, Sakhalin Energy signed such an agreement to implement the Sakhalin-2 project. The same principle applied to Sakhalin-1 project (1995), implemented by Exxon Neftegas.

To a large extent the process of lawmaking at a Federal level was based on the legislative potential of the regions. So, for many of these regions this process of lawmaking was even more constructive then for those at the center. Nevertheless, legislation is not itself enough to protect Indigenous peoples [20].

In the Russian Federation, there are also 'Methods for Calculating the Scale of Damages', approved by a 2009 decree of a no-longer existing ministry, which are, nevertheless, still in place. This document has been criticized often for a number of reasons including the following two: (1) The methods only apply to legal entities, (2) the amount thus calculated may be less than the compensations the companies already paid. For instance, such criticism was made at a conference in Khanty-Mansiysk in 2018 [21]. Today the Federal Agency on Nationality Affairs and the Committee on Issues of Nationalities of the State Duma are working out new methods for calculating losses.

Insufficient legal regulation of issues concerning relations between Indigenous peoples and industrial companies, especially in relation to compensations and reimbursements for damages, as well as to minimization of negative consequences, leads to the necessity of considering corporate social responsibility standards [1,4].

2. Materials and Methods

The article is based on published research, academic literature, analysis of Russian legislation, and the empirical material that I collected in various regions of the Russian Arctic and Russian North. The fieldwork included participant observation and interviews with Indigenous residents, representatives of oil and gas extraction companies, and government authorities. The interviews were conducted in line with a specially developed guide aimed at revealing each interviewee's attitude to benefit sharing of oil and gas production. My key Indigenous informants were men and women aged 40–60 as well as youth living in close proximity to industrial development areas.

The article also draws on my experience as an expert on Indigenous peoples in the legislative assembly of the Russian Federation (2011–present). Every interview used in the article was conducted with free, previously informed consent.

One of the field work periods underpinning the article was conducted yearly between 1995 and 2000 in the Khanty-Mansi Autonomous Okrug, specifically in the city of Khanty-Mansiisk and in the villages of Surgutsky and Nizhnevartovsky regions, in Khanty and the Nenets camps, as well as among engineers and workers of the oil companies Lukoil-West Siberia and Surgutneftegas. In 2014, field work was carried out in both companies' headquarters in the cities of Kogalym and Surgut. Another field study was conducted in 2008–2012 in Yamalo-Nenets Autonomous Okrug, specifically in Yamalsky and Tazovsky regions and in the city of Salekhard, among various Nenets groups, as well as Gazprom and Lukoil employees. The next field work period was carried out in 2006, 2011, 2014, and 2019 in Sakhalin Oblast, namely in the city of Yuzhno-Sakhalinsk as well as in Nogliksky and Okhinsky regions. The study involved Indigenous inhabitants and local residents as well as Sakhalin Energy and Exxon Neftegas employees.

The article also makes use of the empirical material I collected in 2006 in the Northwest Territories of Canada during the public hearing on the Mackenzie Gas Project in the village of Inuvik (Scientific Research Licence # 14079N, Fale #12410684 Aurora Research Institute—Eurora College). In addition, the study draws on field data collected in 2018 while organizing a seminar in Bulun region (ulus) of the Sakha Republic (Yakutia).

The research topic requires establishing a relationship of trust between the researcher and the informants, which was ensured by my long-standing contacts in the field and the numerous phone consultations with my informants that followed the field stage of the study.

3. Results

3.1. How Oil Worker 'Migrants' became 'Neighbors' and What This Means for Indigenous Peoples

My research on this topic started in Khanty-Mansi Autonomous Okrug (KhMAO) in the 1990s; later I continued it in Yamal-Nenets Autonomous Okrug (YaNAO) and Sakhalin Oblast, which allowed me to observe the dynamics of company–community relations. At the early stage of industrial development, according to the interviews, Indigenous peoples were confident that presence of the arrived geologists, and later oil workers, is temporary, that they would work for a while and then return home, and that afterwards local life will return to its former state. At the same time, locals perceived newcomers as carriers of new information. They (especially, young people) liked how the latter sang guitar-strumming songs, handled cars, and shared stories. This process of acquaintance proved to be mutual. Back in 1920s some researchers wrote that, "without the reindeer and dogs, without an experienced native guide, our investigation in the Russian North and discoveries of new mining wealth would have ceased" [22]. In practice, in the absence of legal regulation and corporate social policy, the companies and Indigenous people were wary of one another, and relations were revolving mostly around a 'local–migrant' dilemma. During interviews recorded in KhMAO, the Khanty and Nenets often said that oil workers will leave, but the harm they have caused to the environment, to nature, in fact to the 'home' of the Indigenous people, will remain.

On the other hand, oil workers emphasized that this land has come to be a home for them: Their children live and study there and they are staying permanently in the newly built cities. The line was drawn between 'town people' and 'forest people'. In the 1990s, the Khanty, Mansi and Nenets started returning to their camps, securing 'clan lands', as they considered them their own. Those, who have arrived to work for the oil industry by that time have already been settling in cities, such as Surgut, Kogalym, etc. They have also begun to consider the land they worked on as their own. An employee of LUKOIL-West Siberia told me: "We work here, we brought in the equipment, and then out of a sudden, from who knows where, these Nenets appear with their reindeer." From Yamal nomads, I frequently heard that oil-workers fly over the tundra when reindeer herders are pasturing their reindeer elsewhere and, seeing no structures on the ground, they assume that nobody lives there. Here I draw attention to this perception of land, historically used by Indigenous people, as terra nullius, because it initially hampered the process of dialogue and the understanding of a need to pay compensations.

Initially, oil companies showed little interest in the local population, and even less in the Indigenous peoples. They perceived themselves as champions of civilization, a blessing for the area, and thought very highly about their own social status. In recent years, changes in the mutual perception of both groups are taking place. Life in a common area next to the local population is becoming an important trait of the oil and gas community. The previously present mutual 'exoticization' is giving way to the perception of both oil-workers and the Indigenous peoples as being neighbors.

In recent years, many of the companies under consideration have developed special policies related to Indigenous peoples, which are reflected both by corporate websites and sustainability reports. The Russian Union of Industrialists and Entrepreneurs (RUIE) publishes corporate practice guidebooks. In 2017, a survey was carried out among RUEI members on sustainable development goals (SDGs). The main activity area of companies, which helps achieve the SDGs, according to two-thirds of those surveyed, was the introduction of innovations and new energy-and resource-saving technologies. The second most popular answer—'stable economic growth—63.3%, and growth in employment' was chosen by 56.7% of the respondents. Just a little less—53.3% chose the answer 'responsible use and production'. Supporting a dignified way of life for workers and members of their family was noted by 46.7% of those participating in the survey. About the same number chose the answer "contribution to sustainable development of the territory under development, the improvement of the social climate, the acceleration of economic growth." Decreasing negative ecological influences, and climate impacts as was noted by 33.3% [4] (p. 10). Sakhalin Energy, Gasprom Neft, LUKOIL and some of the other largest fuel and energy companies have been traditionally recognized as leaders here. Many of these companies are also leaders in terms of their policies regarding relations with Indigenous peoples in their areas of operation, as confirmed by annual awards. For instance, since 2000, LUKOIL–West Siberia has received diplomas for collaboration with Indigenous peoples.

At the same time, both at the early stage of industrial development and nowadays, Indigenous persons pursuing traditional activities experience stress from being neighbors with oil workers. Some Khanty and Mansi people actively protest; others remain apathetic, having no faith in possible changes. Linked to this is the suspicion of and disregard for ethnological assessments on the part of the Indigenous population. Even if they assist the researchers, they often think that companies will continue doing their business nevertheless, once having arrived. Field research shows that in the absence of an effective policy, industrial companies will never become 'good neighbors' to Indigenous peoples.

3.2. Case Studies of Benefit Sharing Regimes: The Diversity of Oil and Gas Companies' Policies Regarding Indigenous Peoples in Russia

Usually industrial companies' policies regarding Indigenous peoples are evaluated by the existence or absence of relevant agreements and compensation payments. It has become somewhat of an academic

tradition in publications to compare corporate policies in the KhMAO, YaNAO and Sakhalin Oblast, so I will limit myself to a brief overview.

Khanty Mansi Autonomous Okrug-Yugra (KhMAO)

KhMAO's distinctive features are a well-developed legal system pertaining to the numerically small Indigenous peoples and their relations with industrial companies; the allocation of about 500 regional-level Territories of Traditional Nature Use (TTPs) to these peoples (families and clan communities (Clan community is an economic unit of individuals representing, mostly, Indigenous numerically small peoples of the North, Siberia, and Far East of Russia. In practice, since their establishment clan community have been playing the role of economic enterprises employing not only relatives and kinsmen, but also friends and acquaintances).

Since the 1990s, economic agreements have existed between industrial companies and Indigenous peoples (originally the heads of clan lands, later the subjects of rights to traditional use of natural resources). The regional law "On Territories of Traditional Nature Use of the Numerically Small Indigenous Peoples of the North in Khanty Mansi Autonomous Okrug—Yugra" stipulates that industrial activity on such territories requires approval of natives to develop production sites. Should they disapprove, a special commission shall examine the production site documents, which will share its recommendations with the Okrug government. Basically, from the legal perspective the general pattern seems fair, but practice shows that the commission's decisions favor oil workers. Another model was developed in the 1990s, namely a special environmental management regime at certain extraction fields, in particular in the Surgut area. In practice, the territories inhabited by Indigenous people became reservations, with limited access for the population [10]; this practice of restricting the movement of Indigenous residents continues today, according to social media reports. In 2009, the Okrug adopted a Model Agreement by government decree, which defines the scope of agreements signed with Indigenous peoples. Every family and community dealing with oil workers are listed into the Register of Subjects of Traditional Nature Use, which is a guide for oil workers.

This current system features a number of obvious disadvantages: The relationships are individualized, and in the event of conflict, they take on a private nature of a bilateral agreement with a large industrial company. According to this scheme, government authorities are excluded from such relations. Besides, there are no powerful non-governmental organizations; today, they often agree to the industrial companies' policies. The current practice satisfies the parties until companies claim new lands, especially in the Surgut and Nizhnevartovsk regions. Then, many conflicts arise in relation to reindeer pastures or sacred sites.

The largest industrial companies operating in the area have adopted corporate documents specifying their policy on Indigenous peoples; they also have departments on Indigenous people's relations. Responsible representatives of companies sign agreements with Indigenous people, track their implementation, and provide funding for various activities and programs. Over decades of industrial development, the policy of oil companies has changed significantly, but even now it is carried out residually, and oil companies sometimes freely shift the terms of payment or services for the next year.

Consider the policies of two largest companies operating in the Okrug. In spite of the existing legislation and documents adopted by the regional government, for instance, the Model Agreement, companies behave differently. LUKOIL mainly adheres to international standards; this company joined the Global Agreement Network in Russia and often receives awards in competitions for working with Indigenous people's relations and for sustainable development, etc. The company's policy is aimed at maximizing conflict prevention and its staff often provide informal support to Indigenous people, providing them with fuel, food, transportation, and technical assistance.

Surgutneftegas is the only major oil company that has its headquarters in the Okrug. Both local authorities and people recognize its authority and role in the development of local territories. However, in these days the company's relations with Indigenous communities have been characterized by conflict. Surgutneftegas insists on a rigid adherence with legislation (as it interprets it) as the only blueprint for action. In particular, company lawyers insist they are entitled to decide who represents

Indigenous peoples and thus can qualify for the signing of economic agreements. Such harsh policy provokes dissatisfaction among the Indigenous peoples. This company is involved in many conflicts over the preservation of sacred sites of Indigenous peoples. It can be said that this is an outcome of Surgutneftegaz's disregard for international norms and standards, and generally for ethical standards of behavior.

A significant problem in relations between Indigenous peoples and industrial companies is the difference in their perceptions of justice. Among permanent residents of the area, brought together and employed by Surgutneftegas and LUKOIL–West Siberia, (a division of LUKOIL)—the engineers and workers—widespread is the opinion that payments to natives is a social injustice. They believe that companies pay enough taxes, and it is the job of the government to provide social support for Indigenous peoples. Exclusion of public authorities from the process of interaction between Indigenous peoples and industrial companies under a Model Agreement intensifies such conflicts. In short, the main disadvantage of the policies of companies in the KhMAO is their focus on conflict resolution and financial support, and not on the sustainable development of the Indigenous peoples of the North.

Yamalo-Nenets Autonomous Okrug (YaNAO)

The YaNAO occupies a special place among the regions of the North, since the nomadic population living there preserves a traditional way of life based on reindeer herding. The significant percentage of nomads (primarily in the Yamal and Taz districts) contributes to the adoption of important legal documents in the district. Plans to sedentariness and to resettle into villages the reindeer herders proved to be meaningless, as anthropologists had predicted, but there are constant proposals, in one form or another to reduce herds. The issue of how to combine traditional nature use and industrial development in the YaNAO has recently become particularly relevant: How it will be solved will affect both the lives of Indigenous peoples and the geopolitical interests of Russia, which is concerned not only in industrial development, but also in having a population in its arctic territories.

The general demand of Indigenous organizations in YaNAO is the transition from corporate charity to the establishment of partnerships and cooperation in matters of mutual interest. Industrial enterprises to some extent also seek ways to diminish the impact of industrial development on the Indigenous peoples, to avoid open confrontation. They sign agreements with the Okrug Government and local (rayon) administrations. Based on these agreements, companies transfer funds, but there is no effective control over their distribution and use. Disadvantages of this system are the lack of targeted funding, transparency, and public (Indigenous) participation. Field research shows that against the background of general environmental problems related to industrial development and climate change, companies often allow themselves non-compliance regarding current legislation and their own obligations. The current practice of setting penalties that are insignificant for the fuel and energy companies also contributes to such an approach.

When considering interaction with industrial companies, we must take into account the fact that industrial development gives different groups of the population unequal opportunities and leads to different consequences. Tundra people experience a reduction of pastures and environmental pollution. Villagers, both Nenets and other residents, await new jobs from the development of industry in the north. If companies develop infrastructure in the towns, the local population, including the Nenets, would support industrial projects enthusiastically.

To enjoy psychological well-being, nomadic reindeer herders need to be confident that they can continue their activities in the future. Many Nenets have already made their choice—reindeer herding is their occupation, work, and way of being. Today, when the process of approving industrial development is underway, Indigenous people often do not believe that their opinion will be taken into account, especially since the organizations of Indigenous peoples often receive documents for approval only after all others have signed them. This exposes the Nenets to psychological pressure.

Another negative aspect is that not every reindeer herder and fisherman knows about the construction details in advance, so they do not know what they are going to receive or lose. Insufficient information provokes rumors and conjectures that all Nenets people will be relocated to villages,

that they will not be allowed to nomadize with their reindeer, etc. People resent that the industrial development is permitted in the elevated tracts of land where the Nenets people locate their camps and have holy sites. Experts and municipal authorities believe the development of the natural resources of Yamal should follow a systematic approach, built on the basis of interaction of all stakeholders—local state institutions, industrial enterprises, and Indigenous peoples. Today, contractual and financial practice approach prevail, without taking into account alternative development paths. This has a negative impact on the situation of Indigenous peoples and has reduced the legal regulation of companies in the region. Legislation monitoring shows that in recent years, there has been a significant change in the legislation of YaNAO and most of the previously adopted documents have ceased to operate. Many regional documents merely duplicate federal ones, featuring no provisions on Indigenous people's rights. The exclusion of such provisions from new laws on local referenda and cultural heritage sites negatively impacts the Indigenous people's status. Unfortunately, instead of adopting a law on social impact assessment, as planned in 2008, a weak norm appeared in the law 'On the protection of the ancestral lands and traditional way of life of Indigenous Numerically Small Peoples of the North in the YaNAO' that stipulates "scientific and sociological research for impact assessment purposes." Awkward wording is not so important in this case, as to recognize that the Okrug legislation takes a step back in terms of protecting Indigenous people's rights. Current YaNAO legislation seems rather like governmental support measures targeting peoples who lead a traditional way of living, mostly in material and financial spheres. Thus, government bodies are moving further and further away from monitoring the activities of industrial companies and regulating their relations with Indigenous peoples. Under these conditions, restrictions on economic activity and compensation due to Indigenous peoples that are guaranteed by law hang in the air, without law enforcement mechanisms and with contributing to the sustainable development of the region.

Sakhalin Oblast

In Sakhalin Oblast, several variants of interactions between energy companies and Indigenous and local populations emerged historically, and the previous experience of corporations and their successors reflects in the present. The oldest among the existing companies is Sakhalinmorneftegas; Rosneft and Gasprom have started operating in this region relatively recently. International companies Sakhalin Energy and Exxon Neftegas Limited also operate here. The experience of Sakhalin Energy has become almost 'textbook' in the literature on corporate social responsibility and Indigenous peoples. The experience of the program Sakhalin Indigenous Minorities Development Plan, implemented since 2006, has been described in detail in the academic literature [3,23–26]. Perhaps the difficulty of evaluating a company's activity is connected precisely with the breakthrough nature of its policies. Its activities are far ahead of those of other companies, which today may even create difficulties, as it has no one to compete with. Another successful company in this area is Exxon Neftegaz Limited.

The corporate social responsibility of international companies on Sakhalin is directed not only at Indigenous peoples, but at the entire local population of the region, which in itself contributes to the creation of a favorable social climate. These companies have special tripartite agreements (with regional authorities and non-governmental organizations of Indigenous peoples), on which an extensive network of coordinators works. During the field study of these companies, I got the impression that a main difference is that Sakhalin Energy has a 'Sakhalin Indigenous Minorities Development Plan', which is a clear document with prescribed organization and control mechanisms. Moreover, it is important to emphasize that the distribution of funds is carried out exclusively by representatives of the Indigenous community. The main significance of the plan is that it is aimed at the sustainable development of the Indigenous peoples of Sakhalin and contributes to the formation of social capital.

The third stage of the implementation of the development plan is underway. In 2016–2020 its objectives were development of potential (improvement of leadership qualities and technical skills; support for the pursuit of the further development of ethnic identity); socio-economic and cultural development (cultural revival, economic sustainability of enterprises engaged in traditional

management); and improvement of social conditions as targeted areas of support. Emphasis is placed on long-term strategic planning with the concept of sustainable development (as a guideline); preparations for the creation of an independent fund for the development of Indigenous peoples; and information disclosure about the environmental impact of the Sakhalin-2 project (ensuring timely, objective, and complete information about the existing and or potential impact and measures taken to prevent and or minimize any possible negative impact). Since 2006, representatives of Indigenous peoples and their organizations proposed more than 650 projects in support of traditional economic activities and implemented social development, for which the Indigenous people themselves approved the funding. The benefits of the plan include its duration and transparency.

In a comparative analysis of the policies of industrial companies with regard to Indigenous peoples in the Russian Federation, the plan stands out favorably for its focus on the development of these peoples. These are projects for the purchase of equipment and the equipping of their camps and hunting areas. Such development plan, as a policy of interaction between Indigenous peoples and an industrial company today needs not only to be encouraged, but also improved. O.A. Bazaleev, who worked for Sakhalin Energy for a long time, conducted an interesting analysis of social capital as a factor in the implementation of social and economic programs. The role of the concept of social capital is especially important for analyzing the effectiveness of development projects, as it actualizes such a resource as the interrelations between people and public structures and, "allows to avoid a one-sided perception of aboriginal communities through the prism of scarcity of resources." However, it is necessary to take into account that social capital can have an ambivalent effect: Costs such as ethnocentrism or 'clanhood' can become an obstacle to the development of Indigenous peoples [27]. The development plan covers all the Indigenous peoples of the island, regardless of where they live. The plan creates prerequisites for the increase in level and quality of life of Indigenous communities. In general, an important positive factor is the wide range of activities of international companies on Sakhalin, aimed at the entire local population of the region. But the special rapporteur emphasized that despite the apparent success of the Sakhalin agreement, there remain many problems in the relationship, including the oil producer's fulfilment of its obligations under the agreement [10]. Initially, one of the criteria for the plan's effectiveness was supposed to be, "the number of Indigenous representatives employed in the project as compared to the total workforce." Today, the company has desisted from the plan (First Sakhalin Indigenous Minorities Development Plan 2006, author archive).

3.3. Who Enforces Company Policies and How?

In relations with companies, it is necessary to take into account the state of psychological health of Indigenous peoples, who often experience stress from being close to oil and gas workers, etc. Hostile relationships are usually based on a lack of knowledge. Many oil workers, who have been working in the north for decades, say with an incomprehensible pride in their voices that they have never seen Natives and do not seek to learn about their life and culture. Oil and other industrial workers have formed groups which now exist as separate communities, not having and not seeking to have connections with the local population. In recent years, the policies of some companies are changing: They are starting to think more about corporate social responsibility and the adoption of special regulations for Indigenous peoples.

Company policies regarding Indigenous peoples are largely dependent on the general legal and political situation in the country. Today, the interests of Indigenous peoples and the local population are often secondary in making decisions about the priorities of territorial development; the social value of industrial development is not considered in the mixture of all the effects of resource development [28]. It is very important to have the free, prior informed consent (FPIC) of the Indigenous peoples to make decisions and the right, guaranteed by law, to say "no". At the same time, field research shows that, in practice, the work of companies and the situation of Indigenous peoples in industrial areas vary.

An important indicator is the education and professional competence of staff responsible for working with Indigenous peoples. When conducting field research on Russian and international

companies and when these companies create departments to work with Indigenous peoples and local people, the differing approach to recruitment is striking. In the mid-1990s, when I began my work, such a department in Kogalym (LUKOIL—Western Siberia) named a committee 'On Corrosion of Pipes and Work with Indigenous Peoples'. In the 1990s, companies entrusted this work to engineers who had Indigenous assistants. Neither had any special education. Today, in Russian companies, people without special education continue to work in this area; they believe their activities are aimed at helping Indigenous people. In international companies, such departments pursue their activities in accordance with international principles aimed at the development of Indigenous peoples. They usually employ professionals with a humanitarian education.

If we compare the situation during the last 30 years, there is unconditional progress in relations between Indigenous peoples and industrial companies. As one indicator of this, we may consider the regulations imposed on company employees. Restrictions on hunting, fishing, gathering of wild-growing plants, keeping dogs, weapons, etc., have appeared. These rules are fairly simple to implement, and companies, using administrative resources and penalties, can easily regulate them. Such regulations usually address the accumulated, often negative experience and serve primarily to prevent conflicts. However, they contribute little to the development of partnerships.

Regulations can be the subject of wide discussion. For example, in the KhMAO, after a 2015 conference on 'Indigenous peoples. Oil. Law', ethics recommendations commenced in May 2016, for workers of industrial companies and Indigenous people when working in territories of traditional nature use. An important feature was the reciprocity of requirements. Based on such documents, companies develop policies, which they then consider when developing regulations for employees. Municipal authorities also try to take into account the specificities of companies in the Arctic in their documents on the organization of public hearings (YaNAO). Of course, all these documents, as well as laws protecting the rights of Indigenous peoples, appeared due to these efforts.

The situation is more difficult with daily work. A comparison of international and Russian companies shows that the special education of such workers, their training and retraining, and the continuous improvement of their qualifications are important, as we see, for example, in Exxon Neftegas. Another successful practice is the (ethno-sociological) monitoring, which Sakhalin Energy conducted. Russian companies, for example Lukoil-Western Siberia and Surgutneftegaz, are more likely to continue their old way, relying most often on engineers or Indigenous persons, with little thought about their qualifications.

The most important indicators of the success of the development and operation of such regulations are their legitimation, openness and provision of feedback mechanisms. In practice, we are faced with the fact that often not only the Indigenous persons and ordinary workers, but even those employees who are responsible for working with Indigenous people, do not know about these regulations. Obtaining such documents is also not without incidents: sometimes they are declared closed to the public. Only Sakhalin Energy has a clear complaint procedure, while other companies often provide general telephone numbers that Indigenous people are invited to call in case of problems. In addition, the text of the regulations is often limited to minimal restrictions and statements about respect for the culture of Indigenous peoples.

The effectiveness of company policies also depends on how its employees perceive corporate social responsibility. This is also manifested in their dissatisfaction with payments to the Indigenous people, and in their desire to not advertise some of their achievements in terms of signing and accepting documents, so that Indigenous people cannot refer to these and make new demands. A study of the opinions of managers of oil and gas companies enrolled in MBA programs collected interesting materials. These managers listed the top five areas of concern, which included policies aimed at developing the potential of companies, creating jobs, and developing sports. The interests of Indigenous and local populations as part of CSR scored substantially fewer points. The authors of this study conclude that the perception of CSR by Russian oil producers is, "a rather motley mix of Soviet heritage,

memories of the turbulent 90s, today's realities and Western approaches that were relatively recently introduced into Russia" [29] (p. 28).

4. Discussion and Conclusions

4.1. How do Indigenous People Perceive Corporate Compensations—As a Fair Reimbursement of Damages, a Partnership, or an Unemployment Allowance?

Indigenous peoples have been entitled to compensation for damages that industrial companies caused since 1999, according to an article incorporated in the Federal Law 'On Guarantees of Rights of Numerically Small Indigenous Peoples of the Russian Federation'. Why is it so difficult to realize this right in practice? There are a number of factors limiting this right of Indigenous populations. Firstly, it does not correspond to company responsibilities, and is not covered in the law on sub-surface resources. Secondly, this right should be built upon the free prior and informed consent (FPIC) of Indigenous peoples regarding decisions relating to their interests, as declared in international documents. Companies need to realize that compensation is one condition for obtaining Indigenous people's consent. Field research shows that for the just realization of the right to FPIC representation of Indigenous peoples is required at consultations and public hearings. Moreover, persons having a dissenting opinion should be entitled to court appeal, supplementary expertise, etc.

Availability of financial means is a very important condition to allow Indigenous populations to make decisions—they should be entitled both to exercise control over resource use, and have the right to priority access to resources, firstly to fishing and hunting lands and reindeer pastures, as the basis of their livelihood. Indigenous economies consist of not only state support and compensation payments from industries, but also their guaranteed right to free use of natural resources. Only then, Indigenous people will feel free to resolve issues concerning the use of the territories which they inhabit.

Today, two lines of compensation for damages experienced by Indigenous populations exist in the Russian Federation. Naturally, compensations cannot be a panacea for all the inadequacies of industrial development, however they may alleviate and minimize the consequences of such damages. First are financial payments, based on agreements, or on the basis of various methods of calculation. The result is the receipt of money, or sometimes other things of material value. This practice is best exemplified by KhMAO (among regions under my research). At the beginning of the 1990s, it was pioneering, which was a breakthrough in Russia. Unfortunately, as it often happens, its positive value has diminished over time; agreements became increasingly bureaucratized towards more formal identification of conditions instead of improvement and enhanced opportunities. These agreements very quickly ceased to restrict the activities of the companies. The Indigenous people were in a difficult situation. They are financially dependent on these compensations, as their ability to practice their own economic activities diminished. In the areas designated for traditional nature use there are more and more new industrial facilities. Sometimes the Indigenous people have to become shift-workers, and sometimes this is in close proximity to their own ancestral land. Such neighbors certainly reduce the possibilities for traditional nature use. This system often does not suit either party. Much is contextual, depending on personal relationships, not on law and justice [14] (p. 72). There is a danger that the developed method of calculating losses will change little. Experts (economists) are primarily concerned with the accuracy of formulas. The Committee on Issues of Nationalities of The State Duma does not support the proposals to discuss the procedure for using the methodology in discussions.

What happens in the areas of industrial development as a result of financial injections from large businesses? How do Indigenous peoples' lives change? How satisfied are they with the changes? Indigenous experts suggest their own visions of compensation, which are not only material or financial. Here is a notable quote from an Aboriginal teacher and UN 'Unsung Hero of the 20th Century' on Presentation to a San-!Khoba project workshop (Kalk Bay, South Africa, June 2006), cited in the 2009 book *Indigenous Peoples, Consent and Benefit Sharing: Lessons from the San-Hoodia Case*: "My biggest advice would be, please, … do … not … just focus on the economic gains, because for Indigenous people the most important thing is the relationship" [9] (p. 334). Many Indigenous residents of

the Russian North also speak in favor of safeguarding the environment and preserving accessible renewable resources (primarily land) as well as the opportunity to support their families.

Seminars revealed interesting results in Bulunsky Ulus of the Sakha Republic (Yakutia) in 2018, especially during the training seminar: 'What do Indigenous peoples expect from ethnological expertise and how can we achieve this?' The seminar made use of the method of 'wheel of balance'. While this is useful for personal improvement, in our case, the psychologist-coach T.F. Martynova applied it to work with groups. During a role-playing game, participants were divided into 'Indigenous people', 'industrialists', 'local population and NGOs', and 'government bodies and local governments', and we tried to ensure that participants of the seminar choose roles contrary to their life experiences. Compared with the usual 'wheel', which includes important segments for each person (e.g., family, health, finances), instructors described sections that characterize traditional culture, language, and ecology as the most relevant for Indigenous peoples. Participants had to present their satisfaction in points from 1 to 10. This technique has proven successful; people started thinking about how to build relations with companies and about what they expect from ethnological expertise. Participants made very important conclusions that employment is more important than compensation. It should be noted that participant point of view took shape during the course of the seminar; at the beginning, everybody had said that the company should build and do everything for them and provide money. The second important point of the seminar is related to acquiring the experience of communicating on an equal footing in partnership with companies and authorities. This is especially important in modern conditions for regions where industrialists and Indigenous peoples become neighbors, who not only work, but also live side by side.

The competent social and environmental policies of companies aimed at the sustainable development of Indigenous peoples determine the other line is determined. In Russia today, it is represented by the Sakhalin Indigenous Minorities Development Plan (not to say this cannot be improved). It also has a financial component, but there is also a mutual understanding that "a gift of a fishing rod is more important than a gift of a fish". It is also important to note the emerging new opportunities for the development of Indigenous business. The plan allocates grants and microcredits for the purchase of equipment, transportation, and arrangement of processing points for products. Recipients can spend funds on the purchase of autonomous power plants, information and communication technologies, and electrical appliances useful for commercial activities.

4.2. Possibilities for Legal Regulation of Corporate Social Responsibility

The experience of studying the legal regulation of the interaction of Indigenous peoples and industrial companies shows its inadequacy for establishing equitable partnerships and co-management. Today, a new platform is forming to solve this problem—a draft law on public non-financial reporting and a plan for its implementation. In May 2017, the Government approved the "concept of public non-financial reporting", prepared a corresponding draft law, and created an interdepartmental group to develop a list of key non-financial reporting indicators [30]. The Expert Council of the Committee on Issues of Nationalities of The State Duma began negotiations on the possibility of taking into account the interests of numerically small Indigenous peoples in this process.

Until recently, local communities perceived the reports on non-financial reporting and corporate social responsibility as showing voluntary activities of companies. However, research shows the shortcomings of these policies: They are opaque, they focus on a narrow group, and far from all companies operating in the North and the Arctic generate sustainability reports. Citizens' passivity is also an obstacle [31]. Among Indigenous populations, this may be attributed to their low level of education, especially in legal matters, their low living standards, lack of material resources, and the resulting high degree of dependence on financial support from industrial companies, especially in KhMAO.

In their social policies, international standards and Russian standards have adapted to these guide companies. It is not by chance that new opportunities for including the interests of Indigenous peoples on the agenda appeared precisely in the summer of 2018. On 1 July, the GRI 411—Indigenous

Peoples (Global Reporting Initiative) entered into force [32]. The development of formal criteria for non-financial reporting in Russia today is of interest to all. Large companies are interested in increasing their investment attractiveness, Indigenous people want their voice to be heard. Companies are interested in receiving feedback from the regions of their activities, while Indigenous people want to know what awaits them during and after the implementation of industrial projects. Yet, with respect to Indigenous peoples, company policies lack transparency and partnership. Some of them invest heavily, but do not see returns in society.

According to the GRI 411 standard, non-financial reporting requires companies to identify cases of recorded violations of the rights of Indigenous peoples. Unfortunately, the clarifications of this document are not taken into account in Russia. In international practice, it is included in the system of protection of the rights of Indigenous peoples. Two non-financial reporting indicators are included in the Russian version—the number of formal cases concerning the numerically small Indigenous people's violation of rights and the number of internal corporate documents in the company on policies regarding these people. The Expert Council of the Committee on Issues of Nationalities of The State Duma included a more detailed description of non-financial indicators and offered to decipher the conflict resolution mechanism in the light of the complaint procedure. Experts also proposed to introduce additions to the index on 'characterization and training of personnel' for the employment of Indigenous people, including training and retraining programs.

The interaction between Indigenous peoples of the North and industrial companies is certainly a complex and intractable problem to solve. The sheer proximity of various actors adds to its severity. Climate change, reduction of renewable resources, the need to improve the level and quality of life of the population in areas of industrial development dictate a clearer position for the state and civil society. Corporate policies of companies are becoming a promising field for dialogue. Experts proposed various means of legal regulation of these relations including international law, Russian legislation, and standards of business communities. It is obvious that the Indigenous peoples themselves and their organizations play a significant role. Their participation can suggest best practices and the mechanism for their implementation in specific regions for specific companies. Indigenous involvement can also offer possible mechanisms for the prevention and resolution of conflicts.

Benefit sharing of oil and gas production is a long process. In order to be successful, it requires legal regulation, everyday work of the companies, supervision and involvement of Indigenous peoples, as well as stakeholders' observance of mutual agreements. Applied anthropological research has demonstrated that companies are to combine equitable compensations covering the actual damages done to Indigenous peoples with socially responsible policies and high international business and human rights standards.

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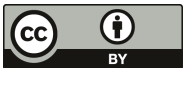

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Resource Allocation in Oil-Dependent Communities: Oil Rent and Benefit Sharing Arrangements

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Abstract: This study is dedicated to the interaction between oil and gas companies and local communities that depend deeply on the production of oil. One of the key concerns of all oil-dependent communities is the distribution of oil rent: Who participates in decision making regarding the distribution of oil profits and who can claim the benefits and on what grounds? Benefit sharing arrangements are used to decide such matters in global practice. Using Russian Arctic and subarctic areas as examples, we analyze the main rules and practices of the distribution of benefits from oil production at the local level. This study focuses on the coexistence of oil companies and indigenous people, many of whom practice a traditional way of life. We also pay attention to the institutionalization of the norms and rules of oil-dependent communities at the local level.

Keywords: indigenous people; oil-dependent communities; oil companies; Russian Arctic

1. Introduction

The introduction of new technologies in the 19th century suddenly boosted the value of oil, making it one of the symbols of economic progress and political power in the world. From a sticky substance used to light kerosene lamps, it became the key resource for industrial progress [1]. Technological progress and the creation of relevant infrastructure also made oil a supreme resource. By the end of the 20th century, the world had completely turned into a society symbolically referred to as the oil Leviathan [2]. This society has certain distinguishing features. First, there is a close dependence between economic prosperity and the production and export of oil. There is even a group of countries whose progress has depended on the price of oil for many decades [3]. Second, oil can be used as a political tool in the oil-dependent society. The third prominent feature of the oil-dependent society is the development of an oil ideology. A number of countries have started to embrace the idea of national supremacy, based on their control over energy resources. This is why researchers speak of resource nationalism and the use of natural resources as a tool to strengthen the idea of national exclusivity. Resource nationalism, in turn, leads to the development of a power ideology. On the one hand, this provides an oil producing nation with a chance to substantiate its political ambitions in the global arena and to legitimize its existing power or influence and, on the other hand, it justifies a lack of economic growth and material prosperity among the deprived population [3].

Just as any other society, oil-dependent societies have their own sets of rules and norms of behavior, their own beliefs and rituals, their own distribution of power and authority, and their own types of conflicts and the methods for their resolution. According to Douglas Rogers, the depth of the oil well is always directly proportional to the depth of institutional transformations [4]. Most existing research papers on the topic analyze the influence of the oil curse on political institutions at the national level [3,4]. In this study, we focus on the influence of the oil curse on the social institutions of the oil-dependent society. We also study agreements on the distribution of benefits between oil companies

and indigenous people. Indigenous peoples leading a traditional life are the most vulnerable group in terms of industrial development in their territories, and they are occasionally forced to fight for their rights in conflicts with oil companies. One of the key questions regarding such interaction relates to the rules of the distribution of oil rent among various groups of stakeholders.

We mainly pay attention to the rules of the distribution of resources among oil and gas companies, state authorities, and local residents in the oil-dependent communities of Russian regions. The development of the oil-dependent society in the indigenous regions of the Russian North dates back to the Soviet Union. Oil drilling started in the northern territories following the Second World War. Geological surveys were conducted in this area in the 1950s and 1960s, and a little later the identified sources of oil were subjected to drilling. Traditional communities were affected by the construction of industrial facilities, the shrinking native territories, the arrival of many nonlocals bringing along new lifestyles, the development of infrastructure, and the spread of technology [5,6]. Following the perestroika era, a crisis and a shift to a market economy, the oil and gas companies that maintained the infrastructure in these areas became the key economic players. The shift from a planned to a market economy required the development of new rules of engagement between oil companies and local communities. The process of enacting the new rules was accompanied by a rise in the number of conflicts [7–10].

We can identify some of the reasons behind these conflicts. First, the increase in oil production led to a decrease in agricultural land area used by the locals. This problem is very acute for indigenous people, who practice a traditional lifestyle. The shrinkage of land threatened the conservation of reindeer herding and other traditional lifestyles [5,8]. Land-related conflicts were persistent in Yamalo-Nenets Autonomous Okrug (YNAO) in the 1990s and in Nenets Autonomous Okrug (NAO) in the beginning of the 2000s. In Yamal, such conflicts grew into open protests, whereas in NAO they were latent by nature. Second, oil production affected the environment. Industrial activity deteriorated pastures and decimated fish populations in the rivers. Despite the related legal environmental norms, oil production brings along spills and other industrial accidents [9–12]. In fact, the deteriorating environment became one of the reasons why indigenous people protested against oil companies in Yamal in the mid-1990s and in the Republic of Komi in 2010–2016. Third, industrial activity desecrated indigenous people's holy places. Since many indigenous communities adhere to pagan beliefs, it was important for them to preserve their holy lakes and sockets, i.e., the places in which they could perform pagan rituals. Oil drilling close to the holy sites of indigenous people indeed became one of the causes of conflict between oil companies and indigenous people in Sakhalin in the mid-2000s. Exxon Oil and Gas Limited started using indigenous people's holy field to store their industrial stock, which aroused dislike among the local population and became the starting point of a wave of protests against oil and gas companies in Sakhalin [13–17]. A similar incident took place in Khanty-Mansi Autonomous Okrug (KMAO), where a conflict broke out in 2015–2017 because of oil drilling performed by "Surgutneftegaz" in the Numto and Ilmor lake area. Despite the fact that it was a holy territory, the oil company was not willing to give up on these lands, because they held vast reserves of oil [9,18,19]. Last, conflicts were caused by the amount of money paid by the oil companies to local people to compensate for damage. This issue was very acute in the 1990s, when there were no formalized rules for assessing compensation [18,19]. In this paper, we analyze the different ways to resolve such conflicts between companies and local communities in oil-dependent Russian regions. The article focuses on the rules of the distribution of oil rent in oil-dependent communities and the ways in which these rules affect social institutions.

The main questions of this research are the following: (1) How are the rules of oil rent distribution institutionalized at the local level in oil-dependent communities and (2) how does the order of the distribution of oil rent affect societal relations?

2. Theoretical Framework: Oil, Institutions and Society

The theoretical framework of this study is neo-institutionalism. According to this approach, institutions are understood as formal and informal rules of interaction between actors [20]. Institutions are created by people to reduce transactional costs and the related uncertainties. Institutions mean cognitive, normative and regulatory frameworks that make it possible to integrate collaborators' actions, to determine the hierarchy of positions and to identify the different stakeholders operating in the same space. They form and sanction a relatively uniform code of conduct for inter-personal relations and help in the mutual creation of a shared system of values [20].

The process of institutional formation is complicated and is influenced by many factors. Of these factors, we focus on the availability of significant natural resources such as oil. Many studies have been conducted on the interdependence between the resource curse and institutions [21–24]. Can the physical nature of a key natural resource determine the political and social fabric of society? The majority of researchers agree that there is a close bond between the abundance of resources, the level of state control, and the development of institutions in less-developed, resource-rich societies. Ch. Tilly and M. Olson have noted that the formation of states was due to the institutionalization of certain forms of management and protection in exchange for the provision of some resources to military commanders [21,22]. In given territories, rulers enabled the formation of political and economic institutions that stabilized local people's lives in exchange to acquiring the right to collect taxes. According to A. Etkind and M. Ross, the nature of the resources available to the state and the rulers determines the formation of appropriate political institutions. In other words, in exchange for resources, the state provides the people with various institutions. Differing resources have differing features that are connected not only with their physical characteristics but also with their institutional characteristics [23–25]. This means that while being one of the key resources in modern times, oil also has specific features that affect the development of political, economic and cultural institutions in oil-dependent communities.

Researchers focus on some of the institutionally significant features of oil that play an important role in less developed, undemocratic societies. One of the key features of oil is its capability to bring considerable profits for the state. M. Ross notes that in forming state institutions, the main source of state revenue plays an important role. To rephrase, a person is what he eats and state is what funds it collects [8]. If the state's main source of revenue is taxation, the state is more considerate toward society and dependent on it. However, if the state can collect revenues from other sources, such as the export of oil, it is less likely to be affected by the pressure exerted by the citizens. The economic non-interest of the oil Leviathan in its citizens is accentuated by the fact that the oil industry does not need much workforce. The production of oil requires a limited number of highly qualified workers. According to A. Etkind, this determines a government's attitude towards the people of the country: citizens turn from a resource and a source of prosperity into objects of philanthropy. The rulers do not consider the people as a valuable resource that needs to be developed as a good investment. Therefore, some of the oil and gas producing countries are super-extractive states, where the prosperity of the political and economic elite does not depend on the people, but is determined by other factors such as global oil prices [23]. In such societies, the main reason why the state subsidizes its citizens is to gain their political loyalty [24–26]. The state buys its citizens' loyalty by increasing social transfers of the oil revenue towards the people [25]. However, the spending of hyper-profits generated by oil sales leads to an increase in secretiveness and translucency. In many oil-producing countries, citizens do not have the capacity to control the amount of money that their government earns through oil sales. In fact, it is practically impossible to find authentic data about the countries' oil revenue. Combined with weak democratic structures, this reduces the social accountability of the government [23].

High-profit resources ferment conflicts over the right of ownership. According to research, these conflicts are more frequent in oil-dependent societies than elsewhere [23,27,28]. The distribution of oil rent in these societies is not equal, and the benefits and costs of oil production are always distributed hierarchically.

Conflicts can be latent or they may turn into armed struggles. Not all researchers agree that there is a clear connection between conflicts and oil. For example, M. Ross notes that oil can have two contradicting effects: it may restrain insurgencies, as it increases people's income, or it may cause revolts in a country's oil-rich regions. If oil restrains conflicts, it affects the whole country, but if it instigates them, only the oil-rich regions are affected [23]. G. Schlee is also doubtful about the influence of natural resources on the level of conflict in society. According to him, there is no such thing as a conflict over resources or a resource-instigated conflict. He maintains that any conflict that looks like a conflict over resources is in fact a conflict caused by ethnic, religious and/or linguistic differences. Oil is often merely a catalyst of conflict [28]. M. Ross supports this view by noting that oil-related conflicts are amplified in areas where oil is complemented by ethnic or religious dissatisfaction [23].

All over the world, the oil and gas industry mainly develops in vertically integrated holdings [4]. Such form of industrial organization enables the reduction of transaction costs and increases the stability of the companies. To guarantee the security of its investment, a business must integrate the source of oil and the refinery into a single industrial structure. Meanwhile, a vertically integrated business structure is based on a strictly hierarchical system of management, which is also applied to the business's social activities. An oil company's social and cultural projects are also executed within the framework of this vertically integrated structure of management [4]. These projects are supposed to legitimize the dominating stakeholders, as well as to create an aura of social prosperity and equal distribution of oil benefits. K. Humphrey equates oil companies with medieval overlords, who took control of large underdeveloped territories with minimum infrastructure and local populations, awaiting comprehensive support and large cash flows [29]. In such cases, social and cultural policies are also subjected to vertical integration and hence become dependent on the major players. The social and cultural projects executed by oil companies and the state in oil producing areas are selected from the perspective of the dominating players, and they do not necessarily conform to the needs of the majority of the people [4].

Hence, many researchers say that oil and gas as key natural resources determine the formation of relevant political institutions and stimulate the advancement of autocratic political systems. It has also been noted that an abundance of oil deteriorates effective institutions or leads to their replacement with less-effective ones [25]. Other researchers tend to support the idea that the oil curse is not a crucial factor of poverty. The slow economic growth in some oil-rich states is not due to the negative influence of excessive oil profits, but to the ineffective institutions that the states have inherited [23]. The oil curse will have negative consequences in a society with weak democratic institutions. In this case, the availability of oil revenues increases the possibility that the authorities ignore the participation of citizens in decision-making processes and use the practices of social patronage towards the citizens. The governments of oil-rich countries are not always ready to resolve problems associated with the distribution of oil rent, the lacking interest of the state and oil companies in the population, and the fluctuation of oil revenues. The authorities tend to mask or negate the existing problems through relevant cultural and social programs. Therefore, it is necessary to pay attention to institutions that regulate the distribution of oil revenues within oil-dependent communities. Examples of such institutions are benefit-sharing agreements between oil companies and local residents. In this paper, we address the institutionalization of these agreements in Russia.

3. Research Materials, Methods and Research Questions

This study focuses on the sharing of benefits in the regions of northern Russia where oil companies operate: Nenets Autonomous Okrug (NAO), Khanty-Mansi Autonomous Okrug (KMAO), Yamalo-Nenets Autonomous Okrug (YNAO), and Sakhalin Island. NAO and YANAO are located above the Arctic circle, while Khanty—Mansi Autonomus Okrug is situated in western Siberia and borders the Yamalo-Nenets Autonomous district. Sakhalin Island is located in northeastern Russia (See Figure 1). Oil and gas corporations are operating in all of these regions, where there is very little other industry that would not depend on the oil industry. On the one hand, oil companies build

and maintain most of the local social infrastructure, and on the other hand, they determine the social and political trends in these territories, thereby converting them into oil-dependent communities. Since tax revenues flow almost totally to the federation, the regional authorities are dependent on good relations with the companies. Based on soviet legacy, companies are expected to take care of the local infrastructure as negotiated with the regional authorities. Although this bond between the companies and the regional authorities resembles taxation, it leaves the companies a lot of power to decide the way in which they support the regions [5].

Figure 1. Administrative map of Russia. Source: Maps of Russian Federation. URL: http://www.maps-of-europe.net/maps/maps-of-russia/administrative-map-of-russia.jpg.

A distinctive feature of these regions is that they contain large groups of indigenous people, some of which follow traditional lifestyles. These indigenous groups are the Nenets (NAO, KHMAO, YANAO), the Khanty and the Mansi (KHMAO), and the Nivkhi and the Ulta (Sakhalin). Their livelihoods represent subsistence economy: fishing, hunting and reindeer herding. Although there are some markets for their products, their livelihoods cannot compete with the oil industry in economic productivity. People representing this lifestyle do not share the same ideal of economic prosperity with oil companies, regional authorities or other local populations. According to tradition, they are satisfied with living off the land, which they aim to pass to the next generations. The local residents view the arrival of oil companies in an ambivalent manner. On the one hand, oil extraction is regarded as a matter of national importance and an opportunity to receive significant economic support from the companies, which in fact finance the construction of schools, gymnasiums and residential buildings. The material aid that the local residents receive from the companies provides them greater comfort. On the other hand, the arrival of the oil companies is perceived as a threat to the traditional way of life in the tundra, which indigenous people consider their home. For this reason, indigenous people are concerned about the forced limitations on reindeer herding and environmental pollution caused by industrial development. These people have always been closely tied to land; that land is not only important for reindeer herding and fishing, but also the basis for their spiritual culture. The reduction of land area inhabited by indigenous people alters their social norms and deteriorates their ethnic identity. According to our research, all these processes stimulated social transformations in the studied local communities.

This study is based on grounded theory and qualitative methods [30,31]. The use of grounded theory included the following stages: collection of empirical data, their careful coding, selection and interpretation of analytical concepts, comparison of the analytical categories with new data, further elaboration of the analytical concepts, formation of theoretical conclusions, and validation of the results. At the same time, data collection and analysis were carried out in parallel. The main methods

of data collection were semi-structured interviews, document analysis and participative observation. We interviewed representatives of the regional and local authorities, representatives of oil and gas companies, local residents of oil production areas, and experts from scientific and research institutes and social organizations. The interviews were conducted with representatives of the following companies: Lukoil, Surgutneftegas, Sakhalin Energy and Exxon Neftegas Limited. In addition, interviews were conducted with representatives of the state authorities and local residents in Salekhard, Seikha (YNAO), Yuzhno-Sakhalinsk, Nekrasovka, Okha, Nogliki (Sakhalin), Khanty-Mansiysk, Numto (KHMAO), Naryan-Mar, Nelmin-Nos Horei Ver, and Krasnoe (NAO). A special guide was appointed for each group of informants. The crucial issues were focused on the main forms of interaction between companies, local residents and authorities, as well as on the economic and social consequences of the existing forms of interaction for local communities. The respondents were asked the following questions: What forms of corporate and state assistance to local communities are the most widespread? What forms of assistance are the most effective from your point of view and why? What are the negative impacts of industrial activities on local communities? What are the causes of conflicts between companies and local residents? The informants were selected with the help of the snowball method. Altogether, 95 interviews were conducted, and they were all subsequently transcribed and analyzed.

The main types of data analysis were coding, highlighting the main analytical concepts and categories, and their further development and interpretation. The interviews were analyzed through thematic, axial and selective coding. In analyzing the data, we identified some of the most significant codes, which were then combined into larger analytical categories. The key category of analysis was the concept of oil-dependent community. We divided this concept into the following subcategories: norms and rules of oil-dependent communities, myths and rituals of oil-dependent communities, cultural fakes, conflicts and risks in oil-dependent communities, and tools for conflict resolution. For a more complete disclosure of categories, we used memos. During our research, we revisited the selected codes and categories and made new interpretations based on newly collected materials. In further data collection and analysis, we compared the new data and the existing analytical categories, refined them, and made a more complete description and interpretation of the categories. Disclosure of the key category through the constant comparison and the addition of related categories was used to specify the studied social processes conceptually. This allowed us to substantiate our conclusions about the influence of oil resources on societal relations.

Furthermore, we used participative observation as a research method in the following indigenous settlements located in oil-drilling areas: Krasnoe, Nelmin Nos, Horey Ver (NAO), Nekrasovka (Sakhalin), and Seiha (YNAO). The observation was conducted during a period lasting from two weeks to a month in each community. During the observation, we lived in the settlements and took part in the daily affairs of the communities together with the residents: we attended public events in cultural centers, museums and village councils; we went fishing and gathering; and we participated in informal meetings and holidays. While observing, the researchers kept diaries that were later analyzed. This llowed us to study the life of the communities from the inside and helped us to reveal practices of interaction between indigenous communities, oil companies and state authorities. Additionally, it allowed us to analyze the implementation of various rules concerning benefit-sharing arrangements.

We also analyzed the federal and regional laws that regulate the relationship between oil companies and local residents, and studied local press and corporate reports about sustainable development. The following federal and international documents were analyzed: the Land Code; the laws On Subsoil Resources, On the guarantees of the rights of indigenous small-numbered peoples of the Russian Federation and On the territories of traditional use of natural resources of the small-numbered indigenous peoples of the Russian Federation; the Convention on Biological Diversity; the ILO Convention on the Rights of Indigenous Peoples, etc. Furthermore, we analyzed corporate reports and regional media in order to identify the main trends of corporate social programs in the regions.

The data were collected between 2011 and 2017 as follows: NAO (June 2011), Sakhalin (August 2015), YANO (July 2017), KHMAO (January 2016, February 2017) and NAO (2016) (We are very

grateful to Maria Tysiachniuk and Galina Grening for their contribution to the materials). The duration of the study over several years allowed us to analyze the changes that have taken place in the local communities.

We used triangulation to ensure the validity of the interviews, observations, publications and documents. The combination of materials helped us to analyze the practices of benefit-sharing arrangements from the perspective of various groups of actors.

We anonymized the data to protect the privacy of our informants. Each interviewee was informed about the nature of the research and publications, and their oral consent was received prior to participation. The article does not provide facts about the actors, but it does describe the main practices of interaction between indigenous communities and oil companies in Russian regions.

In this research, we focus on the influence of oil on institutions and identify the basic aspects of the changes caused by this influence. We also analyze the transformation of social institutions under the impact of oil revenues. Then we discuss the main stages of oil expansion, the specifics of the distribution of authority and resources in oil rich regions, and the conflicts associated with these processes. Further, we elaborate the main forms of agreement between oil companies, indigenous people and the authorities in the studied Russian regions. We also discuss the norms and understandings that are rooted in oil-dependent communities and are influential in terms of the execution of agreements. Finally, we present conclusions about the basic features of agreements related to the distribution of benefits in the regions.

4. The Institute of Benefit-Sharing Agreements in Russian Oil-Dependent Communities

The prosperity of oil-dependent societies is based on oil rent, but the rules of the distribution of oil benefits rouse many differences of opinion and discussions, particularly because the redistribution of oil revenues in oil-dependent societies often occurs on an informal basis. Concurrently, various instruments of governance, aimed at a just and equitable distribution of natural resource benefits among various groups of stakeholders, are actively being promoted [20,32]. That said, the concept of just and equitable distribution of benefits has gained wide acceptance around the world. It originated in international conventions aimed at protecting biological resources and is associated with the idea of social and environmental justice [32,33]. This concept has also been widely accepted in the field of oil extraction [34,35]. The just distribution of resources is implemented in the form of benefit-sharing agreements between oil companies and local residents. On the one hand, these agreements take into account interaction with indigenous peoples, since oil extraction influences their environment and traditional lifestyles. Intensive oil production leads to environmental contamination, reduced wildlife populations, altered migratory routes, and lost fish populations in rivers. This has a negative effect on hunting and fishing, which are traditional livelihoods of indigenous people. On the other hand, the expansion of oil extraction means occupying land areas that are used by indigenous people [36]. Based on all this, indigenous people are entitled to a share in the revenues of industrial production [32,33].

Normally, benefit-sharing agreements are considered in the literature as a positive innovation that promotes sustainable development in natural resource governance. These agreements enable local communities to share the benefits of natural resource extraction. In many cases, the compensation is calculated according to damage and lost profits. Other arrangements include partnership or sponsorship agreements. Such agreements are regarded as a means for indigenous people to protect their rights, to support and strengthen their own institutions and to preserve their traditional lifestyle [34,35]. However, there is no consensus on their effectiveness. From the point of view of corporate managers, the agreements help to establish positive and trustworthy relations between companies and local residents. From the point of view of local residents, companies primarily use these agreements to achieve pragmatic goals and to reduce social and economic risks—in other words, they have nothing to do with trust. A number of researchers are skeptical about these agreements, saying that they do not

allow locals to participate in decision making. If resources are not redistributed justly, the agreements do not prevent inequality [37,38].

Some of the main aspects of reaching such agreements are highlighted in the scientific literature [32–34]. First of all, there are benefits that communities can gain from companies. These benefits can be passed to a community in various forms: as taxes (formal benefits), as compensation (formal benefits), as private-public partnerships initiated by authorities, companies and indigenous people (semi-formal arrangements), as charity programs (charitable giving), and as side benefits of industrial activity, including the creation of jobs and infrastructure development (trickle-down benefits) [39].

The second important aspect of entering such agreements is transparency and the participation of local residents in the distribution of benefits. This involves the introduction of transparent and formalized rules that govern the redistribution of benefits [36,38,39].

Finally, these agreements serve to address companies' degree of influence over local communities. This includes the regular evaluation of environmental contamination, changes in the lifestyle, the degree of loss of traditional culture, and the deterioration of the social fabric caused by industrial activity. It has been posited that the level of compensation to a community from a company is proportional to the effects of the industrial activity on the community [30,38,39]. In this study, we address agreements between oil and gas companies and indigenous peoples in Russia.

Russian practice regarding these agreements differs from international practice. In Russia, the agreements are concluded not only between indigenous peoples and corporations, but also between companies and authorities. It means that the funds received from companies are used both for indigenous people and for the rest of the population living near industrial enterprises. The idea of such agreements is rooted in the Soviet era, when state-owned enterprises were responsible for the social sphere of the settlements in which they operated [5,39].

Nowadays oil companies, locals and authorities use various types of agreements to resolve conflicts. These applied agreements enable compensating the locals for damage and supporting the local communities. They function as benefit-sharing agreements in the Russian context. The main types of benefit-sharing agreements used in the Russian regions are as follows [5,18,19,39] (See Table 1):

- Semi-formal agreements on compensating for damage;
- Formal agreements on compensating for damage;
- Partnership agreements for socio-economic collaboration;
- Sponsorship agreements.

Table 1. Types of benefit-sharing arrangements in the Russian regions.

Form of Agreement	Basis of the Agreement	Transparency	Decision Making	Focus of the Agreement
Semi-formal agreements between companies and indigenous people	Personal relations	Non-transparent	Companies, state	Material support
Formal agreements between companies and indigenous people	State legislation	Transparent	Companies, state	Financial compensation
Partnership agreements between companies, state, and indigenous people	Corporate and international standards	Transparent	Companies, state, communities	Development of local initiatives and social infrastructure
Sponsorship	Corporate standards and personal relations	Semi-transparent	Companies	Small charitable donations

Semi-formal agreements between oil companies and indigenous people on compensating for damage caused by the oil industry. These agreements were typically concluded by and between companies and indigenous communities without the participation of the state. According to these agreements, the companies

would pay reindeer herders compensation for land annexed for oil production. The money was used for vehicles, petrol, processing equipment, food, and transportation. Most of these agreements had been made on a short-term basis. The contents of the agreements were confidential, and only community leaders usually knew the amount of the money paid. Agreements were also often made with municipalities. In Russia, they are legal persons and their populations often consist of both indigenous and non-indigenous people. Sometimes oil companies also made agreements with the leaders of indigenous farms.

The amounts of compensation were determined in informal discussions between the oil companies and local leaders, and they mostly depended on the negotiation skills of the latter. If the locals did not have the relevant knowledge and skills, the amounts of compensation were insignificant. "*Oil companies signed support agreements, for example to transport you to and from, and you would sign the agreement that I will pass through your lands. Like in the case of Indians, precious wealth was plundered*" (Indigenous person, KMAO, 2017). Such agreements were very common from the 1990s up to the mid-2000s, when active oil production started in the northern territories. Both parties noticed the instability of such agreements: "*We are building an oil pipeline, for land we have already paid, but he says: Give me three more tons of diesel. I say: Listen, we have already paid—and he says: you give me more right now, I need it. I say: you're insolent. He: Well, then I will not let you build*" (Representative of an oil company, Komi Republic, 2015). Currently such informal agreements have been replaced by more formalized calculations of compensation.

Formalized agreements between oil companies and indigenous people on compensating for damage caused by oil drilling. These are agreements on compensating for damage in favor of indigenous people in connection with the acquisition of land and lost profits. The agreements are signed between oil companies and indigenous households, indigenous enterprises or indigenous NGOs. They are based on Russian Laws passed during 1990–2000 and aimed at regulating the relationship between oil and gas companies and local people. The manner of signing them varies from region to region because of disparities between regional laws. For example in KMAO, the law Territories of Traditional Nature Use (TTNU) was passed. According to this law, indigenous people who have registered rights to territories of traditional nature management, can receive substantial compensation from oil companies that engage in industrial activities on their land. If an indigenous people do not have officially registered rights to such a territory, then the companies will sign the relevant agreements with the local administration that will collect the compensation. In such cases, the local administration decides how and when to spend this money [39]. In Yakutia, there is a law on ethnological impact assessment that also allows indigenous people practicing a traditional lifestyle to receive compensation from companies. In some regions, indigenous people have not officially registered as owners or lease holders of land and therefore cannot count on receiving compensation from companies. In such cases, only reindeer farms with legally registered rights to agricultural land are entitled to compensation. For example in YNAO, only state reindeer enterprises have officially registered land areas, while ordinary reindeer herders do not, and therefore cannot, receive compensation.

The amounts of compensation are determined in accordance with a formal method, approved by the Ministry of Economic Development in 2009, of calculating the damage when agricultural land is acquired for industrial use. This method is applied in YNAO and NAO. In comparison with the previous practice of concluding semi-formal agreements, the calculation of compensation in accordance with the formal rules proved to be more beneficial to reindeer herders: "*The previous method was less expensive for the companies . . . which means that the digits were fewer*" (Representative of an oil company, Komi Republic, 2015). The use of formal rules of calculating compensation also enabled companies to hedge themselves against additional demands from reindeer herders, and to reduce the risk of conflicts with locals: "*Transitional period—troubled times of reformation—you could ask for something. Since the interaction is limited within the bounds of the agreement, you cannot demand anything. The companies consider such asking as blackmail*" (Representative of local administration, NAO, 2016). However, the new rules underwent amendments. In 2017, the method of calculating losses caused by the annexation of agricultural land was amended, which reduced the amount of compensation.

According to the interviews, the new way of calculating these payments became more profitable for oil companies, while indigenous communities lost some money (Director of reindeer herding enterprises, YNAO, 2017).

Apart from agreements on compensating for the annexation of land and lost profits, there are other compensation agreements, albeit less significant ones. These include agreements of servitude, which allow the use of agricultural land for industrial purposes without changing the category of the land. An example of such an agreement is the use of agricultural land for constructing a winter road to be used by an oil company.

Partnership agreements between companies, authorities and indigenous people. Partnership agreements can be bilateral or trilateral. Normally, these agreements are concluded at the regional or district level. The agreements are voluntary, since there are no legal requirements to sign them. However, in practice, refusal to sign one will result in troubled relations between a company and the authorities, as well as in bureaucratic hurdles: "*You cannot enter a territory without charitable or sponsorship spending*" or "For any incoming company, it means a school or kindergarten" (Oil & Gas company's representative, Republic of Komi, 2015). Within the framework of these agreements, companies allocate funds for the construction of social infrastructure in villages. Such agreements can be aimed at supporting the whole population or the indigenous people in the oil drilling area. They are used to build schools, hospitals, sports facilities, cultural centers and residential buildings and to support local entrepreneurs. There are no formal criteria for the amount of money the company has to pay, but normally to the sums correlate with the amount of oil produced in the region. In most cases, the regional authorities decide how and when to spend these funds.

An exception to the above is the island of Sakhalin, where Sakhalin Energy and Exxon Neftegaz Limited attempted to introduce international standards that govern community relations. Following the demands of international organizations, Sakhalin Energy decided to assist the development of indigenous communities by drawing up a plan for supporting the indigenous peoples of North Sakhalin. This plan comprised a trilateral agreement between Sakhalin Energy, the regional authorities and the Regional Council of Authorized Indigenous People and it was aimed at strengthening the company's image as a socially responsible operator and at establishing a partnership with the indigenous communities [40,41].

The key idea behind the plan was to develop a partnership with the community. It was based on international standards sanctioned by the IMF, the World Bank, and the ILO [36,37]. It was also influenced by the corporate standards of Shell and BP. The company attempted to create a transparent and collegial decision-making procedure. The plan was to be managed by the company and the representatives of the local authorities, and the main decisions regarding the distribution of funds were to be made by the representatives of the indigenous peoples [40,41]. Exxon Neftegaz Limited, based on the experience of Sakhalin Energy, developed a similar model of interaction with the indigenous communities. The company made a trilateral agreement with the regional authorities and the indigenous peoples. However, the main decisions regarding the distribution of funds to social projects were made by the company managers with the contribution of representatives of the indigenous peoples and authorities.

Sponsorship. Through this type of an agreement, a company provides small-scale financial support to local communities. The support consists of financing educational and cultural events, gifts for veterans, transportation, training etc. Within the framework of these agreements, companies also provide small amounts of money (on average 30–50 thousand rubles) to local libraries, schools and cultural centers.

The abovementioned agreements make it possible to reduce conflicts between companies and local residents. They also enable the redistribution of a small portion of profits to communities. In Russian regions, conflict resolution and the signing of benefit-sharing agreements takes place mainly within a framework that is typically found in a neopatrimonial society. The local peculiarities of this activity will be discussed hereunder.

5. Findings

5.1. Oil and Local Neopatrimonialism

Authoritarian relations in oil-dependent societies are particularly patrimonial by nature [8,10,11]. They mainly exploit political and economic authority for personal gain through an overwhelming body of informal rules and exchanges. A strictly vertical system of relationships and the presence of a dominating actor are a prerequisite for neopatrimonialism. The accelerated growth of neopatrimonialism in oil-dependent communities is related to the capabilities that authorities gain through oil money and the ensuing limitations. Authorities are given a possibility to generate hyper profits without substantially reforming the economy and society. Meanwhile, they need not have any economic interest in the local residents because of the confidentiality of hyper oil profits and a nontransparent system of profit distribution [8]. Interaction between oil companies, authorities and indigenous people typically exhibits the following features.

First, the interaction is based on a hierarchical model that entails the domination of a certain group of actors in the decision-making process, while the rest of the stakeholders try to adapt to the dominant actor's disposition. At the regional level, oil companies and authorities are the dominant actors. The rest of the actors attempt to establish good relations with them and to seek their support. This enables them to attain financial support for arranging events in villages, purchasing necessary equipment for schools and hospitals, paying for air travel from settlements to the regional centers, organizing events in cultural centers and libraries, and constructing residential buildings.

Second, this interaction is personalized and its success depends on personal contacts. Formal rules are not as much of a key factor in such interaction as are established contacts: "*Their (company's) director has changed, so we need to go and establish contact. The first contact is the most important one. If he gets a good feeling about us, he will give us something. Earlier, we used to take the longer path. But when you go straight to the director, everything is decided very fast. It all depends on whether you can establish a good relation with the director. Go there to decide on some matters: overflows and other such things*" (Director of a reindeer farm, NAO, 2017).

Third, the relationships are based on semi-formal exchange. This takes place among various groups and helps distribute the oil rent among them. Despite the fact that oil companies get their main permits and licenses from the federal authorities, some matters of influence, related to bureaucratic processes, are in the hands of regional authorities.

Overall, in order to succeed, companies must obtain regional support. To gain it, they are required to make significant social investments, which leads to an overall improvement of the economic and social climate of the region. Semi-formal exchange between oil companies and authorities enables social patronage practices that benefit the majority of the population. It also helps to maintain economic prosperity and political stability in the regions: "*Let's do this and that. The governor has signed a new agreement on the first of May. Under this agreement a lot of money was allocated for road repairs in the city, since soon we will have elections, hence people might show annoyance"* (Representative of an oil company, KMAO, 2014).

The fourth feature is the variability of formal rules concerning the redistribution of funds. In a number of cases, the presence of formal rules is not the only basis for making decisions. Until the end of the 2000s, the amount and form of compensation to indigenous people was determined during the course of informal negotiations between the local leaders and company managers. The outcomes of such negotiations could be unknown to both the authorities and the members of the community. However, the existence of formal rules does not necessarily change the situation. If the rules contradict the interests of the dominating stakeholders, they are either revised or adjusted when applied. For example, issuing a method of calculating the amount of compensation when annexing agricultural land for industrial purposes did formalize the interaction between companies and reindeer herders. However, a few years later—in 2017—the method was revised, which led to a reduction in the amount of compensation. In many cases, despite the legally affirmed rights of indigenous people to their traditional territory,

they usually cannot stop oil companies from using the land for oil production: *"They are obligated to get our consent under 145 regional laws. We cannot say yes or no. As per their understanding, we must always say yes. If we say no, they start pressuring us"* (Indigenous person, KMAO, 2014). For example, in a conflict between locals and oil companies in KMAO caused by oil production in the area of Lake Numto, the company initially tried to use formal tools of conflict resolution. They conducted open hearings and considered various options of compensating the indigenous people. However, when the locals refused to accept any form of oil production in the area, the company lobbied its interests through the regional authorities, who shared the values of economic prosperity with them [34,38].

Overall, the neopatrimonial system of relations affects the distribution of funds among companies, authorities and indigenous people and influences the social and cultural practices of local communities. In the following, we will take a detailed look at this influence by discussing the cultural consequences of agreements between oil companies and indigenous people.

5.2. Traditional Culture and Petroleum Patronage

Social patronage, inherent in oil-dependent communities, is best depicted in the field of culture. Oil and gas companies often participate in the financing and support of various projects related to preservation of the traditional culture of indigenous people. This corporate support can be considered as a form of benefit sharing. It helps companies to convince their western partners of how well they comply with international standards regarding indigenous people. Apart from that, even minor spending on cultural events enables them to gain the approval of indigenous residents. This support includes a number of typical features. The most common cultural programs are related to the financing of traditional festivities [42–44], where indigenous people hold national sports competitions, arrange folklore performances, have national dress competitions, and perform ancient pagan rituals. During these festivities, also meetings between the authorities, companies and locals are arranged. The most popular of these events is the Reindeer Herder's Day. Companies assist in the arrangement of this occasion by covering transportation costs and by purchasing necessary goods, gifts and prizes.

Another important target of financial assistance from oil companies is the preservation of traditional crafts. This assistance is offered to master's and regular courses at schools or cultural centers in wood carving, weaving, embroidery etc. On these courses, students make for instance national dresses, traditional toys and crockery, and items used in performing pagan rituals. According to educational programs, the main objective of such courses is the acquisition of traditional knowledge. Meanwhile, a number of experts note that the function of the courses is to convert knowledge into folklore, rather than propagating its practical applications [45]. The students are familiarized with typical elements of national culture that were created in the past and adhere to a single uniform standard. Often, however, people have already lost the skills needed to prepare such items. In such cases, some items must be ordered from masters in other regions so that they can be placed on display in cultural centers and regional museums.

Companies also give financial assistance to national language preservation projects. The money received is spent for example on printing books containing fairytales and songs in national languages.

Interestingly, representatives of oil companies are convinced that such projects help preserve indigenous peoples' traditions that existed before the Soviet era. In fact, most of these projects are aimed at the reproduction of cultural practices created by the Soviet authorities. For example, indigenous people's fairytales and songs could not even be published without the alphabet that Soviet authorities created for them. Another example of Soviet influence is the widely known Reindeer Herder's Day, which is often presented as an indisputable proof of the preservation of ancestral tradition. However, it is actually a Soviet invention, and was celebrated for the first time in 1932. An article entitled *Down with the Old Holidays*! in a 1932 issue of the Soviet newspaper *Nyaryana vynder* reads: *"Earlier, the Nenets celebrated old holidays . . . But a new life has begun. Today, Party and Komsomol cells were formed here for the first time; they held a meeting and decided not to celebrate old church holidays in the tundra. Instead of Elijah's Day they will now create their own holiday on 1 August, which they have named "Reindeer Day." This is a*

new rational holiday. We should support it and make it a holiday for all the Nenets people of the okrug" [46]. The Soviet holiday was dedicated to the profession of reindeer herding. This suggested that reindeer herding was perceived as professional activity, not as a lifestyle practiced by the nomadic Nenets for centuries. As seen from the newspaper article, the goal of this holiday was to abolish old, partly Christianized pagan traditions and to promote new values.

The preparation of traditional items has been adjusted to make them more conspicuous and to bring the indigenous lifestyle to the attention of oil companies and authorities, in particular. Therefore, traditional festival costumes are sewn in vivid colors to attract the attention of the audience. As some regions have already lost the knowledge and skills needed for preparing traditional items, they are ordered from other regions and from people who may have nothing to do with the culture in question: "*On Reindeer Herder's Day we now wear stylized clothes. For example, the deerskin parka has decreased in size. Now we call them miniskirts. Why? Because it has to look spectacular on stage*" (Local resident, KMAO, 2014). Most of the cultural plans are aimed at preserving traditionalism by creating folklore ensembles, reviving old crafts, publishing old tales and legends, arranging national festivities etc.

A few main issues determining the nature of cultural projects supported by oil companies in the Russian regions can be identified. The first and most important one is related to the goals sought by the companies when they participate in the cultural programs of local communities. Rather than developing and preserving local culture, such corporate programs are focused on minimizing the risks bearing down on the company's activity in the region [35]. From the company point of view, cultural events serve to legitimize oil companies in the eyes of local communities and thereby to reduce the likelihood of conflicts [4,12]. Focusing on national culture helps oil companies to create a historical justification for their operation, to relate modern industrial activity with the locality's history. For locals, these events are an opportunity to draw the attention of the stronger actors—authorities and businesses—to local problems. All the while, companies emphasize their financial support in carrying out such events and thereby show their social responsibility. This instrumental approach to culture is typical for both authorities and corporations. Therefore, many projects in the sphere of culture have little to do with culture, and are instead cultural charades that make local communities shift their attention from more acute issues to cultural ones.

The second important issue involves assuming a paternalistic attitude towards indigenous people [34,39]. This concerns state policies as well as corporate projects. In an attempt to support local culture in Russian regions, oil companies reproduce the same practices as Russian authorities typically do. In most cases, corporations prefer to interact not with local people, but with state authorities, providing them with funds to develop the regions at their own discretion. The authorities, for their part, then distribute the gained funds using traditional command-and-control methods. The paternalistic attitude towards grantees is reinforced by a lack of company interest in local residents. Local people, who lack the necessary qualifications and skills, are of no interest to companies as potential employees. Therefore, companies establish charitable relations with indigenous people. As a result, charity programs do not help in balancing the social scene or in fostering culture. Even when oil and gas companies attempt to apply a project approach towards the implementation of social and cultural undertakings in the regions, it does not change the situation much. Despite the fact that the project approach enables the development of local initiatives, the selection of projects is based on a traditionalistic approach to culture.

Third, a definite limitation in developing and selecting cultural programs is oil companies' stereotypical thinking regarding indigenous culture. One of the main stereotypical ideas concerning indigenous culture is that it is an unchanging lifestyle. Despite the fact that many indigenous peoples still engage in traditional activities related to nomadic reindeer herding, fishing and hunting, they regularly use modern equipment, such as satellite phones, diesel-powered generators, snowmobiles etc. This astonishes nonlocal stakeholders. *"They already can't imagine themselves without snowmobiles. And this is no traditional lifestyle. The traditional lifestyle is the reindeer sleigh. And no diesel stations. [Laughs.] Because the traditional lifestyle is the way your ancestors lived. Of course, they didn't have anything*

like that"(Manager of an oil company, KMAO, 2014). External actors arrange their expectations and demands regarding a given culture on the basis of stereotypes [42]. The only projects that attain support correspond to the dominating stakeholders' ideas about traditional culture. Hence, when planning cultural programs, indigenous people consider not only the needs of their own community, but also the expectations of external actors sponsoring the events.

According to R. Douglas, a community's dependence on oil production influences its culture. In other words, the more a community depends on oil-related revenue, the more its culture depends on the provider of oil rent. This prompts it to apply a vertically integrated structure, through which it loses space for creativity [4]. Broadly speaking, the vertical integration of culture into the economy leads to the formation of an aggregate of cultural values that propagates all over the country. This propagation is due to broader social processes and the adoption of a broader set of norms and values inherent in an oil-dependent society. It also gives birth to new myths and rituals in society.

5.3. Myths and Rituals of the Oil-Dependent Society

The effectiveness and use of formal rules governing the distribution of benefits between oil companies, authorities and indigenous people are mostly determined by the values and norms prevailing in a given society. The specifics of political and economic systems designed to support oil production influence the spread of certain myths and rituals in society. The terms "myths" and "rituals", however, do not necessarily translate into either fabulousness or ineffectiveness. First of all, these terms indicate one of the basic functions of the conducted events—the legitimization of values in a given society. Second, they highlight faith in certain events and procedures. Institutional theory deals with institutional mimicry, which means that the more successful institutional experiments are, the more actors elsewhere copy or reproduce them. In so doing, the initial idea behind the effective rules is lost and institutional reproduction remains only a ritual. In the following, we discuss some examples of institutional mimicry.

The fundamental beliefs of an oil-dependent society sprout from faith in technology, from the predictability of risks and from the presence of a uniform pyramid of values. An analysis of corporate reports and state documentation, available at the Ministry of Economic Development and Department of Natural Resources websites, indicates a focus on the development of safe and efficient technologies for the production and processing of oil. In most of the interviews with authorities and representatives of oil and gas companies, the phrase "*All risks are calculated*" is stated. But in practice, many of the calculations behind the phrase have been made without considering all possible consequences. Such calculations did not help retain fish populations in northern rivers or prevent oil spills and other industrial accidents. The belief in minimizing risks is closely connected to the conviction that all aspects of human activity can be converted into quantitative indicators and monetized—from the effects of oil drilling on soil and water all the way to the value of human life. Some believe that damage can always be first calculated with a certain method and then paid for. However, the paid amounts are not always comparable to the realized loss and cost. Apart from that, the extent of compensation is determined in federal and regional laws, on which the stronger stakeholders often have more influence than the weaker ones.

The beliefs prevailing in oil-dependent societies also lean on widespread cross-hierarchical values, according to which material prosperity outweighs the ecological aspects of oil production and the values of local culture. The basic assumption is that prosperity has the same meaning for all stakeholders. For example, it is taken for granted that all local residents will appreciate new roads. However, among reindeer herders and other traditional communities, people may find the construction of roads alarming because it will allow nonlocal stakeholders easy access to their land, hunting grounds, reindeer farms and holy places. Another example demonstrating the difference between the hierarchical values of oil companies and indigenous people concerns the annexation of land. Local residents practicing a traditional lifestyle often consider authority over their ancestral territories more important than financial compensation from oil companies: "*Many can be bought out, but many don't, because what will*

we leave for our future generations? Do we want them to say: "Our grandfathers sold everything" (Indigenous resident, KMAO, 2014).

Another belief among oil-dependent communities manifests itself as faith in the infinite financial capacity of the oil industry. The majority of people in Russia think that oil companies, if willing, can resolve all material problems in the territories where they do business: "*Those who have oil companies in their area are the lucky ones*" (Chief of a reindeer farm, NAO, 2016). However, people seldom realize that the budgets of oil companies have their limitations and cannot cover all the needs of the people.

This belief is supported by the rituals, of which there are two main groups in oil-dependent societies: rituals of public participation and rituals of demonstrating the credibility of calculating and evaluating risks.

The first group of rituals consists of activities such as public hearings and consultations with people, provision of feedback to industrial concerns and authorities, public declaration of standards of social responsibility, creation of coordination councils, and publication of corporate policies and reports. The second group of rituals consists of conducting examinations and audits. Russian legislation stipulates for a mandatory environmental impact assessment (EIA) procedure. Apart from that, companies that function under international standards and are backed by international financial banks must conduct additional risk evaluations to meet the requirements of their international investors. It is to be noted that instead of being a waste of time, arrangements such as public assemblies, expert evaluations and coordination councils actually enable local residents to take part in decision making and in assessing certain risks. These arrangements often promote the local residents' interests and help to avert possible conflicts. However, their effectiveness should not be overestimated. In a number of cases, public hearings are little more than an imitation of public participation and the evaluations are erroneous. Public meetings sometimes concentrate on formalities instead of discussing project details with the locals. In such cases, the hearings may be held in such a way that the locals either do not know about them or are unable to participate because they live far away and cannot travel to the venue: "*We don't demand millions. We just want to be left with some land. I ask them not to drill here, but they insist. They have occupied the territory and we are as if in a cage. They don't back off. You cannot say NO*" (Indigenous resident, KMAO, 2017). On the one hand, the meetings help to take the local views into consideration and to avert the negative impacts of industrial activity. On the other hand, extreme confidence in calculating all conceivable risks and the ritualization of the public procedures reduces local residents' vigilance when faced with the industrial use of natural resources.

6. Conclusions

The dependence of society on a natural resource affects the development of economic, political and social institutions. The dependence also correlates closely with the rules and practices prevailing in this society [8,9]. Hence, oil as a key resource affects various changes taking place in society. The availability of oil and the associated super-profits make it possible to maintain a neopatrimonial system of relations in society and to reduce the dependence of the authorities on society. At the local level, this is manifested in a hierarchical system of relations based on access to oil resources, the opacity of the decision-making process and the variability of formal rules governed by the dominant players. Supported by oil-based wellbeing, the social system stimulates the ritualization of procedures related to public participation in decision making and strengthens informal exchange. Oil and gas companies act as agents of oil-dependent communities and transmit the relevant values and beliefs to the people. This leads to a transformation of norms in local communities that start to adopt new behavioral patterns and to form ideas based on a belief in the predictability of risks and the unlimited financial capacity of oil companies. Currently, traditional livelihoods such as reindeer herding, fishing and hunting no longer provide sustenance for locals. Meanwhile, subsidies from the oil industry and the state help to keep villages alive. Intensive oil production and the spreading market economy lead to a future departure of indigenous people from the notion of measure of necessity, which has been a key value of traditional societies. Owing to this change in values, nature is becoming primarily a source of material

prosperity. This stimulates the formation of a universal pyramid of values dominated by economic priorities. People's faith in the financial capacity and assistance of oil companies makes it difficult for local communities to develop their own projects.

It is important to note that natural resources per se do not have any positive or negative connotations. The outcome of their use is determined not so much by the nature of the resource as by the institutional structure of a given society [8]. Insufficient development of institutions of civil participation and an abundance of informal interaction leads to asymmetric access to valuable resources and unequal distribution of the resulting benefits. When indigenous people are not heard, it will inflict considerable damage upon their values and culture. This may cause discomfort among the population and lead to conflicts. One of the key questions regarding conflicts pertains to the amounts as well as the terms and conditions of the distribution of oil revenues. Conflicts have often been resolved merely by allowing oil companies to determine the amount of compensation instead of amending the applicable rules and incorporating the local residents in the decision-making process. Exceptions to the common practice are mostly the result of pressure exerted by external actors rather than the effectiveness of local communities. For example in Sakhalin, indigenous people gained the right to participate in the distribution of grants from the oil and gas companies Sakhalin Energy and Exxon and to engage in the environmental monitoring of their activities. However, the rules were changed in this case because of pressure exerted by foreign investors Therefore, it would not be justified to conclude that conflicts related to oil rent contribute to the construction of a civil society.

Nevertheless, these conflicts forced the state authorities to draft relevant laws that protect the rights of indigenous people. On the other hand, they also forced corporations to pay more attention to interaction with the communities. This resulted in the institutionalization of an arrangement referred to as the Benefits Sharing Agreement. The neopatrimonial framework of power relations in Russian society determines the general trends of institutionalization regarding such agreements. In Russian practice, these agreements take different forms, ranging from semi-formal agreements between companies and local communities to formal compensation and partnership programs. The agreements have both positive and negative effects. The ways in which the agreements are implemented affects the further development of local communities (see Figure 2).

On the one hand, the agreements enable local communities to receive material compensation from companies. This compensation is used by residents to purchase equipment and technology. It also allows them to increase the profitability of their farms and to engage in traditional economic activity in the market space. The development of social infrastructure in local settlements, carried out within the framework of partnership agreements between the authorities, companies and local communities, leads to improved quality of life. Residential houses, schools, hospitals, sports complexes and houses of culture are being built in villages. On the other hand, great expectations concerning financial assistance and compensation to be received from oil companies increases the dependence of local communities on oil money and forces the residents to follow the preferences of the dominant players in the development of social and cultural programs. Oil patronage in the field of culture leads to the development of souvenir cultural practices conforming to the needs and expectations of the dominant players.

In the Russian context, benefit-sharing agreements have specific features. First, they are controlled by the state. In the Russian regions, state authorities play an important role in the signing of agreements. For example, it is the authorities who negotiate with companies about the amount and forms of support they are to give to communities on the regional and local levels. Even when an agreement is concluded between a company and a nongovernmental organization that protects the rights of indigenous people, the negotiations are greatly influenced by the state. As a result, the values of the oil Leviathan dominate the negotiations. Economic prosperity and social benefits overrule environmental concerns and the values of indigenous cultures.

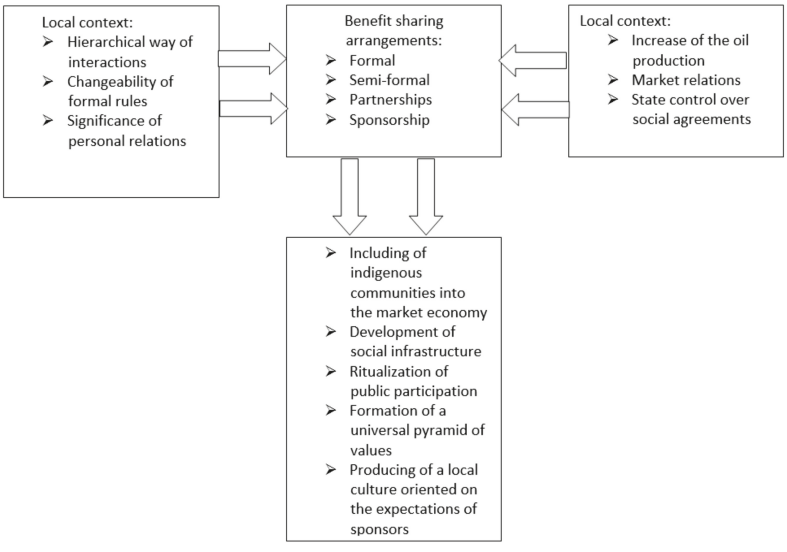

Figure 2. Benefit-sharing arrangements in oil dependent communities.

Second, despite the fact that in the last decade the relations between oil companies and indigenous people have been formalized, informal rules that tend to promote the interests of the stronger stakeholders still play a major role. In such situations, the formal rules that should reduce the negative effects of oil production on society and the environment can turn into rituals and lose their significance. Despite the existence of formal rules, indigenous people are often stripped off any possibility to participate in the decision-making processes regarding their residential area. The majority of decision makers and other stakeholder groups share the values of the oil Leviathan and think that the prosperity of their region stems from the oil industry and that any damage to the environment or loss of traditional culture can be repaired with money.

Third, when formal rules are implemented in accordance with their essence, it can lead to unforeseen consequences. In other words, such procedures as risk evaluation and audits must be focused on the impacts of oil production on local communities and the environment. Otherwise they can produce a "Soporific effect", and a situation may arise where a stern belief in the effectiveness of these procedures eventually decreases public concern over adverse industrial impacts.

Further research may provide a more detailed analysis of the social and cultural consequences of economic compensation in oil-dependent communities. That said, the role of compensation agreements in conflict resolution is an interesting topic of investigation. On the one hand, compensation can neutralize contradictions between companies and communities. On the other, competition for corporate support can increase conflicts within communities. In addition, material compensation does not always help to resolve contradictions between groups of actors with contradicting values.

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Article

The Compensation for Losses to Indigenous Peoples Due to the Arctic Industrial Development in Benefit Sharing Paradigm

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Abstract: This article discusses the results of research on the benefit sharing system in Russia focusing on compensation of losses to indigenous peoples due to industrial development in the Arctic. The authors analyzed a Russian case-study on the economic mechanisms of coordination and harmonization of multi-vector and conflicting interests in the process of industrial development of traditional lands. The developed recommendations will allow, on the one hand, compensating the losses of the indigenous communities, and, on the other hand, to engage indigenous peoples in the process of environmental management and socio-economic development of their territories. The object of the research was the Republic of Sakha and the indigenous communities of the remote Anabar region. The calculation of losses was considered. The authors suggest using this tool for the traditional lands development, because it helps to define fair compensation due to project impacts and to form a fund for sustainable community development. The considered project was exploring and extracting placer diamonds in Polovinnaya River in Yakutia. This paper also presents the social poll results organized in the indigenous communities in 2017. The results helped to formulate the recommendations for the business on benefit sharing agreements with Anabar communities.

Keywords: benefit sharing; indigenous peoples; investment projects; traditional nature management; economic mechanism; losses; compensation; the Arctic; Russia; Yakutia

1. Introduction

Currently, large-scale investment projects are being implemented in the Russian Arctic to develop eight core zones: Kola, Arkhangelsk, Nenets, Vorkuta, Yamalo-Nenets, Taimyr-Turukhanskiy, Northern Yakutia and Chukotka [1,2]. Some Russian regions located in the north are the most important strategic territories in terms of natural resources development, exploration and extraction of many minerals (hydrocarbons, gold, silver, diamonds, platinum, ferrous and non-ferrous metals, rare earth raw materials, etc.). At the same time, the intensive development of these territories is often accompanied by the impact on the traditional lands of indigenous peoples and is in contradiction with their way of life and traditional crafts, complicating their livelihoods, including the land withdrawing process used by indigenous communities. These projects are largely related to the exploration and mining of raw materials, transport and economic infrastructure development or military security reasons. The investment projects implementation on core zones development in the Russian Arctic may affect the territories of traditional nature use and influence the traditional lands of the indigenous peoples of the North. Insufficient consideration of the environmental and ethnological component in the justification and implementation of such investment projects in the territories of traditional residence and traditional economic activities of indigenous peoples can lead to conflicts [3]. The purpose of the

article is to improve theoretical approaches and methods, currently used in Russia, for estimating possible losses of indigenous peoples that arise from the impact of exploration and mining of mineral resources in their traditional territories.

The governmental concept of sustainable development of indigenous peoples of the North, Siberia and the Far East of the Russian Federation (2009) was adopted for the development and preservation the traditional lands and traditional nature use. Although the Federal Law of 30 April 1999 No.82-FZ "On the Guarantees of the Rights of the Indigenous Minorities of the Russian Federation" established the legal basis for the rights of the original socio-economic and cultural development of the indigenous minorities, the protection of their traditional lands, traditional lifestyle, management and pastures, the current legislation does not regulate the procedure for losses' compensation due to business economic activities on the traditional lands [4]. We discuss the development and application at the federal level of the losses' compensation methods caused to indigenous peoples and their communities by business organizations of all types of activities. Under these conditions, an important scientific and practical task is the development of effective management tools and mechanisms for regulating and harmonizing relations between business and indigenous peoples during the industrial development of the Arctic.

The Republic of Sakha (Yakutia) is a raw material region, with mining as the leading industry, which is accompanied by negative environmental and social consequences. Indigenous peoples of the North can engage in economic activities only on undisturbed or minimally disturbed lands. The deterioration of the environment and the reduction of reserves of renewable resources has a devastating impact not only on traditional types of environmental management, but also on their mentality, culture and traditions. From this point of view, one of the most acute problems for indigenous peoples is the question of fair compensation for the damage caused by industrial enterprises to territories of traditional nature use, which in turn cause losses to indigenous communities. To solve this problem, it is necessary to develop a methodology for estimating losses of landowners and creating economic mechanisms for the sustainable development of traditional environmental management areas in the context of investment projects in the Arctic. On the other hand, the law does not regulate the procedure for compensation for losses from the economic activities of organizations in the places of traditional residence and traditional economic activities of indigenous peoples [4]. According to Indigenous and Tribal Peoples Convention, the handicrafts, rural- and community-based industries, and subsistence economy and traditional activities of the peoples concerned, such as hunting, fishing, trapping and gathering, shall be recognized as important factors in the maintenance of their cultures and in their economic self-reliance and development. Governments shall, with the participation of these people and whenever appropriate, ensure that these activities are strengthened and promoted [5]. Compensation is considered as a payment for damages that have been caused by an industrial object to indigenous peoples. Compensation from a subsoil user can be monetary (payments to a community member or tribal community) and non-monetary (construction of social or transport infrastructure, implementation of projects for the preservation of cultural heritage, etc.). To ensure the implementation of the Convention, the state is obliged to improve the mechanisms that allow indigenous communities to maintain their handicrafts, receive compensation as a form of economic guarantees of their rights. In Russia, the economic rights of the indigenous peoples are still developing due to the failure of legislation.

For example, in Russia in 2018, two federal legislative acts came into conflict: the Federal Law "On Guarantees of the Rights of the Indigenous Minorities of the Russian Federation" and the Land Code of the Russian Federation. On the one hand, the federal law guarantees small peoples and their associations the free use of lands of various categories in places of traditional residence and traditional economic activities. However, in accordance with the Land Code of the Russian Federation, to persons belonging to the indigenous peoples of the North and their communities, land plots are provided for free use only to accommodate buildings and structures necessary for the preservation and development of traditional lifestyles, business and crafts. As professor A. Sleptsov explained "land plots from agricultural lands in state or municipal ownership may be transferred to the indigenous

peoples' communities for agricultural production, preservation and development of the traditional way of life, management and crafts of the indigenous peoples for rent. At the same time the purchase of the leased land plot into the private property is not allowed" [6]. According to the Land Code from 1 January 2018, the communities of indigenous peoples need to pay rent. This concerns those farms that did not manage to register their land plots for free use in the federal land cadaster and were forced to arrange deer and hunting lands for rent, as well as for newly formed farms of the indigenous peoples. Since, in the Arctic, reindeer pastures and hunting lands occupy huge areas, these rental payments amount to millions of rubles. This conflict in Russian legislation requires speedy resolution; at present, amendments to the Land Code are being considered in the federal parliament. Thus, issues of land rights of indigenous communities and the compensation for losses due to industrial development for damage caused to the territories of traditional nature use are interrelated.

The difficulty of developing a methodology for estimating and compensating for the losses of indigenous peoples in the context of Arctic industrial development also consists in the lack of unity of theoretical approaches and conceptual apparatus in solving this problem. For example, there are studies about the losses of traditional economic activities in the zone of reindeer herding [7] as well as the economic assessment of the damage caused to Arctic ecosystems during the development of oil and gas and other natural resources or the damage caused to traditional environmental management [8,9]. In Russian scientific literature, there is term definition of losses of land users, owners during extraction of minerals in the Russian Arctic, but not the losses of indigenous communities [10]. In our opinion, during the development of the methodology and mechanisms for sustainable environmental management in the Arctic zone, we should talk about compensation of lost profits and losses to the indigenous peoples of the North, their associations, and tribal communities as a result of the implementation of certain industrial projects [11].

2. The Study Area

The object of the research was the indigenous communities of the Anabar Dolgan-Even national region, Republic of Sakha (Yakutia). The region is located in the extreme northwest of the Republic of Sakha (Yakutia), between the 71st and 76th degrees of northern latitude. It occupies a vast area of 55.6 thousand km^2 and borders in the north with the Laptev Sea. More than 3400 people live in the Anabar region. The share of indigenous peoples of the North in the population of the area is 37%.

Only herding of semi-domesticated reindeer, hunting wild reindeer and white fox, and fishing are of economic importance here. Currently, there are two settlements in the region. The village of Saskylakh is the district center of the Anabar region, where the Evens live. The village of Urung Khaya is the only settlement in the Republic where compactly live the Dolgans, Figure 1.

The Anabar River flows through the territory of the region, one of the largest rivers in the Arctic Ocean basin. The organization of river navigation has created the prerequisites for the development of the productive forces of the vast Anabar region. The region has diamond deposits, hydrocarbon raw materials, and brown coal. Historically, the main economic activity of the Anabar area is agricultural production. Traditionally, the population of the region is engaged in reindeer herding, hunting, and fishing. The most important condition for the growth of the regional economy and the welfare of the population is the development of the mining industry. Today, three diamond-mining enterprises successfully work in the territory owned by Alrosa. The area of industrial enterprise activity for the mineral wealth development expands every year. The municipality has long-term cooperation agreements with all diamond-mining enterprises. Every year, about 150 people from the local communities are enrolled in seasonal diamond mining enterprises.

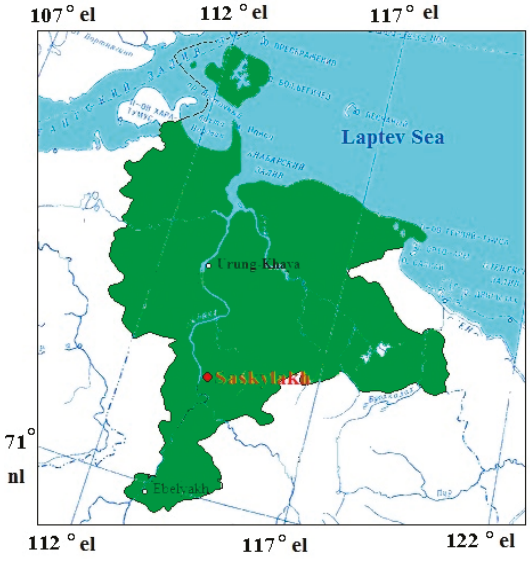

Figure 1. Anabar Dolgan-Even national region, Republic of Sakha (Yakutia): the study area (Source: https://web.archive.org/web/20090425140901/; http://www.sitc.ru/monitoring/anabar/index.shtml).

The ethno-social composition of the Anabar region is represented mainly by two groups: the Evens and the Dolgans. The socio-economic situation in the Anabar region is ambiguous. In the region, there is a high birth rate, unlike other northern regions of Yakutia. However, in the region, there is an increase in the migration loss of the population, an outflow of labor resources due to the tense situation on the labor market, Figure 2.

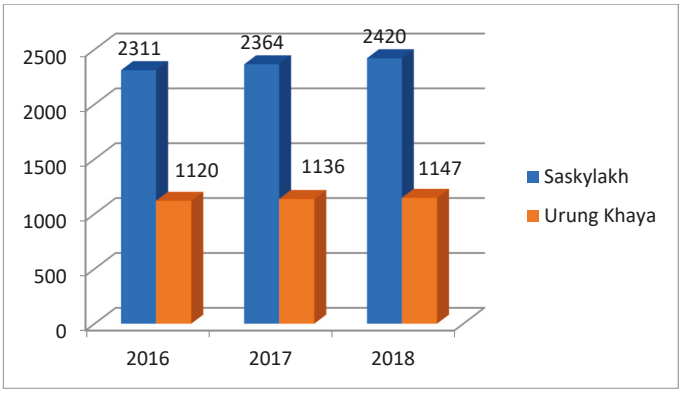

Figure 2. The population of Anabar region, Yakutia.

The main causes of adult mortality are infectious and parasitic diseases of neoplasms, diseases of the circulatory system, diseases of the respiratory organs, diseases of the digestive organs, and external causes. Most deaths among external causes are due to alcohol poisoning and suicides [12]. The main cause could be connected with poor economic conditions and high degree of unemployment in the region. In the Soviet period, the handicraft activities were engaged in the public enterprises, and the employment rate was up to 100%. Nowadays, the traditional activities decrease due to low income in this sector and youth outflows.

The sectoral structure of the economy is represented by the following elements:

1. Agriculture and processing of agricultural products
2. Fisheries
3. Personal part-time farm
4. Entrepreneurship
5. Transportation
6. Communication
7. Trade and consumer market

The analysis of statistical data showed that at present the sectoral structure of the Anabar regional economy has narrowed considerably but the big industry is diamond mining. Branches of traditional management are the basis of the tribal communities and municipal enterprises of the district. In the region, 10% of the reindeer population of Yakutia are concentrated. It increases annually (+11% in 2018 compared to 2017). Reindeer carrying capacity is 18,000. At present, in Anabar region, there are 15,409 reindeers managed by eight reindeer herding communities.

In 2017, during the Arctic research expedition, a social survey was organized by the authors in both Anabar villages to study the behavioral and social attitudes of local residents to the implementation of a mineral exploration project on the Polovinnaya River with the following objectives, Figure 3:

- Identify the attitudes of local residents to the socio-economic and environmental problems of the Anabar region to develop recommendations for improving the quality of life in the area.
- Identify the most promising areas of development of the area.
- Identify the correlation of age and other socio-demographic indicators of the population with the perception of the socio-economic and environmental problems of the area, as well as economic activities for the extraction of minerals.
- Identify the attitude of local residents to the economic activities of companies in the exploration and mining of minerals.
- Determine the possible compensation format for conducting mining operations in the district.
- Analyze the needs and attitudes of local residents, which must be considered by companies when carrying out economic activities for the extraction of minerals in the license area.

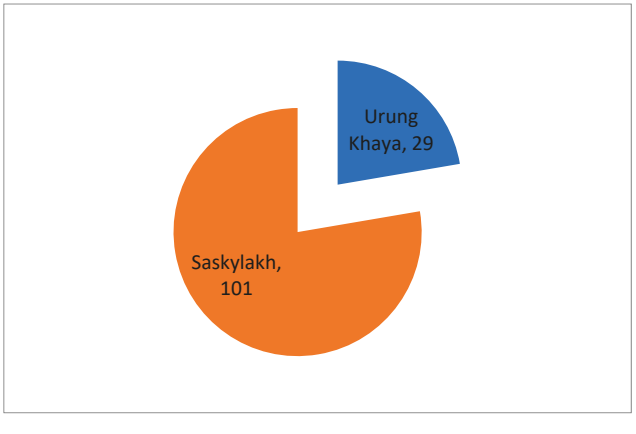

Figure 3. Respondents in Saskylakh and Urung Khaya villages (total number of respondents: 130).

The Socio-demographic characteristics of the respondents, Table 1

- Men—59 people (45%).
- Women—71 people (55%).

Representatives of indigenous peoples:

- Evenki—43 people (33%).
- Dolgans—71 people (55%).

Family status

- Married—63.1%.
- Not married—22.3%.
- Divorced—6.9%.
- Widowed—7.7%.

Number of children among respondents

- No—11.5%.
- 1 child—13.8%.
- 2 children—52.3%.
- 3 or more children—22.3%.

Table 1. Structure of respondents by type of activity.

Type of Activity	Respondents, ppl	Share of the Total Number of Respondents %
Employed	86	66.2
Unemployed	12	9.2
Temporarily unemployed	11	8.5
Retiree	14	10.8
Housewife	2	1.5
Student	4	3.1
Other	1	0.8
Total	130	100.0

Residents of the district are most concerned about high food prices (22.5%), while respondents note that the problem lies not only in high prices, but also in the inaccessibility of essential foodstuffs. In a qualitative analysis of the respondents' answers, there is a lack of fresh vegetables and fruits. Note that the amount of monthly income does not affect the degree of perception of this problem, which emphasizes the objectivity of the problem. Respondents (about 5% of all respondents) also noted such a problem as overcharging of air tickets. Other most acute problems of the district are the lack of jobs and low incomes; these problems are especially marked by respondents aged from 30 to 50 years, Figure 4.

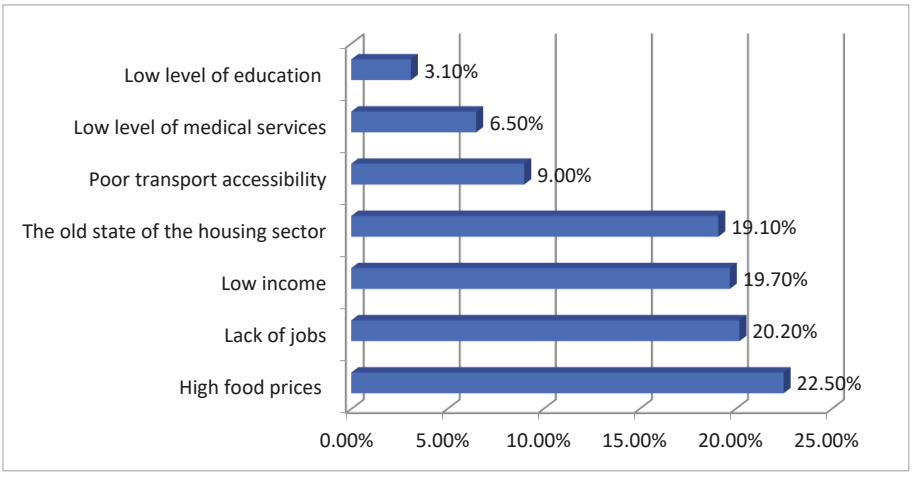

Figure 4. Socio-economic problems that concern residents of the area.

Assessing the social and cultural problems of the development of the territory, residents first note such negative phenomena as an increase in morbidity and mortality (20.7%), alcoholism (18.3%) and a loss of communication between people and their culture and traditions (18.3%). It is important to understand that the process of increasing morbidity and mortality is directly related to the quality of medical services, but the respondents do not single out aspects of the quality of medical services as the most significant problems, which can be explained by the low level of general understanding of human health culture. In addition, respondents note that the increase in the number of deaths is due to the lack of infrastructure designed for local climatic conditions. Thus, it is noted that there are no conditions for the conduct of pregnancy and childbirth, while low transport accessibility leads to the death of people in the tundra. Answers of respondents were distributed almost evenly among all the suggested answers, which indicates the high importance of the whole spectrum of the presented problems.

Residents consider the reduction of the number of deer and the change in the ways of their migration to be the most significant environmental problem. The respondents expressed particular concern regarding the quality of the groundwater and the decrease in water in the Anabar River. The results of sociological studies also show that the problem of the export of scrap metal and increased background radiation in the district is particularly acute.

Traditional handicrafts are popular with men aged 40–50 years. However, the attitude and assessment of traditional handicrafts among the local population is very different and controversial. About 14% of respondents noted that income from traditional crafts is the only source of income. This suggests that the occupation of traditional crafts is not the dominant source of income. Moreover, respondents engaged in traditional crafts consider themselves to be unemployed, and, therefore, ready for other types of activity and willing to be employed. On average, income from traditional industries among the population ranges 20–30 thousand rubles, which is on the same level as income from other fields of activity. About 20% of respondents in addition to their regular work are engaged in traditional crafts, the majority of whom (16%) are engaged in fishing. Moreover, such additional employment does not bring income: only about 30% of respondents say that extra employment brings additional earnings. Respondents shared willingly that one of the types of such earnings is the collection of mammoth tusks. Many have pointed out that this work is hard and does not bring a stable level of income and is associated with a risk to life. Describing the occupation of traditional crafts, it should be noted a downward trend in the proportion of the population engaged in this type of activity in Anabar region. These data may also indicate readiness for other types of work.

For the preservation and further development of the traditional sectors of the North, the material and technical base of farms need to be improved, as do the food supply and the social and living conditions of reindeer herding families and their production conditions. One of the important tasks at the present stage of traditional industry development is the creation of conditions for the procurement, processing and marketing of products of traditional sectors. It is necessary to create conditions for the transportation of products to the point of sale. The benefit sharing agreements with subsoil users and business participation in the socio-economic development of the municipal district through projects on traditional culture support are one of the mechanisms for overcoming the crisis of the indigenous communities in Yakutia.

3. Concepts and Methods

The peculiarity of the benefit sharing mechanism during industrial development of the Arctic territories abroad supposes the participation of indigenous peoples in the distribution of profits of mining companies. In Russia, business and local communities interact based on compensation payments and agreements on the socio-economic development of their territory. For example, in the United States and Canada, such a mechanism for the distribution of benefits in the interaction of business and indigenous peoples is usually reduced to the problem of the distribution of financial benefits (profits) with the participation of local communities. Scientists consider the benefit sharing system and community agreements with the subsoil-users urgent. Ciaran O'Faircheallaigh suggested implementing community development agreements as a very important tool, especially in the case of mining industries when local communities are affected by the direct impacts of the industrial objects (environmental pollutions, social threats, etc.). As a rule, environmental and social costs incur in the territory developed by the companies while the profit concentrates in other places. This leads to conflicts between local communities and business [13]. In Canada, the exploration and extraction of mineral resources is currently increasing significantly and this makes government and First Nation communities pay more attention to the responsibility of mining companies as they expand their economic activity into Treaty and Aboriginal lands. In most countries, as a rule, the benefit sharing agreements are confidential and concluded between mining companies and indigenous communities. They are specific for certain project and contain the list of the socio-economic and environmental benefits and responsibilities. During such negotiations, the methods to address local needs and involvement mechanics of tribal communities are the focus of many researchers [14]. Brad Gilmour and Bruce Mellett believed that a contract should be preceded by a deep analysis of potential areas of community life that may be adversely affected by an investment project. In addition, the benefit sharing agreement must address future opportunities that could arise during project realization [15]. Tysiachniouk and Tulaeva considered that, in Russian regions, there are various practices of concluding benefit sharing agreements: the peculiarities of the formation of various models of agreements on the distribution of benefits between oil and gas companies and indigenous peoples should be identified. It is important to understand what is significant in the process of their formation: regional specificity, dependence on international actors, features of corporate policies, the level of self-organization of local communities [16]. However, partnership agreements between subsoil users and indigenous communities should provide as compensation for the land fund use, and direct participation in socio-economic development of the traditional lands. One of the tasks of the local authorities in addition to ensuring the interests of the territory and its inhabitants in relations with the company subsoil user could be the motive and stimulating the population to engage in economic activity using the received compensation payments [17].

Analysis of literary sources and economic practice in the Arctic zone allows us to identify the following areas of wealth distribution during industrial development of the territory:

- Compensation: Indemnification of indigenous peoples of the North and their communities, whose activities decrease due to the project.

- Employment: Vocational training and individual employment of representatives of the indigenous peoples of the North, including in planned projects.
- Partnership and cooperation: Mutually beneficial cooperation of the company and indigenous communities through procurement the products of traditional nature use, traditional crafts.
- Co-management: The inclusion of representatives of the indigenous communities in councils to co-manage the project for industrial development of the territory and the interaction of all stakeholders and other areas.

These forms of benefit sharing, in our opinion, can be complemented by business assistance in processing of traditional products, financing and transferring technologies for the agricultural production, subsidizing the communities for traditional economy development [8,13]. Traditional economy provides an environmentally oriented labor market development—green jobs in environmentally friendly production (meat, fish, berries, herbs, etc.) [6].

In Russia, the benefit sharing agreements can be realized as the Program on mitigation of the negative impact of the project (hereinafter—the Program). Negative impact supposes the changes in the traditional lifestyle of indigenous peoples, the need for adaptation and sustainable socio-economic development of local residents in the context of changes arising during the project. Such program may include:

- contracts for compensation for losses to indigenous peoples and traditional lands;
- employment agreements for the indigenous involvement to project development;
- traditional product procurement;
- traditional cultural and environment conservation (financing of traditional holidays etc.).

For example, in Yakutia, the authors became the initiators of the Program realized by Almazy Anabara JSC (Alrosa) and Arctic Capital LLC. The Program includes contracts with indigenous communities and individual entrepreneurs on procurement of agricultural products (fish, meat, etc.), and construction social and transport infrastructure [13]. Such experience should be practiced in Russia by all companies having projects in the Arctic.

Benefit Sharing Concept in Russia

The problem of protecting the economic rights of indigenous peoples is related to the fact that, in the Land Code of Russia, indigenous communities are not listed as subjects of law. Therefore, the transfer of land to them by law is not provided. Indigenous communities are forced to register as legal entities and then prove the right to land. However, if, for example, the indigenous peoples live in the forest, then the transfer of land is excluded, since the forest is federal property under Russian law. These and other conflicts in land legislation cause problems with the protection of economic rights, and therefore with the damage assessment to indigenous communities due to negative impact of industrial project as well as the compensation. Many indigenous peoples, Koryaks and Evenks, Nenets and Dolgans, during 2005–2006 lost their own national territories and autonomous districts, and they were united with other regions of the Russian Federation. It was a period of enlargement of the territories due to the unification. As a result, there was a derogation of the rights of indigenous peoples, including difficulties related to formal registration rights on traditional environmental management.

In Russia, the underdevelopment of the legislative system for the protection of the economic rights of indigenous peoples, including the distribution of benefits, means that, in a given region, the practice of interaction between indigenous communities and business is different. For example, in the Krasnoyarsk region, the damage to traditional lands is the result of negotiations. The local government does not use any methodology to calculate objective losses of indigenous communities and the traditional nature use. In the Yamalo-Nenets Autonomous District, to estimate losses and compensate indigenous peoples, it is proposed to proceed from the average income per representative of indigenous peoples living in the project's area of influence. Such an approach does not link to the real damage caused to natural resources since the real income of the local population is low.

Therefore, the aim of the study was to summarize and develop approaches to estimate losses to the indigenous peoples. This was based on the experience using this mechanism in the Republic of Sakha (Yakutia) during 2011–2018 in the framework of conducting the ethnological expertise.

As for the terminological apparatus in Russia, the *ethnological expertise* of the project was a scientific study of the impact of changes in the indigenous lands of indigenous peoples and the socio-cultural development of an ethnic group. At present, the Republic of Sakha is the one region of Russia where law on ethnological expertise has been adopted. The act was adopted on 14 April 2010.

The ethnological expertise of the project should determine the degree of admissibility of a project in the territories that affect the places of residence and traditional economic activities of indigenous peoples. It should also determine possible losses of indigenous peoples.

Such an approach can be considered as one of the elements within the framework of the concept of distribution of benefits during the development of the territory in the Arctic.

Among the mechanisms that support traditional livelihoods of indigenous peoples in Russia, we can distinguish the procurement of products (fish, wild reindeer meat, berries, etc.) by the company, as well as the allocation of targeted grants to support traditional crafts and ethnic development. Today, in most benefit sharing cases, compensation payments prevail. During the Soviet period of the Arctic development, the state bore the brunt of responsibility and costs for the socio-economic development of the territory.

The research in Russia and abroad has identified the following types of benefit sharing in Arctic industrial development:

- Paternalism: The state is responsible for the distribution of benefits, and assumes the main functions for the development of the territory. This type of regulation of environmental management has developed, for example, in Alaska, the United States.
- Social responsibility of the company: The mining companies play an important role in the development of traditional nature use areas, and act as the main carriers of goods and distribute them. An example of such companies is Arctic Capital LLC or Almazy Anabara JSC in Yakutia. They engage in mining of placer diamonds and gold in the Arctic regions [13].
- Partnership: This type of interaction has developed on Sakhalin. The public–private partnership realized between a company and local communities aims to distribute the benefits during the natural gas production on the shelf. This also applies to the benefit sharing system in Canada.
- Contract system for distribution of benefits and traditional crafts support: In this case, the main role in benefit sharing belongs to non-governmental organizations that carry out the economic and non-material assistance individually for indigenous peoples, for their families, tribal communities and other groups.
- The shareholder model: This system supposes that indigenous peoples realize their rights as the owners of shares. Such form of the interaction between indigenous peoples and investors has been developed abroad (Australia, USA, and Canada). In Russia, for example, in the Arctic territories of the Yakutia, some indigenous communities express interest in implementing the shareholder model.

In Russia, due to legislative conflicts and the imperfection of the land ownership system of indigenous peoples, the implementation of a shareholder system is difficult, but the practice of implementing the contract system and partnership, as well as social responsibility, is well developed. However, in each case listed, the basis of negotiations on measures to support the local population should be clearly described as well as potential losses, damages and risks to local communities. At present, the calculation of losses for compensation is currently the main mechanism for a fair negotiation process between indigenous peoples and the investors.

Traditional nature use depends on the natural resource base of the territories determined by the climatic conditions. The main criterion is the natural-ecological differentiation of the territory according to the nature of the distribution of vegetation:

- Integral indicator of physical-geographical features of the territories; and
- Sustainability of natural landscapes to anthropogenic impacts. For example, there are 59 territories of traditional nature use in Yakutia [16].

The authors' concept of calculating losses to indigenous peoples was based on the methodical approach of the resource assessment of the territory. This considers the potential income of the local population using available natural goods (reindeer pastures, water, rivers for fishing, areas for hunting, sites of vegetation for gathering berries, mushrooms, medicinal plants, etc.). In essence, it is proposed to determine *potential* incomes and losses, if this territory would be involved by the indigenous population in economic circulation (although this territory may not be used at the time of the study). The proposed method could be used in the case of temporary withdrawal of these territories for the project.

The authors used the indicators of resource productivity of the territory to determine losses to indigenous peoples in Yakutia. The analysis of ethnological expertise showed that many natural goods have no market value. The local population uses them for their own consumption. There are no established market prices for traditional products (meat, fish, wild plants, berries, and mushrooms), and standards have not been developed to characterize the biological productivity of land in different Arctic areas (the density of hunting resources per 1 ha, the productivity of fish per 1 ha, etc.). These and other methodological questions determined the need for the development of methodological approaches to calculate the losses. Other issues of methodology development include tools for geobotanical zoning of the territory, taking into account the allocation of exclusion zones and stress zones (indirectly, passively affected areas) [18].

Among basic sectors of traditional economy, domesticated reindeer herding is considered as the main type of economic activity preserving traditional culture. A special feature of this industry is the year-round grazing of animals by shepherds, which forces them to use their language, customs and traditions every day. Reindeers in the literal sense feed the indigenous peoples: they give the main food (meat), are used as a vehicle, provide traditional winter clothing or shoes and are an indispensable tool for the construction of yurts. Only in reindeer herding do the indigenous peoples not encounter competition from the dominant society. Hunting and fishing also play important roles for indigenous peoples and their communities. For example, "The Yukagir" tribal community—a hunter–fishermen aboriginal family from Ust-Yansky region in Yakutia—owns an area of 1914 thousand hectares. The are 17 members of the community, 15 of them men. They hunt, fish and mine mammoth tusks. The main sources of income for the community is commercial fish (*coregonus nasus, coregonus, and coregonus albula*) with a total volume of 52 tons, which is more than 5 million rubles [19].

Consider the case of losses' calculation of indigenous communities due to investment project in Anabar region. This project aims at the exploration and extraction of placer diamonds on the Polovinnaya River. The project is being developed by Arctic Capital LLC. The area is related to the territories of traditional nature use [20]. The indigenous communities perform reindeer herding, hunting and fishing there. The license area is located in the valley of the Polovinnaya riverbed and its tributaries (Figure 5). The total length of the study area is 75.4 km.

The project means partly and temporary traditional lands withdrawal. Therefore, the losses of reindeer herding, hunting, fishing, and gathering wild plants (berries, herbs, mushrooms, etc.) are the main indicators and defined based on the decreasing of traditional lands' productivity. The mine site has been divided into the exclusion zone and the stress zones. For the license period, it is assumed that biological resources are inaccessible for traditional nature use only in the exclusion zone, so their economic reserves are subject to compensation.

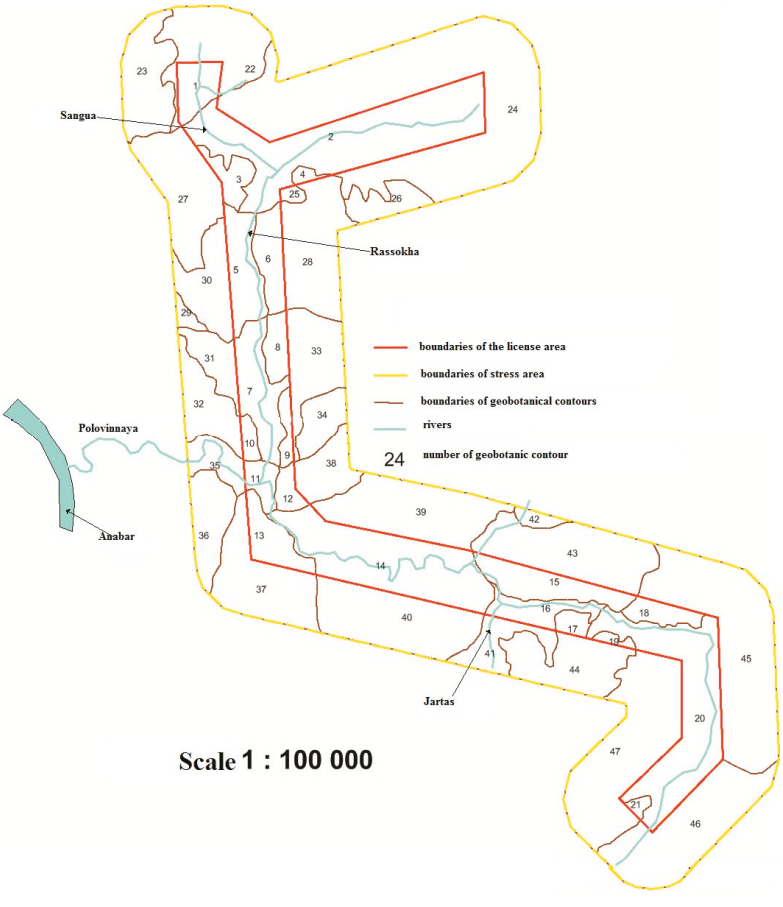

Figure 5. The license area of the project on Polovinnaya River, Anabar region, Yakutia.

4. Results

Losses of indigenous peoples are the lost profit. It is the gross annual income received from 1 ha. Annual gross income is defined as the difference between gross output of all traditional economic activity and their material and technical costs.

4.1. Reindeer Herding

Calculation of the losses of reindeer husbandry was carried out based on geobotanical mapping (Figure 5) [20]. All calculations were made by authors. On the map, for each geobotanical contour, the values of reindeer carrying capacity were determined. Based on the economic-geobotanical map of the mine area, its electronic version was created. The cost of reindeer herding production reduces with the reducing the reindeer carrying capacity of pastures due to industrial development [21]. It was assumed that traditional lands in exclusion zone completely lose their reindeer carrying capacity. In the stress zone, there is a partial decrease of this indicator. As a rule, the losses were calculated for one year [22]. On the economic-geobotanical map, the reindeer carrying capacity shows how many deer can graze on one hectare per day. Table 2 shows a fragment of the contour of the economic-geobotanical map. Table 3 shows a fragment of the calculation of losses in the research area (reindeer herding).

Table 2. Contour of the economic-geobotanical map of the license area at Polovinnaya River.

Number of Geobotanical Contour	Zone	Main Geobotanical Species	Concomitant Geobotanical Species	Area, ha	Reindeer Carrying Capacity, Deer Per Day for 1 ha/winter	Reindeer Carrying Capacity, Deer Per Day for 1 ha/Summer
19	Exclusion	Lichen tundra	Hummock tundra	276.7	4.9	0.0
20	Exclusion	Tundra of cotton grass-lichen	Bushy-Lichen tundra	2049.3	7.0	5.0
14	Exclusion	Hummock tundra	Bushy tundra	466.8	1.5	6.6
11	Exclusion	Moss tundra	Tubercle tundra	578.7	0.0	6.8
6	Exclusion	Bushy tundra	Swamps polygonal-roller and fissured hilly lichen	340.2	10.8	6.6
10	Exclusion	Hummock tundra	Bushy-Lichen tundra	110.4	5.3	5.8
27	Exclusion	Lichen tundra	Spotty lichen tundra	45.6	14.0	12.0
18	Stress	Hummock tundra	Swamps polygonal-roller and fissured hilly lichen	698.4	3.3	1.4
16	Stress	Hummock-lichen tundra	Moss tundra	902.1	1.8	1.5
21	Stress	Bushy and lichen tundra	Tundra willow-lichen	961.2	3.6	0.8
14	Stress	Hummock tundra	Shrub tundra	538.9	0.4	1.7
7	Stress	Swamps polygonal roller and fissure hilly	Herbs	270.9	0.0	1.6

Table 3. The calculation of losses in the license area (reindeer herding).

Number of Geobotanical Contour	Zone	Area, ha	The Cost of the Gross Stock of Bioresources, Ruble/ha	Cost of Bioresource Production (Reindeer Herding), Ruble/ha	Financial and Technical Costs for the Year of Reindeer Herding, Ruble/ha	Gross Income of Reindeer Husbandry from 1 ha of Pasture (Contour), Ruble/Year	The Amount of Current Losses on the Contour, Ruble/Year
19	Exclusion	276.7	328.68	75.60	3.56	72.03	19,931.48
20	Exclusion	2049.3	469.54	107.99	5.09	102.90	210,881.17
14	Exclusion	466.8	442.71	101.82	4.80	97.02	45,290.70
11	Exclusion	578.7	456.13	104.91	4.95	99.96	57,849.10
6	Exclusion	340.2	724.44	166.62	7.85	158.77	54,012.25
10	Exclusion	110.4	389.05	89.48	4.22	85.26	9413.07
9	Exclusion	90.1	368.93	84.85	4.00	80.85	7284.87
27	Exclusion	45.6	939.08	215.99	10.18	205.81	9384.85
18	Stress	698.4	223.03	51.30	2.42	48.88	34,137.37
16	Stress	902.1	120.74	27.77	1.31	26.46	23,870.49
21	Stress	961.2	239.80	55.15	2.60	52.55	50,515.43
14	Stress	538.9	110.68	25.46	1.20	24.26	13,071.53
7	Stress	270.9	105.65	24.30	1.15	23.15	6272.26

4.2. Hunting

Hunting is the second most important traditional activity of the indigenous peoples [23]. Local population hunts for their own consumption. This indicator is almost absent in official statistical data, as is fishing. The one method for real price determination is polling the local population. It was assumed that, during study period, the lands in the exclusion zone lose their value as hunting grounds. In the stress zone, due to the disturbing effects, the productivity of hunting grounds is reduced by 50%.

In Anabar region, the main object of hunting is wild reindeer [24]. The losses of the hunting industry due to land withdrawal for industrial purposes were determined based on the biological and economic reserves per 1000 ha of hunting lands. This approach was used for determination of hunting quotas for various animals (wild reindeer, white fox, elk, etc.). Table 4 presents information about the economic reserves of animals in the form of density indicators.

Table 4. Annual productivity average of hunting in Anabar region, Yakutia.

Type of Animals (Birds)	The Population Density of This Species, Individuals Per 1000 Hectares
Wild reindeer	0.214–1.680
Elk	0.353
White fox	0.370–0.540
Ermine	0.360–0.650
Wolverine	0.039
Squirrel	0.360
Sable	0.902
Fox	0.142
Hare	0.700–1.427
Goose, individuals/10 km of the riverbed, lakeshore	0.300–0.700
Partridge	0.836
Wood grouse	2.910
Cock of the wood	0.620
Duck, individuals/10 km of the riverbed, lakeshore	0.525

4.3. Fishing

The Polovinnaya River and its tributaries belong to the river basin of Anabar. Regular fishing is not peculiar here. Fishing quotas are not defined. According to ichthyologists, as a rule, the fish productivity of the Arctic rivers is 3 kg of fish per 1 ha of water surface. Since the catch is mainly dominated by relatively low-value (quota-free) fish species, the average price in the calculations was 300 rubles/kg. The amount of budget subsidies provided by local government is 30 rubles on 1 kg. The price for fish with subsidies is 330 rubles for 1 kg of fish. The overall reduction in catch volumes would be equal to the product of the fish productivity index per 1 ha of water surface over the entire water surface area within license area.

4.4. Wild Plants

Wild plants are harvested by the indigenous peoples for their own consumption. In conditions of limited sales, their prices do not exist. According to a survey of the population, average prices were determined for the main species of wild plants (lingonberries, blueberries, cloudberries, and mushrooms). The harvest reduction of wild plants occurs only in the exclusion zone and does not apply to the stress zone areas. The cost of economic reserves of wild plants is equal to the product of their economic reserve (kg) in the contour on the price of the wild plants (ruble/kg), Table 5.

Table 5. A fragment of the calculation of the value of economic reserves of wild plants in the exclusion zone, ruble.

Number	Main Geobotanical Species	Concomitant Geobotanical Species	Area, ha	Cost of Potential Gross Output from the Whole Area of Contour, Rubles				
				Lingonberries	Blueberry	Cloudberry	Mushrooms	Total
19	Lichen tundra	Hummock tundra	276.7	13,282	10,791	69,175	55,340	148,588
16	Hummock tundra	Moss tundra	208.2	4997	8120	31,230	31,230	75,577
21	Hummock-lichen tundra	Bushy-Lichen tundra	47.2	1699	1841	11,800	9440	24,780
11	Moss tundra	Tubercle tundra	578.7	20,833	22,569	86,805	86,805	217,013

The authors by experimental methods established that, during exploration and extraction, processes can affect up to 10% of the licensed area, i.e., the amount of possible losses of the traditional land could be 10% of the total losses all license area.

A special methodology for calculating of losses was developed by the Giprozem Research Institute. It was approved by the Ministry of Regional Development of the Russian Federation in 2009. Unfortunately, mistakes made in the development of the methodology led to negative results in its further application. It was based on the income method—the calculation of lost annual gross income of stakeholders as a result of traditional lands withdrawal, Table 6. However, it does not allow calculating the damage to intangible heritage—the language and the original culture of Aboriginal peoples. These issues of calculating of losses were left outside the legal regulation, the provision of new land plots was withdrawn, and status issues that were indirectly influenced by the industrial development of the territory were ignored. Therefore, a federal law on ethnological expertise, which is currently actively discussed in the State Duma, is needed to extend the experience of Yakutia to other regions. It would help to defend indigenous peoples' rights in Russia [25].

Table 6. Fragment of the calculation of losses (wild plants) [20].

Number of Geobotanical Contour	Area, ha	Gross Product Losses from the Whole Contour Area, Ruble/Year	Material Costs for the Collection of Wild Plants, Ruble/Year	Current Losses, Ruble/Year
19	276.7	14,859	700	14,158
20	2049.3	143,451	6762	136,689
14	466.8	40,285	1899	38,386
11	578.7	21,701	1023	20,678
6	340.2	17,861	842	17,019

Existing approaches to calculate of losses do not consider the social aspects of the project impact. In our opinion, industrial companies acting in the territories of traditional nature use should also compensate for social damage to improve the quality of life of the indigenous communities (construction of social facilities, financing of ethno-cultural events, employment) [26]. As practice shows, calculating the losses to indigenous peoples may differ significantly due to methodology imperfections. According to currently using methodology, possible losses of the indigenous peoples should be calculated using the coefficient of conversion of the lost annual gross income into loss of profit, considering the time period of recovery of the disturbed area. However, traditional production cannot be restored unless disturbed natural resources are restored [27]. The existing methodology does not reflect questions about the recipient of compensation (communities, local governments, and public organizations). In addition, the questions need to be adjusted for determination the areas of stressful impact of the project as they move away from the industrial facility. These important aspects of the imperfection of the methodology should be resolved, since legal gaps do not make it possible to determine a fair

amount of compensation to indigenous peoples [28]. The authors' approach, based on the resource productivity of traditional lands, allows calculating losses to indigenous peoples. The authors suggest adding the results with the recommendations on the use of a compensation fund to socio-economic and environmental problem-solving.

5. Discussion

To calculate losses, it is advisable to apply an income approach in terms of lost profits. The lost profit of land users depends primarily on the area (radius) of technogenic impact. Technogenic impact is the impact of industrial technology, transport and communications that can cause ecosystem disruption. It varies in duration (short-term, long-term, and cyclical), degree (super-weak, weak, strong, and super-strong), admissibility (permissible and unacceptable), and controllability (controlled and uncontrolled). To assess the intensity of the industrial impact on natural complexes, it is proposed to take into account such factors as the hazard class of the project, the nature of violations (areal—quarries and other industrial facilities; linear—pipelines, highways, etc.). The hazard class is a conventional value intended for the simplified classification of potentially hazardous substances on the basis of data on the toxicological properties. Industrial impact assessment involves the detailed definition of technologies and chemicals used in mining and processing. In our opinion, methods for calculating of the losses of traditional nature use are based on indicators of income decline from traditional activities. They should be complemented by the environmental and socio-economic costs that are additionally borne by subsoil users to improve in livelihoods of indigenous peoples (job creation, spending on education, lifestyle changes, etc.). One of the main features of economic development projects of traditional lands is their multi-criteria character. Many different socio-economic groups, local governments, business, NGO and indigenous peoples are engaged in exploration and extraction processes. At the same time, commercial efficiency, which usually prevails the social effect of the project, cannot always be used to evaluate the benefits of alternative projects. In projects when implementation results may have implications affecting social, environmental, ethnological, cultural and other aspects of indigenous livelihood, such criteria become important. In the context of multi-criteria strategies for the economic development of traditional lands, differences in the importance of individual criteria for each of stakeholders whose interests are affected by the project, the substantiation of a rational option for the development of such areas is significantly complicated. An obvious principle when evaluating strategies for the economic development of traditional lands is their profitability and consistency of interests of the main parties. In this case, the profitability cannot be unambiguously determined only by the ratio of economic results and costs associated with their implementation. This concept should include the degree of satisfaction of the interests of various parties, which depend on the implementation of such strategies. In turn, the consistency of interests can be achieved only if the results of the implementation of strategies are "beneficial" for all parties whose goals and interests may not coincide. To mitigate the negative social consequences of industrial development in the traditional lands and economic activities of indigenous communities, it is necessary to conclude a tripartite agreement on cooperation and financing of specific programs for promoting sustainable development. Such agreement could be concluded between the investors, local authorities and indigenous peoples. When drafting laws at the federal level on benefit sharing and procedure for compensating damage to the indigenous peoples, it is necessary to consider the experience of Yakutia where there are already successful examples of the agreements on cooperation and partnership realized by the largest mining companies in Russia. The fair compensation provides the sustainable development and helps all stakeholders to avoid conflicts and preserve unique ethnological heritage of the indigenous peoples of the North.

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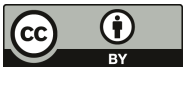

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Article

Land Resources Evaluation for Damage Compensation to Indigenous Peoples in the Arctic (Case-Study of Anabar Region in Yakutia)

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Abstract: The compensation for losses caused to the indigenous peoples in Arctic Russia due to the industrial development of their traditional lands is an urgent question whose resolution requires development of new mechanisms and tools. The losses caused to indigenous traditional lands are part of the damage caused to the natural environment, their culture and livelihood. In the Russian Federation cultural impact assessment is a rather new tool aiming to protect indigenous peoples' rights to lands. In this paper the authors show the applied side of the cultural assessment that is used to improve the methodology of the calculation of losses adopted by ministry of regional development in Russia in 2009. This methodology is based on the resource disposition and evaluation of traditional lands. Accordingly, compensation payments are calculated as the sum of the losses in traditional economic activities such as: reindeer herding, hunting, fishing and gathering. Such compensation is considered by authors as the elements of a benefit-sharing system. In practice, this methodology has been tested at industrial projects on alluvial diamonds in Yakutia. In this paper we look at the Polovinnya project case-study which deals with indigenous peoples of Dolgans and Evenks and argues that such a justified, understandable methodology both for indigenous peoples and subsoil user could reduce to a minimum the conflict of interests.

Keywords: indigenous peoples; benefit sharing; biological and economic reserves; resource assessment; land evaluation; compensation payments; Arctic; Yakutia

1. Introduction

The Northern territories of Russia are mostly dependent on the extraction of mineral resources. Due to negative financial situation they are forced to look for approaches to the adaptation of their socio-economic systems. One of the main approaches includes the formation of a regional investment platform aimed at the implementation of "anchor" projects. It must subsequently have a multiplier effect in socio-economic terms. Among such positive results are new jobs, the attraction of highly qualified specialists to the region, tax revenues, infrastructure development. Of course, in a situation of unstable foreign economic situation, it is important to focus on projects that can act as a driver of socio-economic development of the territory.

The decision to create core zones in the Arctic will serve as a comprehensive development of the regional economy [1]. The main idea is to consider the territory as a single investment project,

including interrelated production, infrastructure and social systems. This approach provides business inclusion in the process of core zones development, whose interests are also widely represented in the Arctic zone. In 2016 the list of priority investment projects was adopted by the State Commission for Arctic development [2].

The presented structure demonstrates a significant predominance of the raw material factor in the specialization of investment projects (Figure 1). Unfortunately, such areas as energy (5.0%), which has huge innovative potential and social significance for the Arctic territories, is relatively small compared to the extraction of minerals. Energy projects are capital-intensive, and important for the environment and social sphere, but cannot provide a significant economic effect in extraterritorial terms. In contrast to these capital-intensive projects, investments in the environment and social sphere are insignificant, although the innovations in this area can significantly improve the quality of life of the Arctic population. Currently, human settlements depend on the Northern delivery system, energy supply which affects the environment.

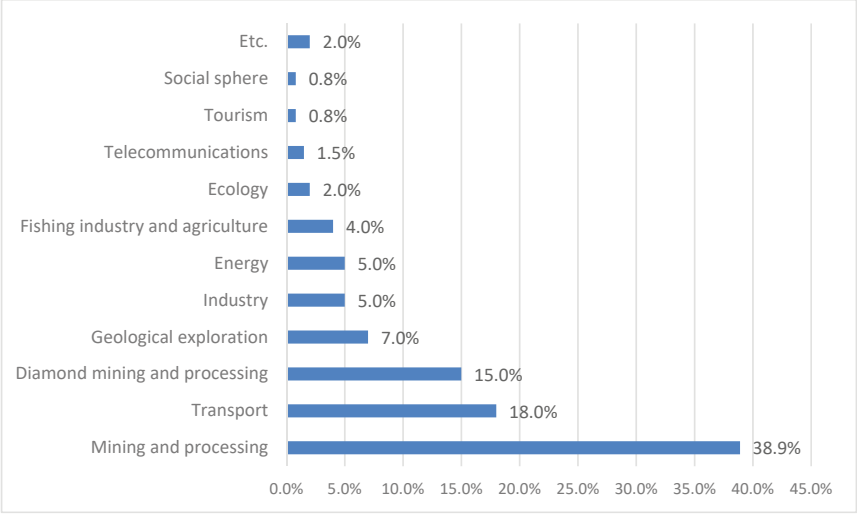

Figure 1. List of priority projects in the Russian Arctic [2].

"Anchor" projects are designed not only to lead to the structural changes in the economy of the region in which they are implemented, but also to affect the entire Arctic macro region. In fact, the core zones are created to provide the Northern sea route, transportation of transit cargo, as well as extracted minerals. In the structure of such system-forming investment projects there are the Arkhangelsk and Murmansk regions, Yamal-Nenets Autonomous area. The development of the Northern latitudinal route, the development of the Prirazlomnoye field, the start of the Yamal LNG-2 are the basic investments that determine the nature of Russia's strategic interests in the Arctic [3].

That means the industrial development will further move forward to the territories that were untouched in centuries to affect traditional lands and culture. It requires the development of partnership models between business and indigenous communities as well as the transparent system of losses calculations and impact assessment. If in Canada or US such systems have been successfully working and economic rights of indigenous peoples are clearly defended. In these countries there is a clear division of territories according to the principles of ownership, the status of indigenous communities and their rights to traditional lands. In Russia there is still the gap in the legislation of the tribal families' ownership of the traditional lands. At present, the issue of the conditions for the land provision to indigenous peoples for the maintenance of traditional lifestyles and management is regulated by the

legislative acts ambiguously and incompletely. It would seem that special legislation establishes the right of minority peoples to the free use of land in order to protect their traditional way of life, business and crafts. It is contrary to other legislation, where restrictions are provided. Thus, according to Article 10 of the Federal Law No. 101-FZ "On the turnover of agricultural land", land plots from agricultural land that are state or municipal property may be leased to indigenous communities. At the same time, they also cannot buy out the leased land in the property. It is the same situation with hunting. Today, the hunting grounds are put up for auction according to the federal legislation. If the indigenous hunter is without stable work today how he could buy out these lands? Fishing is the main form of survival and nutrition in the Arctic and other Northern regions. The transition of the fishery to auction also outraged the population. These are the conflicts where the law on the one hand protects indigenous peoples, and on the other the Forest Code infringes upon their right to traditional and ancestral lands. The indigenous peoples living in territories that have received the status of specially protected areas should not be restricted to the extraction of hunting resources for personal consumption. Today, northerners feel uncomfortable and cannot freely hunt in the tundra or fish, waiting for fines each time.

The traditional occupations of the indigenous peoples of the North—reindeer herding, fishing, hunting, are closely interrelated with the survival of these peoples in their native land. Here we can recall the Makivik Corporation and its highly developed system of business collaboration. In the Canadian province of Quebec, the Makivik Corporation ("The Makivik Corporation") is a significant economic force, an ethnic corporation whose investment interests are represented in areas such as oil and gas production, transportation, environmental protection, etc. Owning equity stakes in these areas over 30 years, the Corporation invested more than $ 100 million in social infrastructure and community support projects. In 2002, signed a trilateral agreement for 25 years on partnership in the field of socio-economic development of Nunavik (Nunavik) territory joined in 1999 in Canada—a place of compact residence for the indigenous people of the Inuit (Eskimos). The parties to the signing were the Government of Quebec, the regional authorities (The Kativik Regional Government) and the Makivik Corporation. According to this agreement, the main objects of joint investment are the mining industry, tourism, transport and social infrastructure, construction of hydroelectric power plants, environmental protection [4].

In Russia there is still a huge gap in impact assessment tools especially in the context of the traditional economy and cultural damage. This problem is connected with the absence of cultural assessment legislation which could be used in whole territory of Russia. Nowadays Yakutia is the one region where such norms have been adopted and indigenous communities could consider fair compensation for damage to traditional lands. They call this ethnological expertise—a comprehensive scientific research on social, economic and cultural impact of the investment project [3]. In the paper the authors describe the case-study of such impact assessment in very narrow terms. The biggest problem of such an assessment tool is the absence of clear indicators for non-material characteristics of indigenous culture. Thus, to do so the adopted methodology offers to calculate the possible losses of indigenous peoples through their traditional economic activities: reindeer herding, hunting, fishing and gathering. Traditional culture, customs and sacred places must be also considered and described. The idea is that calculation of losses allows definition of the compensation amount which could be used for the traditional culture preservation as well as efforts to fix social and economic problems. Obviously, four indicators mentioned above are connected with traditional lands as the main assets for indigenous livelihoods. That is why the land evaluation is considered as the basis of fair compensation calculation for benefit-sharing agreements. The authors want to concentrate your attention on the Russian specificity of cultural assessment and damage compensation in the Arctic to emphasize the need for its improvement and further discussion.

2. Materials and Methods

2.1. Losses Calculation and Compensation Payments as Discussion Points in Russian Science

In Russia the need of dialogue between the industrial companies and indigenous peoples is under active discussion. According to V.I. Shadrin, the vice-president of the Association of Indigenous peoples in Yakutia, the subsoil-users must be more inclusive to the indigenous communities' interactions saying that " ... the required conditions are the informing about the companies' intended activities and possible environmental impact, consulting and holding public hearings, as well as ethnological expertise" [5]. As the investment projects supposes the temporary withdrawal part of traditional land, the lost profit approach defines conceptual model of the calculation of losses and compensation. In Russia the problems of fair compensation to indigenous peoples are complicated by a lack of improvement of the legislation:

(1) Not all indigenous peoples in Russia are included in the list of indigenous groups officially registered in the country. It depends on some limits to the self-identification people as "indigenous" (population must be less than 50,000 etc.). But they could manage traditional economic activities and their livelihood could be affected by industrial projects of natural resources extraction as well. These issues can lead to contradictions and conflicts in the Arctic territories as the economic rights of such ethnic groups are not secured. As the option of the government decision-making could be to review the Federal Law of 30 April 1999 No. 82-FZ "On Guarantees of the Rights of the Indigenous peoples of the Russian Federation" on changing the terms of the registration procedure of the indigenous peoples" (Article 7) [6].

(2) The compensation mechanism is not well developed in Russia that also impacts the economic rights and welfare of the indigenous peoples. It is due to the methodology adopted in 2009 [6]. Its indicators are not considering non-material characteristics of the area as well as they are very complicated for calculation. But if the calculation methodology has been adopted, there is no clear mechanism on compensation payments. The legislation has the gap in who and to whom must pay or be paid, what kind of compensation could be (monetary or non-monetary). The business often uses this lack to avoid of additional costs as they considered compensatory payments. Such situation results in conflicts and negative consequences in the Arctic. The government should improve the methodology in a way of clear the recipients of the compensations [6]. The Federal Law No. 82-FZ of 30 April 1999 "On Guarantees of the Rights of the Indigenous Minorities of the Russian Federation" states that indigenous peoples have the right " ... to compensate for losses caused to them as a result of damage to the original habitat ... " [7]. This law is still not equipped with tools for its realization.

Nowadays in Russia there many scientists involved in losses calculation and compensation payments discussion. We can name Burtseva E.I., Kurakin V.I., Neustroeva A.B., Novikova N.I., Potravny I. M., Samsonov I.V., Kharyuchi S.N., Yanina D.V. and etc.

Novikova N.I., a leading researcher at the Institute of Ethnology and Anthropology of the Russian Academy of Sciences, believes that the amount of losses and compensation payments should be determined during ethnological expertise which must be carried out exclusively by ethnologists [8]. We cannot agree with such a position as the comprehensive study on cultural assessment requires the qualifications in geobotanical mapping, land evaluation, economic and data analysis as well as archeology, biology and computing modeling.

The problems of interaction between the indigenous peoples and mining companies in Yakutia are considered in the papers of Irina Samsonova. The scientist notes the need of legislation improvement for transparent system development between the indigenous peoples and business [9]. Kharyuchi justified the need to secure indigenous rights during Arctic development [10].

Ivan Potravny insists that the compensation mechanisms must be adopted at the federal level and it could have monetary and monetary nature [11]. Due to the Russian tax system on natural resources

extraction, revenue is payed to federal and regional budgets. Such a system misses the local and indigenous communities directly affected by the industrial projects. The compensation system could provide monetary inflows for a local economy and members of the indigenous communities. The indigenous communities could form the foundation for future generation to secure the times when the mine will be closed, to promote sustainable development. Also, the business could construct the social and transport infrastructure which are considered by Potravny as the non-monetary compensation. Burtseva notes that there is a strong need to create a clear, easy-to-understand algorithm for both industrialists and the indigenous communities to calculate losses [12]. The approved methodology causes a lot of complaints. The main ones are the complex calculation algorithm; inconsistency of the calculation methodology with the availability of the necessary source materials for surveys of traditional environmental management areas [13].

2.2. Resources Assessment for the Losses' Calculation: the Way to Compensation for Damage to Traditional Lands

The authors believe that calculation of losses must be done on the basis of resources assessment. According to Russian legislation there are 13 types of the traditional economic activities of the indigenous peoples. They include large variety of species and differ by their location:

1. Livestock, including nomadic (reindeer, horse, Yak, sheep).
2. Processing of livestock products, including the collection, harvesting and dressing of skins, wool, hair, ossified horns, hooves, antlers, bones, endocrine glands, meat, offal.
3. Dog breeding (breeding reindeer, sled and hunting dogs).
4. Breeding of animals, processing and sale of products of animal husbandry.
5. Beekeeping.
6. Fishing (including marine hunting) and the sale of aquatic biological resources.
7. Commercial hunting, processing and sale of hunting products.
8. Agriculture (gardening), as well as breeding and processing of valuable medicinal plants.
9. Harvesting of wood and non-wood forest resources for their own needs.
10. Gathering (harvesting, processing and sale of food forest resources, collection of medicinal plants).
11. Extraction and processing of common minerals for own needs.
12. Arts and crafts (blacksmithing and iron-making craft, manufacture of utensils, equipment, boats, sledges, other traditional means of transportation, musical instruments, birch bark products, stuffed commercial animals and birds, souvenirs from the fur of deer and commercial animals and birds, other materials, weaving from herbs and other plants, knitting nets, bone carving, wood carving, sewing national clothes and other crafts related to the processing of fur, leather, bone and other materials).
13. Construction of national traditional dwellings and other structures necessary for the implementation of traditional economic activities [14].

It should be noted that for most of the types listed above, there is no data. In this connection it is necessary to:

- create a modern up-to-date information and reference database on the productivity of reindeer pastures and land for the collection of wild plants, hunting and fishing grounds;
- update cartographic material: geobotanical maps, deer pasture maps, maps of types of hunting grounds. For example, in Yakutia the geobotanical maps were last updated in 1978;
- oblige the local authorities to organize data collection on traditional economy, as well as to ensure public access to this information [15].

Resources assessment allows for calculating the entire biological reserve of resources in the territory. In determining losses, only a part of it that is permissible to be withdrawn during traditional economic activities is taken into account. This part is called the economic reserve and its withdrawal

does not disturb the biological balance of the ecosystem. Losses are calculated on the entire area of the withdrawing land. For reindeer herding and hunting, the calculation of losses takes into account the stress impact on deer and hunting animals in the territory affected by the investment project. The object of the research is the territories of the traditional economic activities of the indigenous peoples, where industrial development is carried out by mining companies. In Russia the specificity of the indigenous peoples is reindeer herding as the main type of traditional activity compared to Canada or the US. In 2018 the livestock number reached 1.5 million and it still keeps traditional knowledge (language, nomad, equipment) [16].

In Russia there are five types of land resources used for reindeer herding [17]:

- interzonal (tundra–forest-tundra–northern taiga);
- tundra;
- taiga;
- intrazonal mountain-taiga;
- Far Eastern mountain-taiga seaside.

According to its nomadic character reindeer herding occupies millions of square miles of Arctic area in Russia. So, it faces with industrial development as no other traditional activity. The reindeer pastures affected by mining projects, change due to partial withdrawal, stress zones and pollution. In other traditional activities the radius of indigenous presence will be narrowed thus hunting grounds or fishing don't require to move on such long distance. The most important indicator of the productivity of reindeer pastures is the reindeer carrying capacity. It differs by seasons of breeding.

The resource assessment of the territories of traditional nature use is based on the calculation of income and costs of traditional economic activities. This method has been tested by authors for different investment projects on alluvial diamonds and gold extraction which has been realized in the Arctic in 2015–2019. Here we consider a case-study of the project on exploration and processing the alluvial diamonds on the Polovinnaya River. It is a tributary of the Anabar river in the North-West of Yakutia, flows into the Laptev Sea. The averaged geographic coordinates of the license area are: 72° 31′ nl. and 114° 34′ el. (Figure 2).

The total length of the assessed area along the Polovinnaya and its tributaries is 75.4 km. The square of the licensed (exclusion) area is 9160 ha.

During losses calculation, the side-effects of the industrial development must be considered. Due to "noise pollution", from the presence of a large number of people and equipment in this area, the animals experience discomfort and leave the area. Such an area of the land is called a stress zone. In case of Polovinnaya the outer boundary of the stress zone passes at a distance of 2.0 km from the border of the exclusion zone (the licensed area) along its entire length. The area of the stress zone is 21,049.9 ha. The total area of the site to which the negative impact is distributed is 30,209.9 ha. The researched deposit is located on the territory of traditional nature use, where the main type of traditional economic activity is reindeer herding, fishing, seasonal hunting and gathering.

To calculate the losses, the resource assessment was made for each type of traditional nature use. The data of economic stock of biological resources was used. An economic stock is a part of a biological one that can actually be taken (withdrawn) in a given territory without causing harm to the ecosystem. Resource assessment of the territories of traditional nature use is carried out in the following sequence:

- carrying out landscape and ecological zoning;
- geobotanical survey;
- resource assessment of territories.

The purpose of landscape-ecological zoning is the allocation and mapping of the contours of the biological resources accounting.

Landscape-ecological zoning is carried out on a topographic map at a scale of 1:100 000 with the involvement of colored aerospace photographs, applied regional maps: geological, geomorphological, soil, climatic, vegetation, landscape.

There are contours of accounting in the form of relief (meso-, micro -) and characteristics of vegetation as the main features that determine the eco-system.

At the same time, it is necessary to take into account the features of the hydraulic network, soil drainage and natural soil moisture, the power of the active layer of permafrost; weather and microclimatic conditions in zones, subzones, bands and belts (in mountainous areas); spots and strips of bare soil as a manifestation of seasonal activity of permafrost.

A geobotanical map is based on topographic maps using maps of landscape and ecological tours. All these methods were implicated in the researched area.

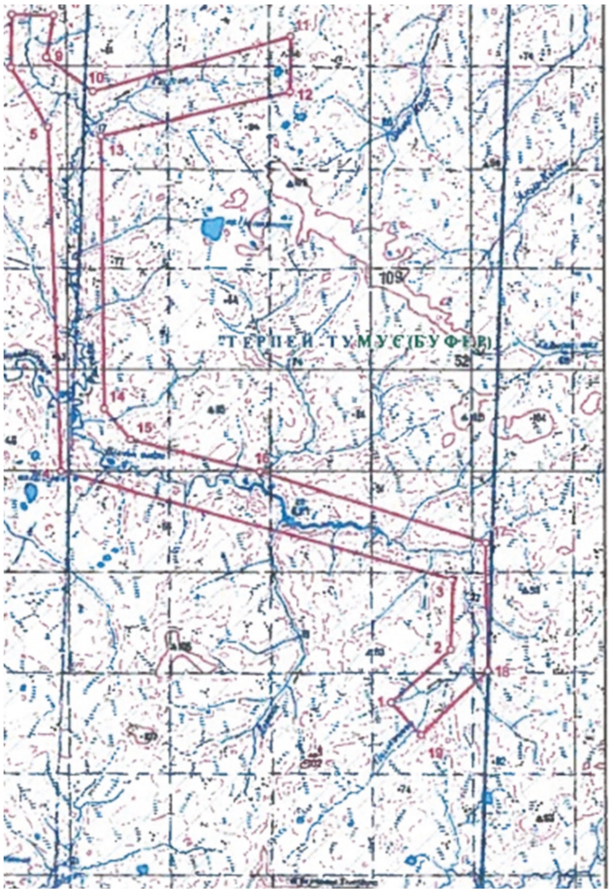

Figure 2. Map of the Polovinnaya licensed area (made by authors during cultural assessment).

3. Results

Here we consider a case study of losses assessment for each type of traditional economic activity. The data was collected during Arctic expedition to the Anabar Dolgan-Even national region in Yakutia in 2017.

3.1. Calculation of Losses for Reindeer Herding

The losses of reindeer herding are calculated for each geobotanical contour of reindeer pastures. In fact, they are lost profit, which is determined on the basis of the annual net income lost.

The methodology supposes that due to withdrawal traditional lands and stress impact the indigenous peoples receive less profit.

The electronic map of the area was created on the basis of the raster image of the economic-geobotanical map. It includes different geobotanical contours divided by exclusion or stress zones. Each geobotanical contour is characterized by its productivity - reindeer carrying capacity, expressed in deer days per 1 ha. There will no reindeer herding on pastures withdrawn for industrial use. All lost income from these lands relates to losses. In the stress zone, there could be traditional economic activity. But due to the negative impact the productivity in such lands is reduced. According to expert data it decreases by a factor of two. The legislation on cultural assessment requires to use market prices of the traditional products in losses calculation. Information about the market value of reindeer husbandry is taken according to the statistics data, open publications and analytical studies.

In determining the gross value of the lost products of reindeer husbandry, not all the livestock is taken into account, but only its part that allows to keep it stable over a long-term period. The share of permissible withdrawal (economic stock) is 23% of its total livestock [17].

The annual costs of reindeer herding on average per 1 hectare of pastures are determined in the data of reindeer farms. They are evaluated on the cost of keeping a standard reindeer herd of 1200 heads, its production and sales [18–20]. The calculations take into account only those costs that are directly related to the decrease in production volumes in reindeer herding. These include: zootechnical processing;

- feeding deer;
- livestock insurance;
- transportation and sales of reindeer products.

Socially significant items such as socio-cultural support, material and technical equipment, salary and training of herders, the work of specialists (veterinarians, zootechnicians, etc.), the construction of production facilities should not be taken into account. Such an approach is due to the fact that traditional activities are not very profitable and are carried out for the purpose of live support in severe environmental conditions. Reducing the cost of reindeer products by the amount of socially significant costs deprives the local population of their means of existence. The share of direct material costs in gross output of reindeer herding is 5.4%. As a result of the calculations, the total annual losses of reindeer herding in the exclusion and stress zones are 2,137,000 rubles ($33,400). The total losses of reindeer husbandry at the estimated site for the entire period of industrial development (5 years) amounted to 10,685,000 rubles ($167,000).

3.2. Calculation of Losses for Hunting

Similar to reindeer herding, in the exclusion zone the hunting grounds lose their value completely. In the zone of stress due to the disturbing influence, the productivity of hunting grounds is also reduced by an average of 50%.

Calculation of losses of hunting should be made using the data that contain information on the species and the number of hunting objects permitted for production. However, such materials for most of the northern territories in Russia are missing or outdated. Therefore, it is permissible in the calculations to use hunting quotas established annually in the regions of Russia.

Quotas for hunting on wild animals and the total area of hunting grounds in the region allow us to determine the average value of their number on the researched area. The data on market prices of hunting products are provided by environmental agencies and open sources (internet, publications in the media, analytical reviews, etc.).

On the basis of official data on the economic reserve of hunting animals, indicators of density are calculated per 100 hectares of hunting grounds. Calculations are made for each type of wild animals or birds. It should be noted that official data on the hunting material costs of indigenous peoples are usually not available. In this regard, the costs of hunting are taken as the amount of 5.4% of the

value of gross output. The total annual loss of hunting for the area in the exclusion and stress zones is 242,000 rubles ($3,800). The losses of hunting for the entire period of industrial development (5 years) amounted to 1,210,000 rubles ($19,000).

3.3. Calculation of Losses for Fisheries

The Polovinnaya river and its tributaries belong to the Anabar river basin, but not included in the large fishing reservoirs. Fishing is not regular here. According to ichthyologists, the fish productivity of the Polovinnaya is low and amounts to 3 kg of fish per 1 hectare of water surface. The length of the riverbed is 75.4 km, the surface area is 590.5 hectares.

The objects of fishery are pike, perch, grayling, whitefish, Arctic lenok, taimen (hucho) and Artic cod. The indigenous peoples catch the fish mainly for their own food. The fish is sold in small quantities. Price, depending on the type of fish, ranges from 100 to 500 rubles per 1 kg. Since the catch is mainly dominated by relatively low-value (quota-free) species of fish, the average price of 330 rubles/kg is assumed in the calculations.

The overall decrease in allowable catch volumes is equal to the product of the fish productivity index per 1 ha of water surface area over the entire water surface area. For the researched area, the decrease in catch will be 1771.5 kg. The cost of catch loss is equal to the product of the mass of catch reduction by the price of fish. It is 584,595 rubles per year (1771.5×330).

The share of costs for fisheries is taken in the size of 5.4% of the value of gross output. The total cost of fishing will be 31,568 rubles ($584,595 \times 0.054$). The average annual size of current losses in the fishing industry is equal to the value of the total losses minus the costs. It is 553 thousand rubles ($8,600).

The losses for the entire period of the partly river exclusion (5 years) amount to 2,765000 rubles ($43,200).

3.4. Calculation of Losses for Gathering

The main species of plants in the researched territory include cowberries, blueberries, cloudberries, mushrooms. Other species of wild herbs are rarely met; they practically do not occur in the estimated area and as a result, they are not taken into account during the assessment.

There is a gathering reducing in only the exclusion zone but not in the stress zone. Traditional lands in the exclusion zone are considered as unsuitable for traditional economic activities during the license mine period. In the stress zone, the productivity of wild-growing plants will remain at the same level and therefore losses for this zone are not calculated.

Data on the economic reserves of the plants are determined by geobotanical contours. The cost of the economic reserve for each geobotanical contour is equal to the product of their economic reserve (kg/ha) in the contour by the price of the plant (rubles/kg) and by its area. The summarizing of different reserves gives the total value of economic reserves in the contour. The sum of contours gives the total value of the economic reserves of the plants.

It should be noted that the gathering is a seasonal. It is carried out in a limited period of the year in the most accessible areas around the settlements. Remote territories and areas with low and moderate productivity are practically not used. The gathering is the less productive traditional activity. The total harvest of berries and mushrooms averages 10% of the economic reserves [19]. Gathering is for local consumption only. There are no official data on the gathering costs. Therefore, their share is assumed to be the same as for other types of traditional nature use 5.4% of the value of gross output. The average annual losses due to gathering reducing is equal to the total losses minus the costs. They are 503,000 rubles ($7860). The total losses for gathering for the entire period is 2,515,000 rubles ($39,300).

The total losses (or compensation payments) for the Polovinnaya project is sum of losses for all types of traditional economic activities, Table 1 (all calculations are made by the authors).

Table 1. Losses of traditional economic activities in industrial land development.

Type of Traditional Economic Activity	The Current Value of Losses for the Year (for the Year of Registration of the License, 2017), Rubles/US$	The Total Amount of Losses for the Entire Period of Development (5 Years), Rubles/US$
Reindeer herding	2,137,000/33,400	10,685,000/167,000
Hunting	242,000/3800	1,210,000/19,000
Fishing	553,000/8600	2,765,000/43,200
Gathering	503,000/7860	2,515,000/39,300
Total:	3,435,000/53,660	17,175,000/268,300

This case-study shows the methodology of calculation for losses using in some Arctic projects and their cultural impact assessment. During license period the indigenous community will receive the compensation payment of 17,175,000 Rubles ($268,000). The authors suggest to use the methods mentioned above for other mining projects realized on the traditional lands. These methods of losses calculation simplify the process, making it clearer for all Arctic stakeholders.

4. Discussion

Despite the measures taken in recent years, the life quality of the indigenous peoples has been complicated by the inability for adaptation to modern economic conditions. The low competitiveness of traditional economic activities is due to low production volumes, high transport costs, the lack of modern enterprises and technologies for the integrated processing of raw materials and biological resources.

The crisis in traditional economic activities has led to the aggravation of social problems. The standard of living of a significant part of citizens living in traditional lands or leading a nomadic lifestyle is lower than the average Russian one. The unemployment rate in the indigenous communities is 1.5–2 times higher than the average in the Russian Federation.

Intensive industrial development of natural resources of the Northern territories has also significantly reduced the possibilities for traditional economic activities [20]. Large areas of reindeer pastures and hunting grounds have been removed from the traditional economy. The environmental problems and rivers' pollution affect traditional crafts, decreasing the fish. The extension of industrial development in the Arctic has revealed deep problems in different spheres of indigenous communities. It is necessary to improve the legislative regulation of the traditional lands, which can become an effective tool for the preservation and development of the traditional way of life and traditional economy. The cultural assessment and benefit sharing are rather new for Russia. They serve as the mechanism for avoiding conflicts in the Arctic and giving the industrial development more civilized characteristics. Unfortunately, the losses of indigenous peoples are inevitably negative consequence. But they must be clearly determined and fairly compensated.

The losses of indigenous peoples are part of the damage to the environment, culture and lifestyle. At present their calculation is an important task for government and science. The problem has been studied by many researchers, but so far it has not been completely resolved. This is due to the lack of accounting in certain types of traditional economic activities [21].

We have developed methodological approaches and an algorithm for losses calculation taking into account the current conditions of economic development. Primarily, these tools are supposed to be used in the traditional lands of the northern territories of Russia. They were tested in seven cultural impact assessments in 2015–2019 in Yakutia. The calculation methodology has positive results. It has allowed indigenous peoples' rights to compensation to be defended, benefit sharing agreements to be concluded, and the subsoil users to participate in social and economic development of the traditional lands. In the Polovinnaya case-study, we have shown the applied side of the methodology.

Our results are the preliminary studies and do not cover all the problems of losses calculation. But they contribute to the important problem-solving: to determine the fair compensation for damage to

the indigenous peoples due to negative mining impact. The issues of compensation and its distribution have yet to be resolved, since this separate important aspect is also not studied in Russia, and there are no legal instruments for this [22].

The authors' approach to losses calculation based on resource assessment have been presented to the Committee for Nationalities of the State Duma in 2019. Nowadays there are hearings on the improvement of this procedure adopted by federal law on the guarantees of indigenous peoples' rights.

As a result of the work on the Polovinnaya project, the methodological approaches developed by the authors were tested for the first time taking into account all factors, impacts and limitations. An algorithm for losses calculation based on the available statistical, regulatory and expert information is presented.

Based on the resource assessment of the territory, the research results made it possible to determine the losses to indigenous peoples living in the license area the project. The amount of compensation payments is justified, and is understandable both for indigenous peoples and subsoil user. Thus conflicts of interest are reduced to a minimum. This mechanism was not previously used in the planned economy of Soviet Union. The proposed approach assumes that there are some limitations that relate to the resource assets of the territory. This is connected with the principle of renewability of the entire biological reserve for each of the types of natural resources (deer pastures, hunting grounds, fish resources, lands for gathering wild berries, herbs). The limitations apply to other less common types of traditional environmental management. Dog breeding, breeding horses and others were not taken into account.

Also, the problem of payments is very important and relevant for modern Russia. There is still no consensus about who is the recipient of compensation payments, and in what form (monetary, non-monetary, etc.): to each resident in the traditional territory; only those who have indigenous status; the tribal community; local government; associations of indigenous peoples (regional branches of the Russian Association of Indigenous Peoples of the North (RAIPON). Currently, this issue is resolved at the legislative level.

It should be also noted that the considered methodology of land valuation has been recently implemented in the practice in Russia and it needs still improvement. In some Arctic regions, there are examples of the interaction between indigenous communities and business. For example, in Yamal, compensation payments are established as a result of negotiations between indigenous peoples and the subsoil user. This leads to the fact that the cost of losses is subjective and does not reflect real indicators. This approach cannot be considered as a scientific. Yakutia is the only region in Russia where the methodology for the land evaluation and its resources is the basis for determining of the compensation. Such evaluation is mandatory for business under regional law. But there are other consumers of this information. The problem is that, due to the lack of financial resources, indigenous peoples and local communities cannot order such research, and therefore do not know the real value of their resources, cannot reasonably defend their economic rights. A limitation of this methodology is connected with the fact that it takes into account only the cost of the biological productivity of the land, but not ecosystem services, the water factor (limits of water access), and climatic aspects. The inclusion of such indicators requires highly qualified specialists, so the issue of education in the field of the evaluation of Arctic resources is also very important. This problem can be solved through international cooperation and knowledge sharing.

In Russia the methodological approach can be used for losses' calculation and compensation payments during other types of mineral deposits' development: gold, hydrocarbons, etc., which will be developed in the future. This methodology can be used both for the northern regions of Russia and other Arctic countries.

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Ethnological Expertise in Yakutia: The Local Experience of Assessing the Impact of Industrial Activities on the Northern Indigenous Peoples

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Abstract: Indigenous small-numbered peoples of the North traditionally live on the territory of the Sakha Republic (Yakutia). Growing industrial activities on their traditional natural resource management territories (hereinafter TNRMT) raise issues of assessing the impact on traditional indigenous livelihood. Ethnological expertise was introduced in Yakutia in 2010 as the way to solve these problems. This article addresses issues of the practical application of the ethnological expertise in the complex environment of the Russian Arctic. More specifically, the local experience of implementation of the Sakha Republic (Yakutia) is examined in the article. The research was conducted with the use of analytical, social, statistical, and legal methods. The necessity of development of the ethnological expertise institute is explained, along with the legal basis for regulating relationships among governmental bodies, business, and northern indigenous peoples. Both of those factors are necessary for sustainable development of the Russian Arctic.

Keywords: Arctic; ethnological expertise; indigenous small-numbered peoples; business impact assessment on indigenous small-numbered peoples; traditional natural resource management territories

1. Introduction

The need to improve the legislation on relationships between government, businesses, and indigenous small-numbered peoples of the North, Siberia, and the Far East of the Russian Federation (hereinafter indigenous peoples) is dictated by the industrial development of the Arctic [1].

Indigenous peoples of Yakutia include Evens, Evenks, Chukchi, Dolgans, and Yukagirs. Most of them live in the Arctic regions with harsh climate conditions, where the temperature in winter reaches minus 60 degrees Celsius. They have been living on this territory for many years, before any other nations came to this land. Their traditional activities include reindeer herding, hunting, and fishing. The population of these four small-numbered indigenous peoples is presented in the following maps (Figures 1–3).

In the modern period indigenous life has been greatly influenced by the industrial development within their territories. Coupled with climate change, this influence is becoming more powerful and has an increasingly negative impact on the traditional way of life of indigenous peoples. Intense natural resource development often contradicts the traditional life of Northern indigenous peoples. It is accompanied by the alienation of land used by indigenous communities, as well as with the degradation of the Arctic environment, which ultimately affects the quality of life of indigenous peoples, whose life is directly related to the quality of the environment and the access to land, water, and wildlife resources [2].

Western and Russian researchers [3–18] provide different solutions to the above-mentioned problem, such as improvement of legal protection of the rights of indigenous peoples and implementing

corporate social responsibility [3,4], getting free prior and informed consent (FPIC) [10], getting compensation for losses [3], and equitable benefit sharing from extraction of natural resources [10–15].

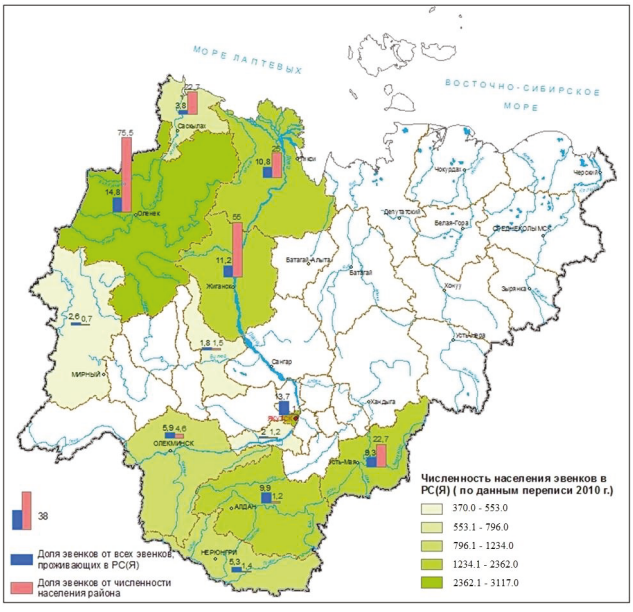

Figure 1. Areas of highest concentration of Evenks in the Sakha Republic (Yakutia), according to the 2010 All-Russian Census [19].

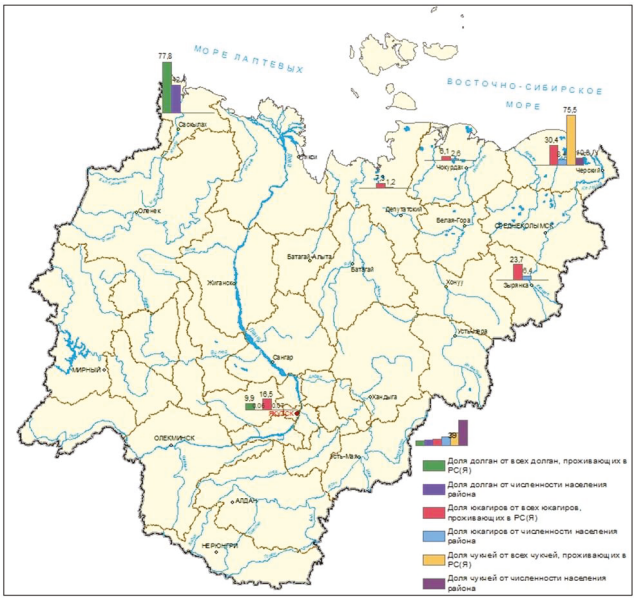

Figure 2. Areas of highest concentration of Chukchi, Dolgans, and Yukagirs in the Sakha Republic (Yakutia), according to the 2010 All-Russian Census [19].

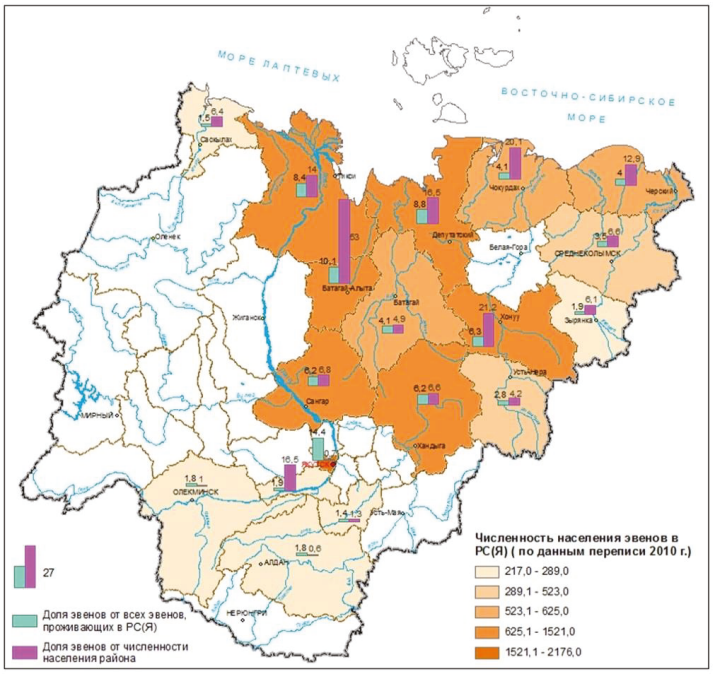

Figure 3. Areas of highest concentration of Evens in the Sakha Republic (Yakutia), according to the 2010 All-Russian Census [19].

The international practice of social impact assessment (hereinafter SIA) shows various standards of the procedure and scientific methods of assessing losses, as well as several methods of social rehabilitation of aboriginal (in the context of this paper terms "indigenous" and "aboriginal" are used as synonyms) groups on the traditional natural resource management territories (hereinafter TNRMT) [20,21].

As we can see from the experience of the Arctic countries, there are a few legal methods that regulate relationships between indigenous peoples and industrial companies. These methods include the expertise of planned industrial developments, benefits from agreements on the compensation of losses, benefit sharing from resource exploration, etc.

State ethnological expertise of Sakha Republic (Yakutia) (hereinafter Yakutia) is the only legally enforced independent impact assessment of industrial projects on the people of the North at the regional level in Russia [6,22]. The definition of the concept of the expertise is enshrined in the Federal Law of 30.04.1999 No. 82-FZ "On guarantees of the rights of indigenous small-numbered peoples of the Russian Federation" as "a scientific study of the impact of changes on the original habitat of indigenous small-numbered peoples and of the socio-cultural situation on the development of an ethnic group" (Clause 6, Article 1) [23]. However, the definition did not receive further development in the federal legislation.

Discussions on the status of the ethnological expertise, the procedure and the frameworks of its implementation, and perspective of incorporation into the federal legislation are currently ongoing among researchers and the general public [21].

Yakutia is the only region of Russia that legally established *the obligation* to conduct expertise [24]. It practically means that the negative decision of the expert commission imposes veto on the implementation of the project. *The status* of the expertise, *the procedure*, and *the framework* for its implementation during the industrial development on TNRMT are governed by the Law of the

Republic of Sakha (Yakutia) "On Ethnological Expertise". However, before we proceed to the analysis of the ethnological expertise, it is essential to give an explanation on the legal status of TNRMT.

TNRMTs are defined in The Federal law of 07.05.2001 No. 49-FZ "On the traditional natural resource management territories of the indigenous small-numbered peoples of the North, Siberia, and the Far East of the Russian Federation" as "specially protected areas that are created for the traditional environmental management and livelihood of indigenous peoples" [25]. According to the law, TNRMTs are created by the government upon the request from indigenous peoples. The industrial activities on the TNRMTs are limited and become possible only with the consent of indigenous peoples. In 2018, there were 59 officially created TNRMTs in Yakutia, 55 of which have gone through cadastral registration [26]. The cadastral registration is a procedural step in registering the official status of TNRMT. The total land area of TNRMTs is 1,690,000 hectares.

Furthermore, it needs to be noted that the difference between the environmental impact assessment and ethnological expertise can be quite confusing. Yet, these processes have different subjects of research.

For instance, the environmental impact assessment researches the impact of the industrial project on *nature*, while ethnological expertise researches the impact on *indigenous peoples*, who are engaged in traditional economic activities—reindeer herding, hunting, and fishing.

Over 8 years of the enforcement of the Law "On Ethnological Expertise", 11 expertise studies were conducted for 48 indigenous communities. During this time, neither industrial companies nor indigenous peoples challenged the expertise results in a court. The participants of ethnological expertise studies (experts, representatives of government, business, and tribal communities) address issues that arise during the expertise study. Those issues are decided jointly on special public platforms with an authorized authority on the basis of dialogue and consensus. They constantly improve the mechanism of expertise and eliminate the gaps in scientific and methodological base.

Unique knowledge and scientific materials were obtained during the expertise study on the real socio-economic state of the peoples of the North. This is extremely important in the absence of state statistics on the socio-economic development of the peoples of the North of Russia.

This experience, with all its shortcomings, has a great scientific and practical value for the protection of the rights of the indigenous peoples, especially in the circumstances of the industrial development of the Arctic.

Therefore, the objective of this paper is to analyze the procedure of the ethnological expertise, to identify weak and strong sides through actual implementation analysis, and to recommend solutions. That is made based on the analysis of eleven conducted ethnological expertise assessments and by evaluating the existing legislation. Also, a special attention is paid to the main parts of the expertise assessment: the procedure of the assessment of the business impact on indigenous peoples, and documenting juridical facts of the consent of indigenous peoples to the industrial development on TNRMTs.

2. Materials and Methods

The paper is based on both literature review and original data obtained during the research. The following materials were used to complete this paper:

- Scheme of the integrated development of the productive forces, transport, and energy industries of Yakutia until 2020 [27];
- The strategy of socio-economic development of the Republic of Sakha (Yakutia) until 2030 with the definition of the target vision until 2050 [28];
- Investment project "Integrated development of South Yakutia" [29];
- Expeditionary materials in Ust-Yansky (2018) and Anabarsky District (2018) of Yakutia;
- Results of 11 ethnological expertise assessments, conducted on the territory of Yakutia.

The following methods were used in this paper:

- Statistical: statistical data on socio-economic conditions of groups of indigenous peoples was gathered and used.

- Survey: surveys were conducted during the research expedition on the places of residence of indigenous peoples in Ust'-Yansky, Bulunsky, and Anabarsky Districts with use of the on-site questionnaire survey as a research method. The first survey was conducted among residents of the following localities of the Bulunsky District: urban settlement—Tiksi; rural settlements—Siktyakh, Chekurovka, and Kyusyur. Some residents of the Bykov Cape rural settlement were also included in the research sample. All citizens of the Russian Federation aged 18 years and over were included in the sociological survey sample. Respondents individually read the questions and choose the answer options. The number of respondents was 198 people, including 110 men (55.6%) and 88 women (44.4%); the percentage of respondents who were northern indigenous peoples was 71.7%. The second survey of the indigenous population of the Ust'-Yanskiiy region of Yakutia was conducted in July–August 2017 [30], and the number of respondents was 129 people. Cluster sampling was conducted by a continuous survey, as the nests are the settlements of the village of Ust'-Yanskiiy village, Ust'-Kuyga village, Cossack village, and the village of Lake Khaiyr (see Figure 4). A research method questionnaire was used as well, as in other districts.
- For the assessment of pollution in the Arctic areas of natural complexes of Yakutia we used the method of universal quantitative indicator (UQI)—the percentage of the attribute in the estimated system of parameters [31]. This is the factor intensity index (FII), which is the deviation from the average state of the object in relative terms. The essence of the methodical approach is to bring indicators with a different unit of measure into a single quantitatively comparable system using this index, which is determined by the formula:

$$UQI_i = \frac{a_i}{M}$$

where a_i is the absolute value of the i-th indicator, and M is the absolute average value of a set of indicators [31].

3. Ethnological Expertise in Yakutia

Nomadic reindeer herding is a world heritage, a priceless experience of the harmony of man and nature in the Russian Arctic. Thereby, the original culture and language of the peoples of the North have been preserved. For instance, in Yakutia, there are 160,000 domestic reindeers, thanks to which five reindeer-breeding nations of the North who are on the verge of extinction have been preserving their native languages and original culture for centuries. Only because of the reindeer herding do they speak their own language and lead a nomadic life in the Arctic based on their customs and traditions. They do not face any rivalry from the dominant society in this sector of the economy. However, due to global warming, new opportunities for industrial development in the Arctic have arisen, which have led to the problem of coexistence of two opposite types of economies—traditional and industrial.

As of January 9, 2017, within TNRMTs there are 474 deposits of oil, gas, diamonds, gold, and tin in Yakutia. 155 companies have licences to extract these resources, including giant companies, such as Gazprom, Rosneft, and Surgutneftegaz.

The Law of the Republic of Sakha (Yakutia) "On Ethnological Expertise" was adopted on April 14, 2010 [24]. This legal act establishes the expertise assessment as an obligatory measure in Yakutia. It should be conducted before making decisions on the implementation of the planned economic and other activities. Yet, it is worth mentioning that the expertise is only mandatory if the activity is planned on a TNRMT [32].

Conventionally, the impact assessment procedure can be divided into three main stages:

– The first stage is the collection of primary official and scientific materials, information on the national settlement, and on the TNRMT, where an industrial project is planned;
– The second stage is fieldwork, which includes meetings with representatives of indigenous peoples, national local self-government bodies, and tribal nomadic communities, sociological studies, questionnaires, surveys, and interviews of representatives of indigenous peoples, and analysis of

the state of the cultural and linguistic situation. All of the above should be done with maximum consideration of the traditional knowledge and customs of the Arctic indigenous peoples;
– The third stage is the assessment of the social impact of the industrial project on the indigenous population and the development of recommendations for minimizing negative consequences,
– The fourth stage is the public hearings of national settlements and the meetings of members of indigenous communities on the results of the impact assessment and the materials of the design estimate documentation of the project.

One of the main parts of the ethnological expertise assessment is a comprehensive assessment of possible losses (economy) to the nomadic economy of the Northern indigenous peoples, mainly to domestic reindeer breeding, horse breeding, hunting, and fishing.

For 2017, the total amount of possible losses of the peoples of the North, calculated by the expertise assessment, amounted to 337,996,919 rubles, of which almost 64,992,169 rubles were paid to indigenous communities [33].

For comparison, it can be stated that before the adoption of the regional law on the ethnological expertise assessment in Yakutia, in 50 years of industrial development of the Russian Arctic there was not a single instance of compensation for losses to the Northern indigenous peoples.

The final stage of the expertise assessment is the development of recommendations to minimize the negative impact of the project.

After the assessment is done, the expert commission prepares a concluding paper on the basis of expert opinions. The decision of the commission is expressed in the conclusion and can be positive or negative. Subsequently, the conclusion of the expert commission is approved by the Government of Yakutia and acquires the force of the law of the Russian Federation, which is binding on the territory of Yakutia. The authorized executive body is obliged to conduct continuous monitoring of the implementation of recommendations and expert assessment activities.

During the expertise assessment, the traditional way of life and traditional resource management are the basis for the assessment of the impact made by companies. Expertise assessment is a mechanism for protecting the rights of indigenous peoples to control the use of natural resources, while taking their opinions into account. Those rights are guaranteed by generally accepted principles and norms of international law [34–36], international treaties of the Russian Federation, and current Russian legislation, since the legal status of the peoples of the North consists of the UN Declaration on the Rights of Indigenous Peoples of the world (2007) [34], the Constitution of the Russian Federation, and federal and regional legislation, including the regional law of Yakutia on ethnological expertise.

After the expertise assessment has been completed, representatives of the indigenous peoples continue to be actively involved in the process before making a state decision on the industrial development of the TNRMT. After the decision on the development is made, they take part in the implementation and monitoring of the results of ethnological expertise assessment.

The author (Anatolyi Sleptsov) has participated in 23 official meetings of the participants of the expertise assessment as an expert and discussed problematic issues arising during the expertise assessment, which resulted in eliminating gaps in scientific and methodological support. He personally made 6 amendments to the regional law on ethnological expertise assessment, eliminating gaps and administrative barriers.

4. FPIC and Ethnological Expertise

In the Russian literature, the notion of FPIC is used almost [37,38] exclusively in medicine [39] or biomedicine [40]. In this sphere, FPIC is defined as "the voluntary acceptance by the patient or their legal representative (parent, adoptive parent, guardian) of the medical intervention proposed by the physician directly carrying out the intervention, examination, and treatment options based on obtaining comprehensive information about the forthcoming intervention, possible complications, as well as alternative events and conditions of their provision" [40]. FPIC is also used in the oil sector by Sakhalin Energy company on Sakhalin Island [17].

Based on this definition, the following signs of FPIC are distinguished:

- FPIC is a necessary and indispensable condition for any medical intervention, from simple manipulation to complex surgery;
- FPIC must be obtained prior to the commencement of the medical intervention;
- FPIC must be obtained voluntarily—any form of coercion is unacceptable. Consent may be withdrawn at any time and without any explanation;
- FPIC must be informed. The exchange of information should be reciprocal. Information provided to the patient or their legal representative must be exhaustive [41].

Non-observance of the above principles violates the Federal Law [39] therefore, entails the possibility of subsequent judicial protection of the rights of the patient. In our opinion, it is necessary to pay attention to the above principles, since their use by analogy will facilitate the reception of the concept of FPIC from Western literature.

In Western literature, the concept of FPIC also originated from biomedicine [42], but now extends to relations between indigenous peoples and industrial companies. In international law, the term "free, prior and informed consent" is repeatedly referred to in various international documents.

For instance, it is mentioned in General Comment No. 21 "[The right of every person] to take part in cultural life" of the Committee on Economic, Social and Cultural Rights. In its interpretation of cultural rights, the Committee notes that in the context of the right to participate in cultural life, indigenous peoples are considered to require special protection. Their right to participate in cultural life includes "the right to the lands, territories and resources that they traditionally owned, which they traditionally occupied or otherwise used or acquired" [43]. The Committee specifically notes that "States parties should respect the principle of free, prior and informed consent of indigenous peoples in all matters covered by their specific rights" [43], and recalls the obligation of States to take measures to compensate for the damage done without the consent of indigenous peoples.

The Committee on the Elimination of Racial Discrimination in its General Recommendation No. 23 "On the Rights of Indigenous Peoples" also calls on the participating States to ensure " . . . that no decisions directly relating to their rights and interests are taken without their informed consent" [44].

The term "free, prior and informed consent" appears in the United Nations Declaration on the Rights of Indigenous Peoples [34]. It is inherently associated with the right to self-determination. Moreover, it is a logical continuation of this right and a kind of "superstructure" in the opinion of many authors [12,45]. For example, in Article 19 it is noted that: "States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior, and informed consent before adopting and implementing legislative or administrative measures that may affect them."

According to paragraph 1 of Article 28 of the Declaration: "Indigenous peoples have the right to redress, by means that can include restitution, or when this is not possible, just, fair, and equitable compensation, for the lands, territories, and resources which they have traditionally owned or otherwise occupied or used, and which have been confiscated, taken, occupied, used, or damaged without their free, prior, and informed consent" [34]. Thus, the Declaration also states that the lack of free, prior, and informed consent entails the right to restitution and compensation. Unfortunately, the above Declaration has only a recommendatory character, and the Russian Federation has not ratified it.

There is no law on FPIC in Russia. However, FPIC is an essential part of the ethnological expertise according to the law of Yakutia. FPIC is documented in the form of protocols of the public meetings. During these meetings, business representatives inform indigenous peoples about the proposed project, and experts present the results of their research on the impact of an industrial project on the peoples of the North, including the results of sociological studies. FPIC procedure is implemented in the form of an open vote on giving the consent to the industrial development of the TNRMT. Another way to record FPIC is by establishing consent facts on the basis of polls, questionnaire surveys, and interviews of representatives of indigenous peoples, which are an essential part of the impact assessment procedure.

Furthermore, experts conduct meetings and gatherings in reindeer herding teams (brigades) and fishing grounds. As a result, protocols are drawn up with the recommendations and requests from indigenous peoples. Also, the mapping of the TNRMT's resources is made if necessary (such as lakes, rivers, hunting, and herding grounds) [46].

Consent of indigenous peoples is mandatory to get a positive decision from the experts. Furthermore, some of the principles of the ethnological expertise that are enshrined in the law are transparency, participation of the community representing organizations, and consideration of public opinion. Also, indigenous peoples and their representatives are right holders on alongside with governmental bodies, experts, and companies. Therefore, the consent of indigenous peoples is the inherent part of the ethnological expertise assessment.

5. Case Study

In 2017, "Prognoz" company initiated a project to build a mining and processing plant at the "Verticalnoe" silver deposit. The deposit happened to be at the TNRMT in Kobyaysky Ulus (District) of Yakutia, therefore, the expertise had to be conducted. As part of impact assessment within the expertise [47], a scientific study of the local population was conducted. It included a wide-ranging survey and in-depth interviews on the industrial development on TNRMTs, in which 128 respondents participated. The following answers were received to the question "How do you feel about the development project of the "Verticalnoe" field": "positive"—59%; "negative"—28%; "indifferent"—13%.

To the question: "What are your concerns about the development of the "Verticalnoe" silver deposit?" the following answers were received: 74% of respondents were concerned that "the state of the environment will deteriorate"; 64% feared "reindeer breeding grounds and forage lands will be reduced"; 54% considered that "stocks of fish, game animals, and wild animals will decrease"; 24% feared "influx of visitors"; 15% feared "risk of accidents"; 14% noted the "difficulty of employment at the mine"; 13% considered "rising prices for food and services"; and only 8% answered that they had no concerns. According to the survey and interviews, the peoples of the North expressed particular concern about environmental pollution and the reduction of reindeer breeding grounds and the reduction of fish stocks. All answers were in different ways related to the social responsibility of business.

As a result of their work, experts recommended the following: conduct ethnological monitoring every three years; conclude a three-party agreement on social and economic cooperation among municipal administration of Kobyaysky Ulus (District), Lamynkhinsky national rural settlement, and the "Prognoz" company. In this agreement, emphasis should be put on the employment of the local population at the company's facilities. Furthermore, experts recommended that medical and demographic monitoring be carried out to assess the health status of the population in the village every 3 years, and that a Corporate Social Responsibility Committee be created for the company with the participation of municipalities to determine the social responsibility policy on TNRMT and coordinate compensation payments to indigenous peoples [48].

Similar results were obtained during the social survey of residents of the Bulunsky District. That survey was conducted as a part of an ethnological expertise on the diamond mining zone at the Molodo River in August 2016 [49].

The results of the study showed that under certain conditions, 83% of the residents of the Bulunsky District agreed to support the activities of the "Nizhne-Lenskoye" diamond mining company on the TNRMT. The proportion of residents of the area who expressed their negative attitude was insignificant. Such negative answers were present in all the villages of the Bulunsky district almost equally. The largest percentage of residents with negative attitudes was in the villages of Chekurovka (31%) and Kyusyur (24%), while the smallest percentage was in Siktyakh (6.8%). On average, in each village, the number of negatively-minded residents did not exceed 23%.

The results of sociological studies showed a generally loyal attitude to the industrial development on the TNRMT under conditions of the implementation of the social responsibility policy of companies

with regard to the interests of the peoples of the North and their contribution to the sustainable development of the Arctic territories.

All of the following tables were made on the basis of the above-mentioned survey that was conducted during the expedition to Ust'-Yanskiiy region of Yakutia. Table 1 shows the scope of the activities of the respondents.

Table 1. The scope of the activities.

Scope of Activity	Number of Respondents	%
Public sector worker	44	34.1
Mining company employee	6	4.7
Individual entrepreneur	15	11.6
Private company employee	9	7.0
Hunter	4	3.1
Reindeer herder	17	13.2
Fisherman	9	7.0
Traditional activities (fishing, hunting, reindeer herding)	5	3.9
Other	20	15.5
Total	129	100.0

Note: Some respondents, in addition to the main activity, were engaged in fishing or traditional crafts.

Information about the sources of income of respondents in the area is given in Table 2.

As for the socio-economic problems that concerned the residents of the area, they were most concerned about the lack of employment (22.4%). In second place were high prices for products (21.5%), while respondents noted that the problem lies not only in high prices but also in the inaccessibility of essential foodstuffs. Particularly acute was the problem of the dilapidated state of the housing stock. The locals pointed out that it is necessary to build new houses with conveniences. See Table 3 for the socio-economic problems that concern the residents of the area.

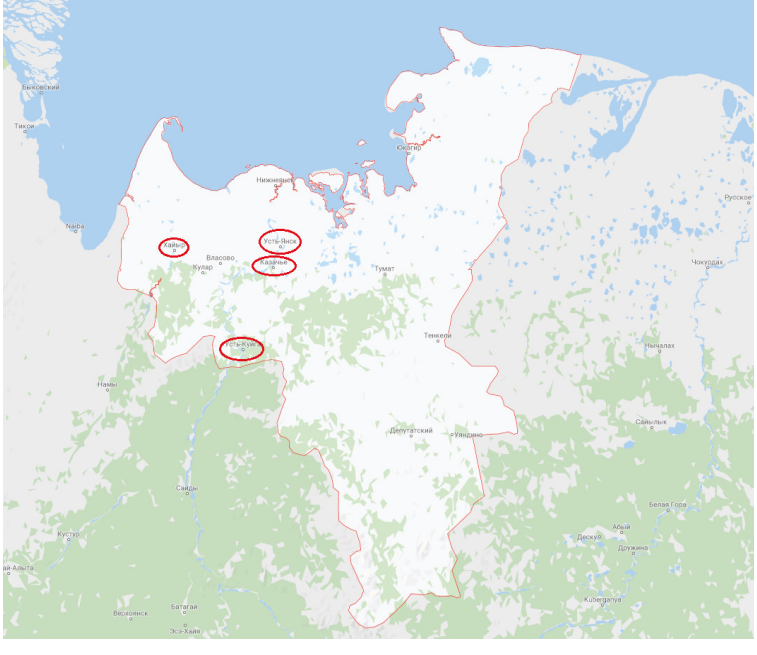

Figure 4. Villages where the survey was conducted.

Table 2. Sources of income.

Income Source	Number of Respondents	%
Salary from the main employment	60	46.5
Income from the traditional activities	28	21.7
Pension, state benefits	28	21.7
Additional income (provision of temporary services)	7	5.4
Other	6	4.7
Total	129	100.0

Table 3. Socio-economic problems that concern the residents of the area.

Problem	Number of Mentions (out of 129)	%
Lack of employment	81	22.4
High prices for products	78	21.5
Dilapidated state of the housing stock	70	19.3
Low income	58	16
Poor transport accessibility	38	10.5
Low level of medical services	27	7.5
Low level of equipment of educational institutions	10	2.8

Assessing the social and cultural problems of the development of the territory, residents were primarily concerned with the decline of non-material culture, which was expressed in the loss of communication of people with their culture and traditions (23.8%). This can be explained, on the one hand, by decrease of the motivation to engage in traditional crafts for various reasons, and on the other hand, by the reduction of the "knowledgeable" part of the population that can pass on traditions. Residents also noted the negative phenomenon of alcoholism (22.6%), as well as an acute problem of the need to organize forms of leisure (19.4%). Also, respondents note that residents simply do not have enough money for decent living conditions. See Table 4 for social and cultural issues that concern residents of the area.

Table 4. Social and cultural issues that concern residents of the area.

Problem	Number of Mentions (out of 129)	%
Loss of cultural links with their culture and traditions	76	23.8
Alcoholism	72	22.6
Lack of organized leisure activities	62	19.4
Increased morbidity and mortality	41	12.9
Youth outflow	29	9.1
Crime	23	7.2
Problems of sales of products of traditional crafts	16	5

Residents considered the reduction of the number of objects of traditional fishing to be the most significant environmental problem. Particular concern was expressed by the respondents regarding the drop in water level in the river Yana, which may be due to climate change. The results of sociological studies also showed that the lack of sewage and water supply is particularly acute. See Table 5 shows environmental problems that concern the inhabitants of the area.

Table 5. Environmental problems that concern the inhabitants of the area.

Problem	Number of Mentions (out of 129)	%
Reduction in the number of sources of traditional fishing	71	21.6
Reducing the number of reindeers and change in their migration paths	60	42.6
Climate change	56	17.1
Pollution of the environment on the territory of traditional nature use	55	16.8
Lack of waste collection and recycling system	52	15.9
Poaching	34	10.4

Analysis of the received responses indicates that the majority (90.7%) of the respondents have a positive perception of the company's activities in the licensed area, subject to the payment of fair compensation. Most of the respondents were ready to support the company's activities.

In the current case, the respondents hoped for the development of the infrastructure of their village, specifically highlighting the construction of roads, as well as the possibility of obtaining jobs, future perspectives for their children, and education for young people. This section of respondents noted that income from traditional crafts is not enough to support the family. Respondents who spoke out against the project usually expressed concern only for the state of the environment.

The answers indicated that more than half of the population (53%) preferred the development of the infrastructure of the village as the most desirable form of the compensation, while 17.5% of respondents considered the need to send compensation for the creation and maintenance of agricultural purposes. This alignment of the compensation package indicates the possible activity of the company as a single source for the development of the infrastructure of the district.

The vast majority of respondents (55.8%) considered that signing a cooperation agreement would be the best assurance of taking into account the interests of local residents. A further 31.8% of respondents thought that the creation of a fund to compensate for possible losses in the licensed area would be a better assurance. The overwhelming majority of the population considered the signing of a cooperation agreement not only as an assurance to take into account the interests of local residents but also as a guarantee of the observance and protection of these interests.

As part of the study, the calculation of the amount of losses of the local population as a result of a possible deterioration of the conditions for conducting traditional economic activities in the project's area of influence was carried out [50].

The decrease in the production of traditional environmental management is due to the temporary land acquisition (alienation) and a decrease in the productivity of the land.

For example, it is not possible to carry out traditional nature management in the exclusion zone during the period of mining operations. Therefore, for the period of the license validity, it is assumed that biological resources in the exclusion zone are not available for traditional nature management, and their economic reserves are subject to full compensation. The annual amount of losses caused by the withdrawal of land for the project will be 1.7 million rubles per year. Methods for estimating losses based on indicators of reducing income from traditional activities should be complemented by a number of environmental and socio-economic costs incurred additionally by the company due to changes in living conditions (job creation, education costs, lifestyle changes, etc.).

Under the programs of social and environmental responsibility of the business and the agreements on the socio-economic development of the territory in question, the subsoil user incurs costs for the socio-economic development of the territory (adding roads, landscaping, building, and maintaining transport infrastructure facilities) [30,51].

As part of the study, recommendations were drawn for the development of social responsibility of businesses in order to harmonize the interests of target groups (businesses, state and municipal authorities, indigenous minorities of the North) in the field of traditional environmental management.

It is expected that the activity of the subsoil user in the licensed area will have positive social and economic consequences, which will primarily be expressed in the employment. In addition, the project involves the construction of social (educational, medical, cultural, sports, and other) facilities, and also entails improving transport conditions, creating opportunities for local residents and communities to ensure the sale of manufactured products, educating personnel from among the local population and their employment in energy enterprises.

As a result of the expertise of the Verkhne-Munsky diamond deposit project, a cooperation agreement between ALROSA (a Russian partially state-owned diamond mining company) and the Olenek national Evenk region of Yakutia totaling 500,000,000 (five hundred million) rubles was signed. The total amount can be divided into the monetary part and the part that concerns the general organization of interaction. The monetary part provides financial aid for five years (100 million rubles each year) for various social programs of the Olenek national Evenk region. The second part of the agreement establishes the obligations of the parties. On the part of ALROSA, those obligations include training local people in professions that are needed in the company and providing further employment.

The process of concluding the above-mentioned agreement was preceded by difficult negotiations and lawsuits between indigenous peoples and the company. Thus, during the impact assessment of geological exploration and diamond mining on the Malaya Kuonamka River on TNRMT, it was found that this river is sacred to the indigenous peoples. As a result, at the public hearings held on March 23, 2015, residents of the village of Zhilinda of the Oleneksky national Evenki district unanimously voted against giving FPIC to the company "Almazy Anabara" (subsidiary of ALROSA) to carry out exploration and diamond mining on the Malaya Kuonamka river with the tributary of the Maspaki river [33].

Consequently, indigenous peoples gave the FPIC to geological exploration and diamond mining on three license areas and did not give consent on the area located on the Malaya Kuonamka River. This sacred river is the only river in the village of Zhilinda, which provides residents with clean drinking water. It is also a place of traditional hunting and fishing.

Therefore, following the results of public hearings, indigenous peoples appealed to the court with the request to recognize the illegal issuance of a diamond mining license on the holy river. However, they lost the lawsuits with the company.

However, the company was forced to move the diamond mining site from the sacred Malaya Konamka River to a safe distance and to develop additional environmental safety measures at the company's facilities under public pressure.

6. Results of the Ethnological Expertise in Yakutia

The law of Yakutia on ethnological expertise assessment establishes only the legal framework and expertise procedures, and each expertise assessment as a scientific study is unique. Therefore, a regulatory legal act of the regional government is adopted for each of them. Over 8 years of law enforcement practice, 11 expertise assessments were conducted, on the basis of which 11 positive expert opinions were approved by the Government of Yakutia on the possibility of industrial development of the TNRMT, subject to the mandatory implementation of the recommendations of the expertise assessment [52].

This local experience demonstrates both the need for scientific research and the inclusion in the process of expertise assessment of indigenous representatives and the need for legally binding legal decisions based on the results of the expertise assessment.

None of the results of the expertise assessment and calculation of the indigenous losses has been put on trial since the law entered into force. This fact demonstrates the high qualification of experts who prepared conclusions based on scientific research and international and domestic law, which became the basis for the government decision on the development of TNRMTs of indigenous

peoples of the North of Yakutia. It also shows that both businesses and indigenous peoples trust results of the expertise assessment.

As part of the expertise assessment, 12 integrated interdisciplinary scientific studies have been conducted to assess the state of the ethnocultural environment (language, culture, traditions) of the peoples of the North of Yakutia since 2011, as well as 19 sociological studies and surveys in national languages and communities.

From assessment to assessment, scientific materials of the impact assessment become better and the qualification requirements for the work of the experts are strengthened, which results in improvement of expert materials and reduction of number of expert documents that are sent for revision.

Representatives of the indigenous peoples of the North are actively involved in all stages of the expertise assessment. As a result of the experts' recommendations, nomadic communities, in a timely manner, are issued titled documents for their land plots and property and have their financial and tax reporting put in order, which is makes it possible to reach a qualitatively new level of sustainable development of the national economy of the peoples of the North.

In our opinion, the expertise assessment of Yakutia went beyond the usual research (assessment) of the impacts, and essentially turned into a new social phenomenon, where all the participants of the expertise assessment (authorities, scientific community, businesses, and peoples of the North) jointly tried to solve one problem of peaceful coexistence of two opposing Arctic economies based on dialogue and law.

7. Conclusions

An expertise assessment is considered as a mechanism for protecting the rights of indigenous peoples to control the use of natural resources, while taking their opinions into account, which is guaranteed by generally accepted principles and norms of international law, international treaties of the Russian Federation, and current Russian legislation. These international documents are recognized, since the legal status of the peoples of the North consists of the United Nations Declaration on the Rights of Indigenous Peoples (2007), the Constitution of the Russian Federation, and federal and regional legislation, including the regional law of Yakutia on ethnological expertise assessment.

An expertise assessment is a relatively new notion; therefore, it would be easier to explain it through the comparison with the Environmental Impact Assessment (the EIA). As was mentioned above, the main aim of the EIA is to assess the potential impact on nature and the environment. The expertise assessment analyzes the potential impact on the lifestyle and culture of indigenous peoples. Therefore, the first difference is in the object of the assessment. The second difference, and the most important one, is that indigenous peoples can take part in the assessment procedure. This is not possible during the EIA, as nature itself cannot participate in the assessment procedure. Consequently, the possibility of interaction and participation between the expert commission and indigenous peoples makes the expertise assessment a participatory mechanism tool.

It should be noted that there is no separate law on FPIC in Russia. However, in the process of the expertise assessment, the informed consent of the peoples of the North is documented in the form of protocols of the general meeting of the peoples of the North, where business representatives inform them about the project, and experts report the results of a scientific study of the impact of an industrial project on the peoples of the North, and the opinion of indigenous people is recorded in the form of an open vote on giving or not giving consent to the industrial development of the TNRMT, which is an integral part of the ethnological expertise.

According to the results of the study, it can be argued that the main task of the expertise assessment is to protect the rights and interests of the peoples of the North, and to study and identify possible positive or negative scenarios of the impact of an industrial project on the peoples of the North.

Based on the analysis of the materials received, the experts give an opinion on the imposition of a veto on the implementation of an industrial project or a conclusion on the possibility of implementing the project on the TNRMT.

When giving an opinion on the imposition of a veto on the implementation of the project, the experts substantiate their decision and propose development of new project documentation for the project.

When giving an opinion on the possibility of implementing an industrial project on the TNRMT, the experts propose legally binding practical measures to minimize negative consequences for the peoples of the North, and recommendations for concluding and implementing agreements on cooperation between the company and the peoples of the North, calculating fair compensation to the peoples of the North for losses incurred.

In our opinion, the expertise assessment of Yakutia contributes to a fair distribution of benefits through the mechanism of cooperation agreements, and ensures the calculation and payment of fair compensation to the peoples of the North.

At the same time, a significant drawback of the regional law on ethnological expertise is the lack of legal norms for assessing the social impact on the "culture" and "languages" of the peoples of the North.

With the evidence of such an impact, unfortunately, experts and legislators have not developed legal norms that allow assessment of the damage in monetary terms, which is caused to the intangible, original culture of the peoples of the North.

The law of Yakutia on ethnological expertise assessment establishes only the legal framework and expertise procedures, and each expertise assessment as a scientific study (assessment) of the industrial project's impact on the peoples of the North is unique, therefore a regulatory legal act of the regional government on the approval of an expert opinion and the implementation of measures is taken for each expertise assessment.

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Damage Compensation for Indigenous Peoples in the Conditions of Industrial Development of Territories on the Example of the Arctic Zone of the Sakha Republic

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Abstract: In the Sakha (Yakutia) Republic, hereinafter SR, the Arctic zones are the original habitat of indigenous peoples, who can conduct economic activities only in undisturbed or lightly disturbed lands. From this point of view, the problem of compensation for losses of indigenous peoples as a result of industrial development of territories is of particular relevance. At the same time, it is necessary to identify the main problems of indemnification of losses of the indigenous small-numbered peoples of the North (ISNPN) during the industrial development of the traditional natural resource management territories (TNRMT). The study was conducted using historical, geographical, analytical, synthetic, and statistical methods. In the Arctic zone, the diamond mining, gold mining, and coal mining industrial facilities are located inside TNRM areas. In the near future, it is planned to revive the tin industry, develop oil and gas fields on the continental Arctic shelf, and develop the Tomtor Complex Rare-Earth Deposit. In 2010, a law of the SR was passed: "On Ethnological Expertise in the Places of Traditional Residence and Traditional Economic Activities of the Peoples of the SR". To date, in the ethnological examination of SR, we have investigated 13 investment business projects. In the course of the investigation, it turned out that most of the comments from both experts and tribal communities concern the section of compensation for damages. The official methodology developed on materials from the polar regions of the western part of Russia cannot be extrapolated to the entire territory of the North, Siberia, and the Far East. It is necessary to develop regional methods for calculating losses of indigenous peoples, which regulate the interaction of subsoil users with the authorities and representatives of the clan communities engaged in traditional crafts.

Keywords: Arctic; mining industry; investment project; ecology; small-numbered peoples; damage compensation; traditional natural resource management; method of calculating losses

1. Introduction

Within the territory of the SR there are five administrative districts that are included in the Arctic zone: Allaikhovsky, Anabarsky, Bulunsky, Nizhnekolymsky, and Ust-Yansky Districts (Figure 1). However, as many researchers indicate [1–3], the polar regions of the SR were not included here. The issue of including eight districts of Yakutia (Abyysky, Verkhnekolymsky, Verkhoyansk, Zhigansky, Momsky, Oleneksky, Srednekolymsky, and Eveno-Bytantaysky) in the Arctic zone has been agreed with the Government of the Russian Federation, but not yet approved [4]. Thus, 13 districts are

assigned to the arctic and northern zone of the Republic, with population of more than 70,000 people, of which 20,000 are the indigenous peoples of the North (Figure 1). The purpose of this study is to identify the main problems of compensation for losses of indigenous small-numbered peoples of the North (ISNPN) during industrial development of traditional natural resource management territories (TNRMT) and recommendations for solving them.

Figure 1. Mining in the Arctic zone of Yakutia (2017).

The procedure of ethnological examination begins with a competitive tender for its implementation. The main documents submitted for ethnological expertise are (a) a draft of proposed economic and other activities; (b) an assessment of the impact of the projected activity on the original habitat and socio-cultural situation of small peoples (Foreign Economic Relations Department—FERD). The composition of the expert committee and the expert opinion are approved by the Government of the SR. The author of this article (Burtseva E.I.) was a member of the expert commission for 10 objects of ethnological examination, and for 1 object served as the Head and Executive Officer of related

FERD [5] Customer—Prognoz PJSC, 100% of which is owned by the Canadian company Silver Bear Resources Plc.

At present, the many researchers have raised the question of sharing the benefits from the development of mineral deposits on TNRMT between industrialists, authorities, and indigenous small-numbered peoples. Tulaeva S. and Tysiachniouk M. [6] considered various models of distribution of benefits: paternalism; corporate social responsibility and partnership. At the same time, they emphasize that, despite the introduction of more formalized methods for calculating the losses of ISNPN, an amount of the compensation does not allow restructuring a traditional economy on a new basis. Tysiachniouk M. et al. [7] considered the issues of agreements on benefit sharing in an oil sector of the Russian Arctic and Subarctic on the example of the Irkutsk oil region. The article emphasizes that despite a significant diversity of the existing agreements, none of them ensure the sustainable development of local communities, which is associated with the incompatibility of post-Soviet heritage, principles of corporate social responsibility, and local institutional structures. Tysiachniouk M. and Petrov A. [8] argue that the indigenous communities do not equally benefit from oil and gas production, and no single model of benefit sharing policy provides the sustainable local development. They propose to improve the knowledge base on the benefit sharing in the Arctic energy sector and call on the Arctic Economic Council to conduct a generalizing study with participation of many interested parties to develop the guiding principles for companies on the benefit sharing agreements in the Arctic.

In Yakutia during the Soviet times the interaction of the mining companies and the population living in the territory affected by the industrial facilities was based on paternalism. In 1993, the Government of RS(Ya) commissioned the Joint Stock Company ALROSA to annually transfer 2% of proceeds from sales of precious stones to improve the environmental situation of the Diamond Province. Compensatory measures included seven programs: construction, ecology, social protection, health, education, sports, and interregional relations [9].

One of tragic pages associated with the development of the diamond deposits was relocation of the Evenki village of Tuoy-Khaya, which was flooded during the construction of the Vilyuy hydroelectric power station designed to provide electricity for the diamond industry. In 1993, 40 million rubles at prices of that time were transferred from a fund of the Supreme Soviet of the Russian Federation for revival of the traditional activities of the Evenks and Evens of the Mirny and Suntarsky districts and material assistance to poor groups of the population. However, these funds were not used for their intended purpose and did not reach addressees (individuals) [10].

At present, compensation payments to the indigenous small-numbered peoples for the loss of the natural resources (reindeer pastures, hunting areas, fish resources, and reserves of wild-growing plants) began to be put into practice only after the issue of the Law "On Ethnological Expertise . . . " [11]. There are no agreements on the sharing of benefits from the industrial development of TNRMT in the Republic, but in conclusions of the experts of the ethnological expertise, as well as the scientific studies, this question is being considered and it is recommended to approve the tripartite agreement on cooperation between the industrial companies, state authorities of the RS(Ya), and authorized representatives of the ISNPN [12–14]. Thus, the current practice of the compensation payments to the indigenous small-numbered peoples of Yakutia from the loss of the natural resources as the result of the industrial development of TNRMT can be considered as one of the mechanisms for benefit sharing.

In recent years, quite a lot of scientific publications have appeared in the Republic on ethnological expertise and assessment of the impact of industrial facilities on the life of the indigenous peoples: on the development of the Russian Arctic, legal issues of ethnological expertise [15–17]; loss calculation method for ISNPN [14,18]; assessment of the impact of industrial facilities on hunting resources [19–21]; history of Arctic exploration [22]; ethnological examination of projects [23–25]; the issues of compensation of damage to indigenous peoples from industrial development of territories [26]; environmental problems of the Arctic and northern territories of Yakutia [27]; social security system for ISNPN [28], etc.

2. Materials and Methods

The following materials were used to complete this study:

- Research works with participation of the author in the framework of comprehensive research aimed at the development of productive forces and the social sphere for 2016–2020:
  - "Comprehensive Assessment of the Impact of Climate Change and Industrial Development of the Arctic on the Livelihoods of the Indigenous Population of Yakutia's Nizhnyaya Kolyma District". Line 1 "Improving the Quality of Life of Yakutia's Population" (2016);
  - "Assessment of the State and Analysis of the Main Trends in the Natural and Socio-Economic Status of Human Potential in the Arctic Economic Zone of the SR". Line 1. Assessment of the Current State of Socio-Economic Complexes (2017);
  - "Comprehensive Studies of the Impact of Changes in the Original Habitat of Indigenous Peoples and the Socio-Cultural Situation on the Development of the Ethnic Group During the Industrial Development of Traditional Environmental Management Areas" (2017);
- Government Decree of the SR on the Integrated Program "Socio-Economic Development of the Arctic and Northern Districts for 2014–2017 and for the Period up to 2020";
- Government Report about the State and Protection of the Environment of the Sakha (Yakutia) Republic in 2014 [29];
- FERD materials on 13 investment projects;
- Opinions of the expert commission of ethnological expertise on 13 investment projects;
- Expeditionary materials in Ust-Yansky (2018) and Anabarsky District (2018) of Yakutia.

The study of the industrial development of the Arctic of its impact on TNRMT and the life of the indigenous peoples was carried out using the following methods: historical and geographical (historical and territorial aspect of industrial development), analytical and synthetic (theoretical analysis and synthesis of literary sources), statistical (using statistical data on environmental pollution for 2001–2014), expeditionary and survey (socio-economic studies of the population (Evens) living in the territory of "Vertikalny" silver deposit development at Mangazeysky ore field in SR's Kobyaysky District). For the assessment of pollution in the Arctic areas of natural complexes of the Republic we used methods recommended by Burtseva E.I. [30], i.e., universal quantitative indicator (UQI)—the percentage of the attribute in the estimated system of parameters. This is the factor intensity index (FII), which is the deviation from the average state of the object in relative terms. The essence of the methodical approach is to bring indicators with a different unit of measure into a single quantitatively comparable system using this index, which is determined by the formula:

$$UQI_i = \frac{a_i}{M},$$

where: a_i—absolute value of the i-th indicator; M—absolute average value of a set of indicators.

In order to compensate for the losses of the indigenous minorities of the North, Siberia, and the Far East, in 2009 the method of calculating the amount of losses caused to the associations of these peoples was published for the first time [31]. However, the application of the document in specific projects of impact assessment on the ethnological environment (FERD) caused many controversial issues, and some of its provisions were not acceptable for calculating the damage [14]. Potravny et al. [24] on the basis of studies conducted in areas of compact residence of indigenous peoples in the Arctic zone of the Republic (for example, the activities of the group of companies "Almazy Anabara"), offer mechanisms for public–private partnerships between government, business, and local communities for the socio-economic development of Arctic communities.

3. Results

3.1. Compensation of Damage with Subsoil Use

The withdrawal of land plots for the needs of subsoil use is necessarily accompanied by the requirement of payment of compensation and compensation for the losses caused by the subsoil user.

Experience of Foreign Countries. Practically from the very dawn of the mining industry, starting from the 15–18th centuries, a number of western countries' subsoil users (France, Germany, England, etc.) tended to remunerate the owner of the land plot for damages [32]. Currently, foreign countries have a flexible economic mechanism of compensation measures. For example, in the states of Colorado and Nevada (USA), mining firms begin their activities only after transferring the cost of reclamation and the cost of restoring natural resources to a special account. After mining operations, the money transferred is returned to the company for the restoration of disturbed land [33,34]. In Canada, agreements are concluded on compensation for the impact of industrial facilities between mining companies and indigenous peoples. Agreements for indigenous peoples include specific benefits and procedural measures aimed at protecting their interests and providing compensation in case of damage: payments or funds for community development, development of community infrastructure (public buildings, roads), monitoring and environmental protection, employment, recultivation, restoration, and transfer of land after the development, etc. [35].

Indemnification in Russia. Compensations for damage as a result of industrial activity in the USSR first began in 1962, when the state began to pay state farms and collective farms monetary compensation for the removal (loss) of agricultural land, and thus the damage to natural resources, was officially recognized. In the early 1990s in Russia, the environmental policy pursued by the state was fundamentally changed, when state environmental review bodies were ordered not to take into consideration any pre-planned, pre-project, and project documentation without information on environmental impact assessment (EIA). Unlike most foreign countries, where the EIA procedure and environmental impact assessment have been legislatively consolidated (USA—1969, Japan—1973, Canada—1974, Sweden—1975, etc.), in our country the EIA procedure received legal status only in 2001 with the first law of the Russian Federation "On the Protection of the Environment" (1991).

3.2. Mining Industry Development

The mining industry in the Arctic and the northern territories began to develop from the development of a coal deposit in the Verkhnekolymsky region (1936), and during the Second World War, underground mining began with development of Ese-Khaya Tin Deposit in the Verkhoyansk District (1941). In 1951, the "Deputatsky" Mine was opened in the Ust-Yansky District. The year 1961 saw the start of diamond deposits development: the Aikhal Open-Pit mine (1961) in the Mirny District (Figure 2). In 1963, there was gold mining in the lower reaches of the Yany River: "Kular" Mine in Ust-Yansky District. All of these deposits, except for Ese-Khaya, were developed using the open-pit method. Market relations, which began in 1991, led to the emergence of crises in almost all sectors of the mining industry of Yakutia (except for the diamond and oil and gas) and many enterprises were liquidated (Table 1).

Today in the Arctic zone of TNRMT there are objects of diamond, gold, and coal mining industries (Table 2).

Diamond Mining Industry. Starting in 1997, the Aikhal Deposit (after completion of the open pit mining), has been converted to an underground mine. Today the mine has reached its design capacity of 500 thousand tons of ore. The development of placer diamond deposits in the Republic began in the 1990s. In 1994, the Nizhne-Lenskoye Diamond Mining Enterprise was established, which in 2013 sold 100% of the shares to Almazy Anabara OJSC. The company was established in 1998 to develop alluvial diamond deposits in the Anabarsky, Bulunsky, Oleneksky, and Zhigansky Districts. Since 2014, new mountain areas have been developed: "Ebelyakh" and "Gusiny" in Anabarsky, and the development of the "Verkhnee Molodo" section in the Olenek District began.

Figure 2. "Aikhal" Open-Pit Mine, open-pit diamond mining.

Table 1. Liquidated (closed) mining enterprises in the Arctic regions (1951–1994).

Industry	Enterprise	Start	Liquidation	Mining Method	Administrative District
		Year	Year		
Tin Mining	"Ese-Khaya" Despoit	1941	1968	Закрытый (подземный)	Verkhoyansky
	"Deputatsky" Deposit (MPC)	1952	1997	Открытый (карьерный)	Ust-Yansky
	"Deputatskolovo" JSC	1990	1999	" "	Ust-Yansky
	"Sakhaolovo" LLC	2000	2009	" "	Ust-Yansky
Gold Mining	"Kular" Deposit	1963	1994	" "	Ust-Yansky
Diamond Mining	"Aikhal" Deposit	1961	1997	" "	Mirninsky
	"Nizhne-Lenskoe" OJSC	1994	2013	" "	Anabarsky, Zhigansky, Oleneksky

Table 2. Active mining enterprises in the arctic regions (1998–2015).

Industry	Enterprise	Start	Mining Method	District
Diamond Mining	"Aikhal" Deposit	1998	Closed (underground)	Mirninsky
	"Almazy Anabara" OJSC	1998	Open (open-pit mine)	Anabarsky, Bulunsky, Zhigansky, Oleneksky
Gold Mining	"Arctic-Capital" Holding	2015	" "	Anabarsky, Allaikhovsky, Bulunsky, Ust-Yansky
Coal Mining	Zyryansky Coal Mine	1936	" "	Verkhnekolymsky
Tin Mining	"Tirekhtyakh" RIC	2015	" "	Ust-Yansky

Gold Mining Industry. Today, one of the successful mining companies for the extraction of gold is "Arctic-Capital" Holding, which consists of ten independent companies (LLC). Each of them carries out its own type of activity: geological exploration, transportation of goods, production of mining and processing equipment, etc. In total, the holding employs 881 people—all local personnel, which

contributes to the creation of new jobs for young people, among which there is a high degree of unemployment [36].

Coal Mining Industry. The beginning of the development of a coal deposit in the Verkhnekolymsky District is considered to be 1936, when 8.5 thousand tons of coal were mined at the Zyryansk Coal Mine. At that time, the district was part of the Dalstroy Area of USSR's NKVD (People's Commissariat for Internal Affairs). Currently, coal mining is carried out in the Northeastern District on the basis of the development of the Zyryansk Coal Basin (Verkhnekolymsky District) in the Nadezhdinsky section with more favorable mining and technical conditions for development [37].

Tin Mining Industry. Due to the economic crisis in the country, the fall in tin prices on the world mining market was closed in 1997. However, today tin mining has every chance of a rebirth: the RIC group is implementing a large project of the Tirechtyakhsky Tin Deposit with a capacity of 3000 tons for 20 years. In 2015, "Yanolovo" won a license for 65 million rubles for the right to use the subsoil of the Tirekhtyakh Stream. For the development of the deposit, the RIC Group attracts a Chinese investor, currently negotiations are continuing with a Chinese partner [38].

Perspective Projects

Today in North Yakutia, within the framework of complex geological and geophysical studies, a study has begun on the junction area of the Leno-Tunguska oil and gas province and the Laptevskaya potential oil and gas area with the prospect of further development. The area of complex geological and geophysical works for the search for oil and gas deposits and their subsequent exploitation is located in the territory of the Bulunsky and Anabarsky Districts of the SR. The following will fall under the influence of geological and geophysical works in the territory of the Anabarsky Ulus: four tribal communities in the Terpey Thumus Resource Reserve (the Terpyay Tribal Community) and two municipal unitary enterprises. In the Bulunsky District, Taymylyrsky MUE and KFH Skrybykin I.G. Peasant Farm Enterprise will be affected by these works.

One of the promising investment projects is the development of the Tomtor Complex Rare-Earth Deposit (niobium, yttrium, scandium, lanthanum, etc.) in the Tomtor-Taas Area of the Olenek District. The content of rare-earth metals in its ores reaches 12%, the explored reserves amount to 150 million tons, while the Tomtor ores contain rare metals, in particular, large concentrations (about 5%) of niobium [39]. Tomtor rare earths are radioactive due to the content of uranium and thorium. According to the results of the integrated environmental monitoring of the Ministry of Natural Resources of Yakutia (2014) in certain areas of the Buranny licensed site, where active exploration and mining of ore is planned, the background radiation reaches 40 μR/hour (safe values are 5–25 μR/hour) [40].

In August 2014, a meeting was held between representatives of the leadership of the SR and local residents in the Saskylakh Village of the Anabarsky National District, where they discussed the issue of the changing borders of "Terpey-Tumus" [40] SPNA. To provide fuel and energy resources for the development of the Tomtor Deposit, industrialists need an autonomous power supply. At the same time, it is planned to use Pronchishchevskaya Oil and Gas Deposit for the construction of its own power generation facilities, but the problem is that it is located on the Terpey-Tumus Resource Reserve. From time immemorial, the indigenous minority peoples of the Anabara—the Evens, the Evenks, the Dolgans—have lived on the resource reserve and they are engaged in traditional types of environmental management. Here lie the lands of several tribal communities, rich in fish, fowl, and wild plants. The meeting ended in favor of the local population: having united the efforts of the municipal authorities, deputies of all levels, the Anabarians managed to convince the government that they were right. As a result, it was decided that "RT—Global Resources" LLC will conduct geological exploration at SPNA under the control of the Ministry of Nature Protection, the entire production process will be accompanied by continuous monitoring.

3.3. Environmental Pollution

Closure of many unprofitable enterprises in the gold, tin, and coal mining industries in the post-Soviet period has led to the reduction of many sources of environmental pollution, which has led to a reduction in emissions of pollutants into the air and pollutants into water bodies. For example, in the Arctic zone, low levels of pollution are identified for pollution of surface waters (Table 3) [27].

Table 3. Discharges of Polluted Wastewater to Surface Water in Arctic and Northern Areas.

Name of Ulus	Discharges (Average for 2001–2010), Million m^3	UQI_i	Discharges	
			Ranking Scale	Pollution Degree
Olenekskiy	0.00	0.00	<0.2	Low
Srednekolymskiy	0.00	0.00		
Eveno-Bytantayskiy	0.00	0.00		
Momskiy	0.02	0.00		
Zhiganskiy	0.1	0.02		
Allaikhovskiy	0.27	0.04		
Abyiskiy	0.27	0.04		
Verkhnekolimskiy	0.66	0.10		
Nizhnekolymskiy	0.96	0.15		
Ust-Yanskiy	1.14	0.17		
Anabarskiy	1.60	0.24	0.21–0.4	Lowered
Bulunskiy	1.81	0.27		
Verkhoyanskiy	1.96	0.30		

However, despite the reduction of pollution sources, the Arctic coast remains one of the ecologically unfavorable regions of Russia. To date, the most acute problem in environmental terms is pollution of surface waters. The condition in the rivers of the Lensky basin is assessed by pollution class 4 (dirty). According to the complex of the main pollutants, the waters of the river basin flowing into the Arctic Ocean are classified as follows: Yana—"dirty"; Anabar at s. Saskylah—"very polluted"; Indigirka—"dirty"; Kolyma and Olenyok—"polluted" [27]. A special role in environmental pollution is played by the effects of underground nuclear explosions (UNE) conducted in North Yakutia. A total of four UNEs were conducted, of which two—"Kristall" and "Kraton-3"—were officially recognized as "accidental" with releases of radionuclides to the surface. At present, the sources of environmental pollution are still the effects of the industrial development of the Soviet Arctic: disturbed lands of the mining industry, facilities of the liquidated (closed) enterprises of the tin and gold mining industry, abandoned weather stations, airfield sites of a military unit of the Russian Ministry of Defense, etc.

The sources of environmental pollution are still the effects of the industrial development of the Arctic during the Soviet era:

1. Disturbed lands of mining industry.
2. Objects of the liquidated enterprises of tin and gold mining industry (tailing dump):
    - Deputatsky Processing Plant (Ust-Yanskiy Ulus);
    - Kularskaya Gold Processing Plant (Ust-Yanskiy Ulus).
3. The Arctic coast: abandoned weather stations (Bulunsky and Nizhnekolymsky uluses).
4. The Arctic coast (Kotelny and Bolshoy Lyakhovsky islands): airfield sites of a military unit of the Ministry of Defense of the Russian Federation

A special contribution to the deterioration of the ecological situation was made by the underground nuclear explosions "Gorizont-4", "Kristall", "Kraton-3", the last two of them were officially recognized as "accidental" with radionuclide releases to the surface.

In the 1990s, in places where the indigenous people of the Republic lived, in order to preserve their original environment, some areas were given the status of national administrative-territorial

formations. As of 1 January 2017, 4 uluses (districts) have such status in the Republic, all of them are located beyond the Arctic Circle:

- Anabarskiy National Ulus (Dolgan-Evenkiysky).
- Olenekskiy Evenkiyskiy National Ulus
- Eveno-Bytantayskiy National Ulus
- Zhiganskiy Evenkiyskiy National Ulus

3.4. Ethnological Expertise

For the current period, 13 investment projects were reviewed in the ethnological expertise of SR, including five projects in the Arctic regions. In the course of ethnological expertise, it turned out that most of the questions and comments from both experts and tribal communities concern the section of compensation for losses of the ISNPN peoples.

Official Method [26] for calculating the amount of losses of ISNPN caused by economic activities is based on the income method—the lost annual gross income of right holders as a result of violations of TNRMT.

The main remarks to the current methodological approaches for calculating the loss of ISNPN:

- according to the Methodology, possible losses of tribal communities should be calculated using the coefficient for recalculating the lost annual gross income into loss of profits, which expresses the period of recovery of disturbed production. However, production cannot be restored unless disturbed natural resources are restored. In order to calculate losses of ISNPN, the time lag coefficient should be used, which includes (a) the period of recovery of disturbed natural complexes; (b) the deadline for the restoration of disturbed production; (c) the period of construction (operation) of an industrial enterprise;
- questions about the recipient of compensation (communities, local governments, public organizations) and a number of other organizational issues of the examination are not covered;
- the term "stressful impact" refers to anxiety caused in animals and is used in calculating the losses of indigenous peoples from the deterioration of reindeer pastures and hunting resources in 1–2 zones. For fish resources and wild plants, losses are estimated only in the 1st zone, whereas all living organisms, including plants and fishing resources, experience stressful effects.
- socio-economic damage is represented only by its economic component (losses caused to land users), but social damage is not taken into account. Industrial companies conducting production activities in areas of traditional environmental management should compensate for social damage in order to improve and improve the quality of life of ISNPN in the form of money or other social events.

3.5. Discussion

According to the Methodology, the stress impact of industrial facilities is carried out on the basis of the number of resident people: more than 100 people, 50–100 people, 20–50 people, up to 20 people. The practice of calculating the loss of indigenous people in specific projects showed that the allocation of stress zones of industrial facilities to traditional types of use in terms of the number of workers causes many controversial issues and turned out to be unacceptable for calculating the damage, since it depends on many objective and subjective factors. In 2011–2012 by the order of the "Yakutniproalmaz" Institute, we completed work on estimating the damage of ISNPN from the economic activities of "Timir" MMC (iron ore deposits Taezhnoye and Tarynnakhskoye); in 2014, by the order of MMC "Timir" CJSC, the same work was done on the "Taezhnoye" deposit.

According to the materials submitted by different customers, the number of employees at the Taezhnoye deposit differs by 33 times [14]. Accordingly, the amount of compensation payments also differs: based on the materials of the "Yakutniproalmaz" Institute, the annual lost gross income of "Bugat" CSC was 1.6 million rubles, or $51,379.38 as of 29 November 2012, whereas lost profit

before commissioning of the "Taezhnoye" MMC for 2012–2026 was 22.8 million rubles, or $732,156.1 dollars. According to materials of "Timir" MMC CJSC, the annual lost gross income of "Bugat" CSC amounted to 10.4 thousand rubles, or $333.97, loss of profits before commissioning "Taezhnoye" MMC was $2055.18.

As these figures show, calculating the losses of ISNPN on the basis of identifying stress zones according to the number of employees ultimately affects the size of lost profits and cannot serve as an objective indicator of the allocation of stress intensity zones of industrial facilities on TNRMT.

Recommendations for calculating the size of losses of ISNPN:

- Loss of profits of rights holders depends primarily on the area of man-made violations, which in turn is determined by the radius of the impact of industrial facilities. The intensity of the impact of industrial facilities on natural complexes depends on many factors, of which it is necessary to choose one indicator. We believe that such an indicator is not the number of employees as adopted in the Methodology, but the hazard class, as well as taking into account the nature of violations (areal—open pit mines, other industrial facilities, linear—pipelines, highways, etc.).
- We propose to identify stress zones of industrial facilities by hazard classes. Hazard classes in mining can be defined in accordance with SanPiN 2.2.1/2.1.1.1200-03 and the Draft Federal Law "On Amendments to the Federal Law "On the Industrial Safety of Hazardous Production Facilities" dated 24 January 2012 (Table 4).
- Compensation for losses of small indigenous peoples, including lost profits in case of deterioration of land quality, temporary occupation of land plots, etc., is fully subject to land users, landowners and tenants of land plots according to Art. 57 P. 2 of the Land Code of the Russian Federation dated 25 October 2001 No. 136-FZ (as amended by Federal Law dated 31 December 2014 No. 499-FZ).
- In order to compensate for social damage and improve the quality of life of indigenous peoples, conclude a tripartite "Agreement on Cooperation and Financing Specific Programs to Promote Sustainable Development and Adaptation of Indigenous Peoples in the Project's Area of Influence Between the Industrial Company (Project Customer), SR Government Authorities and Authorized Representatives of the Indigenous Minorities".
- In order to clarify the impact of industrial facilities on the territory of traditional environmental management, conduct ethnological monitoring of the monitoring of their condition and quality of life of indigenous peoples, including the subsequent specification of the extent of damage, both environmental and socio-economic.
- The practice of assessing the damage caused to associations of indigenous peoples showed that the cost of products of traditional types of environmental management varies greatly by region: it is 2–3 times lower in agricultural than in industrial ones. This can be explained by the weak development of the domestic market in agricultural areas: for example, small nations give free rein on kinship ties or sell at a very low price when the price of imported essential goods in the northern uluses is 3–4 times more expensive than in the central or southern areas. In this situation, we recommend applying the value of the consumer basket, which constantly monitors prices to calculate the cost of the subsistence minimum for food and non-food items, as a basis for calculating production and economic indicators. However, the cost of living takes into account a certain range of socially important goods regulated by the state. For this reason, the real market value of other goods is much higher, which should be taken into account when calculating the production and economic indicators of the tribal communities using the appropriate coefficient.
- According to the results of scientific research on the impact of industrial facilities on biological resources to calculate losses of indigenous peoples, taking into account the vulnerability of natural complexes, we can distinguish three areas of impact on traditional types of environmental management: 1st zone—complete land alienation, 2nd zone—strong impact, 3rd zone—moderate impact. At the same time, we recommend not to take into account the 4th and 5th zones of impact

of industrial facilities when calculating the losses of ISNPN, since the factorial (technogenic) load in these zones of influence is less than 10%. In addition, these zones are under the influence of other economic and public facilities, which may increase the cost of the total damage caused by industrial enterprises to the TNRMT.

- one of the leading indicators of the allocation of stress intensity bands of industrial facilities is the resistance of natural complexes to anthropogenic factors. According to research conducted in SR, the vulnerability of ecosystems in the tundra (forest tundra) is 3–1.5 times higher than in the northern and middle taiga [30]. For this reason, we believe that it is more expedient to develop standards for the Republic as a whole by zones/subzones of traditional environmental management in stages. Considering the particular danger of industrial development for the Arctic and northern territories of Yakutia, where it is planned to implement large-scale investment projects, the development of standards should begin in North Yakutia.

Table 4. The stressful impact of industrial facilities on the types of traditional environmental management (deer pastures, habitats of wild plants, hunting and fish resources) in the Sakha (Yakutia) Republic for the summer season.

Industrial Impact	Intensity of Violations of Earth (Water) Surface and Biological Resources by Areas of Anthropogenic Impact					
Category	Areal Objects *			Linear Objects **		
	Category 1—Extreme Danger	Category 2—High Danger	Categories 3–4—Medium Danger	Category 1—Extreme Danger	Category 2—High Danger	Categories 3–4—Medium Danger
	Ground (Water) Surface and Biological Resources in Tundra, Forest-Tundra, km					
Complete alienation	0	0	0	0	0	0
Strong	4.5	2.5	1.3	2	1.5	0.5
Mild	10	8	2.5	3	2.5	1.5
	Ground (Water) Surface and Biological Resources in the Northern and Middle Taiga, km					
Complete alienation	0	0	0	0	0	0
Strong	2	1.5	0.5	1	0.5	0.2
Mild	5	3.5	1	1.5	1	0.3

* At the location of industrial facilities 1–2 hazard classes downstream of the watercourses, when calculating the damage to fish resources, we apply a multiplying factor of 1.5. ** When the routes of deer and hunting species of animals change, all impact zones are equal to complete alienation.

4. Conclusions

In accordance with this study's objective, we have identified the main problems of compensation of losses of indigenous people from the industrial development of TNRMT, which mainly concern methodological approaches to calculating losses. The current official Method of calculating losses of indigenous peoples provides only for the loss of biological resources used by indigenous peoples, and does not provide for damage to ethnocultural and social phenomena—language, culture, way of life. In FERD, social and economic damage is represented only by its economic component (losses caused to land users), but social damage due to the complexity of its assessment is not taken into account. We believe that industrial companies conducting production activities in areas of traditional environmental management should compensate not only for the loss of biological resources, but also social damage to improve and improve the quality of life of indigenous peoples in the form of cash or other social activities (for example, employment). At the same time, it is necessary to adopt Canada's experience in damages in the form of Agreements with the participation of SR state authorities:

5. Findings

1. Some provisions of the official Methodology for calculating losses of small indigenous peoples turned out to be unacceptable for calculating losses. In particular, the number of workers at industrial facilities cannot serve as an objective indicator of the allocation of impact intensity zones (impact radius) on the biological resources of traditional natural resource management.
2. Current official methodology developed on the materials of the polar regions of the western part of Russia cannot be extrapolated to the entire territory of the North, Siberia, and the Far East. It is necessary to develop regional methods for calculating losses of indigenous peoples, which regulates the interaction of subsoil users with the authorities and representatives of the clan communities engaged in traditional crafts.
3. The planned industrial development of the Arctic zone, which is characterized by a high vulnerability of natural complexes to man-made impacts and low assimilation capacity, can cause large-scale disturbances of the earth's surface, environmental pollution of the original habitat of ISNPN.
4. In order to compensate for the social damage of indigenous people, to conclude tripartite "Agreement on Cooperation and Financing Specific Programs to Promote Sustainable Development and Adaptation of Indigenous Peoples in the Project's Area of Influence Between the Industrial Company (Project Customer), SR Government Authorities and Authorized Representatives of the Indigenous Minorities".

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Globalizing Extraction and Indigenous Rights in the Russian Arctic: The Enduring Role of the State in Natural Resource Governance

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Abstract: The governance of extractive industries has become increasingly globalized. International conventions and multi-stakeholder institutions set out rules and standards on a range of issues, such as environmental protection, human rights, and Indigenous rights. Companies' compliance with these global rules may minimize risks for investors and shareholders, while offering people at sites of extraction more leverage. Although the Russian state retains a significant stake in the oil and gas industries, Russian oil and gas companies have globalized as well, receiving foreign investment, participating in global supply chains, and signing on to global agreements. We investigate how this global engagement has affected Nenets Indigenous communities in Yamal, an oil- and gas-rich region in the Russian Arctic, by analyzing Indigenous protests and benefit-sharing arrangements. Contrary to expectations, we find that Nenets Indigenous communities have not been empowered by international governance measures, and also struggle to use domestic laws to resolve problems. In Russia, the state continues to play a significant role in determining outcomes for Indigenous communities, in part by working with Indigenous associations that are state allies. We conclude that governance generating networks in the region are under-developed.

Keywords: benefit sharing; oil and gas; resources; governance; Russia; resistance; governance generating networks; paternalism; partnership; corporate social responsibility

1. Introduction

The governance of extractive industries has become increasingly globalized, with authority shifting from the state to both the international and local scales, through processes of "glocalization" [1,2]. Although the 1962 UN General Assembly resolution on "Permanent Sovereignty over Natural Resources" enshrines every state's sovereign rights on its territory "freely to dispose of its natural wealth and resources in accordance with its national interests", and "respect for the economic independence of States, in practice different systems of property rights and licensing, and global supply chains create a variety of opportunities for citizens to influence extraction and revenues from natural resources. At the international scale, the tools for governing the extractive sector have become increasingly complex, as states sign international conventions and multi-stakeholder institutions

set out rules and standards on a range of issues, such as environmental protection and human and Indigenous rights [3]. Companies' compliance with multiple global rules may minimize risks for investors and shareholders [4,5], while offering people at sites of extraction more leverage. Pressure and resources at the international scale allow civil society largely to bypass the nation-state, addressing their concerns to intergovernmental or nongovernmental actors, whom they can now more easily contact via the Internet, which has also facilitated networking among social movement organizations and activists [6–8]. Meanwhile, this rapid transfer of information has allowed the environmental and social performance of oil and gas companies to come under increased scrutiny for their negative environmental impacts, as well as for seizures of land from Indigenous peoples and violations of their rights [9,10].

A particularly salient example of the intertwining of environmental and human rights issues is the Russian Arctic. As the fragile environment of the Arctic is affected by extraction, the rights of local residents, especially traditional reindeer herders, are under threat. However, identifying paths for resolving these issues through the governance of the oil and gas industry is particularly challenging in the Russian context. In Russia, land is owned by the state, and may be leased to companies and other users. Indigenous people often do not have property rights to their traditional territories, although many oil and gas companies voluntarily adopt international conventions related to the rights of Indigenous people. In the Russian Arctic, the growth of extractive industries also has set off conflicts over industrial development and revenue-sharing from the oil and gas sector. Oil exploration, extraction, and transport have severe impacts on the environment and livelihoods of Indigenous peoples, including degradation of land and water from oil spills, the loss of pasture land, and the fragmentation of territory used for reindeer herding and hunting [11–14]. In some cases, Indigenous communities and associations, as well as other non-governmental organizations (NGOs), have resisted industrial development, occasionally using tactics that extend to the global level and place pressure on financial lending institutions, such as during the "Green Wave" campaign against the expansion of oil development in Sakhalin in the Russian Far East [15].

To avoid these problems and the negative publicity they entail, international financial institutions and investors have developed a host of guidelines and standards to ensure the protection of Indigenous peoples' rights to traditional natural resource use and to require benefit sharing by companies in the extractive sector in the form of social investment, development plans for Indigenous communities, or, at a minimum, compensation for damage to traditional livelihoods [16–18]. These requirements are one element of the globalization of corporate governance. However, due to significant levels of state ownership and investment by the Russian government, as well as the dependence of many countries on Russian oil exports, Russian companies are less sensitive to the opinions of transnational stakeholders, and therefore, less vulnerable to reputational risks outside the country and to pressure from transnational organizations and social movements [19–21]. However, continued globalization may be changing the status quo in Russia's oil and gas sector [22]. To examine this issue in detail, we focus on the Yamal peninsula, a site of rapidly expanding oil and gas development in the midst of a significant Indigenous population.

2. Materials and Methods

Data for this study were collected using qualitative methodologies [23]. The collection and analysis of materials were carried out in 2017–2019. The primary research strategy was the case study method based upon a detailed and comprehensive study of Yamalo-Nenets Autonomous Okrug (YaNAO), or Yamal (Figure 1) Yamal is a strategically important region for the development of the Russian oil industry, and a number of major Russian oil and gas corporations operate in Yamal. At the same time, Yamal is home to a large number of Indigenous people, many leading a traditional way of life. Intensive industrial development of the region has led to negative consequences for Indigenous people, whose well-being depends on the quality of the environment [24,25]. This case study allows us to consider the interactions among the state, oil and gas corporations, and Indigenous peoples in

the context of the globalizing extractives sector. Processes of globalization are penetrating YaNAO; markers of globalization include the spread of global environmental and social standards that shape industrial activities and relations with foreign investors. However, the state remains committed to its role in controlling oil extraction and civic activity in the region. Thus, this case study allows us to analyze the key characteristics of interactions between global trends and state control in the field of natural resource management.

Figure 1. Map of Yamal-Nenets Autonomous Okrug with research sites.

The main research methods included semi-structured interviews (Appendix A: Table A1), document analysis, and participant observation. Interviews were conducted with representatives of local and regional authorities, experts based in scientific institutes and NGOs, and local residents, including members of reindeer herding communities and employees of reindeer herding enterprises. In total, 23 interviews were conducted. Interview questions focused on the following issues: The impacts of the oil and gas industry on the lives of local residents, mechanisms of interaction with the government and companies, government programs to support Indigenous people, and companies' engagements with Indigenous people. The interviews were transcribed and analyzed by the method of axial coding. In addition to interviews, observations were made in Indigenous settlements located in regions of oil and gas development. Document analysis also informs this study. The following documents were analyzed: Global standards related to the interaction of oil and gas companies and Indigenous peoples; state legislation defining the rules of interaction between companies and Indigenous people; and corporate reports describing the forms of interaction. The data obtained from different sources were compared, allowing for triangulation of the collected materials. The collected data helped to identify the features of interaction between oil and gas companies, Indigenous people, and state authorities.

3. The Globalization of Governance in the Oil and Gas Sector: The Theoretical Approach

As the rules and standards that govern the oil and gas sector have shifted from state-based government to global governance, including private efforts, such as the Extractive Industries Transparency Initiative (EITI) and the requirements of international financial institutions, there is an expectation that the state would be just one of many actors shaping company behavior. Governance may occur at many scales and involve many different actors; rules and standards are developing in a variety of institutional venues. Although they are not easily enforceable, global rules and standards often surpass state-based legal requirements for environmental protection and community consultation. For example, Indigenous rights may be more clearly codified at the international level than in domestic law. One would expect that global governance would then offer Indigenous communities greater leverage to address rights violations than domestic legal systems.

The globalization of governance in the extractive sector is manifested in several trends: The increasing dependence of extractive companies on international financial institutions; the development of global environmental and social standards; the involvement of non-state actors (corporations and NGOs) in shaping governance; and the institutionalization of global standards at the local level [26–29]. As the governance of natural resources has globalized, it has grown to encompass a range of regulatory and standard development institutions, such as the United Nations, notably through the International Labor Organization (ILO) convention, the Arctic Council, Organization for Economic Cooperation and Development (OECD) Guidelines, and the Responsible Care Initiative, among others. Multi-stakeholder initiatives like the Global Reporting Initiative, the Voluntary Principles on Security and Human Rights, Extractive Industries Transparency Initiative (EITI), and others foster transparency by encouraging companies to monitor and report social and environmental impacts [29–31]. In addition, companies may participate in voluntary environmental management certification schemes, such as International Organization for Standardization-14000 (ISO 14000), Occupational health and safety management systems-18000 (OHSAS-18000), the European Union Eco-Management and Audit Scheme (EMAS), and so forth. Some global standards specifically focus on the protection of Indigenous people's rights, such as ILO Convention No.169 and World Bank Operational Directive 4.20 on Indigenous people.

This article uses the concept of governance generating networks (GGN) to understand how extractive industries may be governed by multiple actors operating across different scales [32–36]. The GGN in this study is the oil production network, including companies, investment banks, equity partners, international and local offices, as well as state agencies at different levels and civil society actors (NGOs and Indigenous peoples' associations). Interactions among actors from the state, the private sector, and civil society in these networks link the transnational level and the local level. The main components of the GGN are (i) the transnational nodes of global governance design, (ii) the forums of negotiation, and (iii) sites of implementation.

In the transnational *nodes of global governance design* (see Figure 2), global institutions like the United Nations (UN), the Arctic Council (AC), the International Monetary Fund (IMF), the International Financial Corporation (IFC), the World Bank (WB), and the Extractive Industry Transparency Initiative (EITI), and other environmental management certification schemes develop new regulatory global standards, such as guidelines for oil companies to ensure the sustainability of oil production and the protection of Indigenous people's rights.

Governance decisions are not only made in the nodes of design, but also in *"forums of negotiation"* and *"sites of implementation"* [33]. Forums of negotiations can involve both global and local actors, can take the form of global conferences and meetings (for example, in the Arctic Council or its Sustainable Development working group, involving Indigenous people as permanent participants), and can occur at the national, regional or local level. The local forums can take place at public hearings, or extend from bottom-up resistance movements by local actors who appeal to global institutions.

Sites of implementation are geographic territories where governance arrangements are implemented and adapted to local circumstances. In the context of oil production, key sites of

implementation are the places of oil exploration, extraction, and transportation. In these sites, local stakeholders, and especially Indigenous people, experience the impact of oil development. These sites of implementation are connected to the transnational level by networks of state, market and civil society actors, interacting and negotiating over the development of global policies and standards, and the implementation of these standards in the management of oil companies.

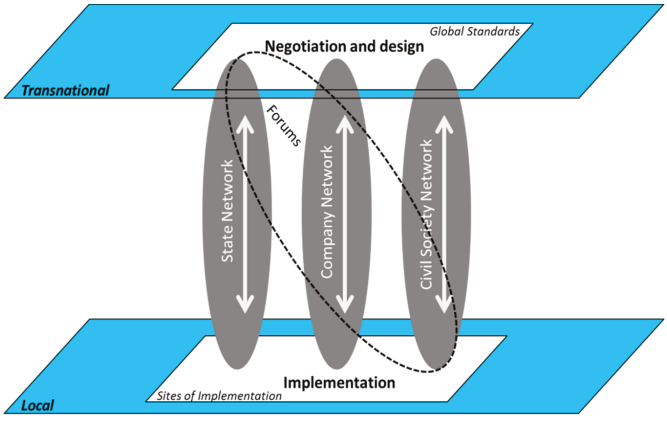

Figure 2. Governance of oil production network.

GGNs link transnational spaces with the "space of places", a term coined by Manuel Castells [6]. These connections can be established in different ways. In well-developed GGNs, the network includes civil society actors operating in the local space of places participating in the network from the bottom up. They may participate in NGO-led market campaigns to change corporate practices by highlighting grievances about the local activities of transnational corporations. A GGN also involves actors operating in transnational spaces with the aim of fostering, from the top down, institutional changes in specific localities by imposing sets of new rules and standards to be implemented locally. These actors may collaborate on new rules issued by transnational actors and institutions, such as the investors and equity partners who fund extraction. Oil companies may voluntarily adopt certain global standards to increase their competitiveness in the market, attract financial support, and comply with the requirements of financial institutions that provide loans or investment. Ideally, GGNs facilitate constant interaction and information exchange among local and transnational actors, with the ultimate goal of encouraging sustainable development in the specific localities. This type of robust GGN has been observed in the forest sector [33]. New modes of global governance and decision-making are crafted and recrafted to adapt to the globalization of oil production.

In this way, companies in the extractive sector may go beyond the requirements of national legislation by adopting and implementing global standards. Oil and gas companies adopt global standards to avoid reputational risks, satisfy their shareholders, limit pressure from NGOs and Indigenous organizations, and most importantly, to ensure future investment. For instance, private Russian oil companies seek loans from international lending institutions, such as the IMF, World Bank, or the European Bank of Reconstruction and Development (EBRD) and also need to maintain good relations with equity partners. These banks and partners have crafted lending requirements that are based on the global conventions and rules described above. This results in the institutionalization of global rules in concrete practices in places of oil exploration, extraction and transportation. The companies also respond to the interests and demands of shareholders by developing their own corporate codes of conduct and corporate social responsibility policies.

Scholars have argued that the role of the state in governing the oil and gas industry is changing, due to globalization and oil production supply chains that stretch across borders [37]. In a well-developed

GGN, companies go beyond a given state's legal requirements for operation, instead of maintaining the often stricter or more expansive standards from the global nodes of design. Cumulatively, these rules and standards encourage companies to pursue what has been referred to as a "social license to operate" (SLO) in order to further avoid risks and minimize conflicts [38,39]. SLO assumes that in addition to meeting legal requirements by obtaining licenses and permits, companies have to receive social acceptance and approval from society [40,41]. SLO helps companies to avoid conflicts with interested and affected stakeholders from civil society. Negotiated benefit sharing arrangements, both formal and informal, can effectively contribute to SLO [42–44]. The need to obtain SLO potentially may strengthen non-state actors' influence over rules and standards and may change the role of the state in oil governance. However, it is not clear to what degree the state's governance role has been supplemented by SLO and whether the need for social licensing and benefit sharing, in fact, shape the governance of oil and gas companies at specific sites of extraction [45,46].

Ultimately, companies may need to exceed basic legal compliance to ensure smooth operations at sites of extraction. However, at the same time, in Russia, major petroleum companies, such as Gazprom and Rosneft are owned or co-owned by the Russian state. As a result, they do not seek loans from global financial institutions and instead receive investment money from the Russian government. Moreover, oil and gas are strategic commodities for the Russian government in its effort to ensure economic development. Thus, in Russia, state-led governance may persist as more influential than transnational governance efforts.

4. Results: Indigenous People and Oil and Gas Extraction in the Yamal Peninsula

The sustainability of local communities in the Russian Arctic has become an urgent issue amid intensive industrial development, global climate change, and broader social transformation. Global warming has affected migration routes and the economic strategies of reindeer herders [47]. Intensive oil and gas development in the Arctic has led to environmental pollution, a decrease in wildlife populations, changes in animal migration routes, and a decline in freshwater fish populations [48]. These changes, in turn, have had an adverse impact on the traditional activities of local residents, such as hunting and fishing. Moreover, the expansion of oil development is associated with the seizure of some land used by local residents [49]. These challenges are present in Russia's Yamal peninsula, home to members of several Indigenous groups.

The Yamal Peninsula, located in the Russian Arctic, is part of the Yamalo-Nenets Autonomous Okrug (YaNAO), a federal administrative unit in the Tyumen Oblast. Most of Yamal's territory is located above the Arctic Circle and covered by tundra. Oil and gas deposits are concentrated in the Tazovsky and Yamalsky districts of YaNAO. Gas reserves in Yamal account for about 70% of all Russian gas reserves. In 2018, YaNAO produced 433.5 billion m^3 of natural gas, approximately 80% of all Russian gas and 20% of global gas production. Gas production is carried out by 39 enterprises at 98 fields, operated by large corporations, including Gazprom, Rosneft, and Novatek. Gazprom produces 75.9% and Novatek 14.5% of all gas in YaNAO. Oil reserves in YaNAO account for about 14.5% of all Russian oil reserves. In 2018 the okrug produced 23.9 million tons of oil, approximately 9% of all Russian oil production. Oil production is carried out by 25 enterprises at 72 fields in YaNAO. The main oil-producing enterprises in the okrug are Gazprom Neft (62%), Rosneft (15.5%) and Novatek (15%) [50]. The Yamal regional government is heavily dependent on oil and gas revenues for its budget. Natural resource extraction accounts for approximately 50% of the regional GDP, not counting associated construction and transportation industries, while agriculture, hunting and forestry are just 0.1–0.2% of GDP [51]. In recent years, the YaNAO regional economy has grown much more quickly than the Russian average [52,53]. In addition, oil and gas companies also provide infrastructure to the region. For example, the Obskaya-Bovanenkovo-Karskaya Line, a railway line crossing the peninsula, was built by Gazprom and is used for oil transportation.

Oil and gas companies have overseen significant development in the region, often with financing from outside Russia. Novatek, which produced 9% of all natural gas in Russia in 2018, operates in 56

fields and license areas in Russia, including in Yamal. In 2018, Novatek sold 66 billion cubic meters of natural gas inside Russia and sold 6 billion abroad [54]. In the Yamal region, Novatek is directing a gas production project entitled Yamal LNG, which includes the construction of a seaport close to the village of Sabetta. The port, located on the Arctic Northern Sea Route, will be used to ship liquefied natural gas, initially with exports mostly to Europe, but with plans for increased exports to China. Novatek has received foreign investment for the Yamal LNG project. The French company Total and the Chinese corporation CNPC each own 20% of Yamal LNG shares, and the Silk Road Foundation owns 9.9%; Novatek retains 50.1% of shares (Novatek 2018). In March 2018, Total agreed to invest in the LNG-2 project to be built on the Gidan Peninsula [54]. However, these are not the only international sources of financing solicited by Novatek. In 2016, the Japan Bank for International Cooperation (JBIC) agreed to provide a loan to Novatek [55]. The Russian government owns just over 50% of the shares in Gazprom and Rosneft, so they depend somewhat less on foreign investment.

Alongside oil development, three groups of Indigenous people live in Yamal—the Nenets, the Selkup, and the Khanty. The Nenets comprise the majority of Yamal's Indigenous population. Currently, there are more than 29,000 Nenets living in the region, who comprise almost 6% of the general population [56]. Traditionally, the Nenets are reindeer herders and fishers. In the Soviet period, the government attempted to force the local population into a sedentary way of life and work in Soviet reindeer herding kolkhozes (collective farms). However, due to the reindeer herders' nomadic lifestyles, extremely remote herding routes, and difficulty accessing the area, Soviet rule failed to significantly influence the traditional Indigenous way of life in Yamal. Currently, Yamal has the largest reindeer livestock population in Russia, with most of the animals belonging to private herders, some working in former state farms which have been privatized and others operating independently. In 2010, there were 600,000 reindeer in Yamal, yet only 44% of privatized state farms have leased land officially; other reindeer herders use the land for pasture and migration without a formal lease [24].

The rights of Indigenous people and their ability to engage companies and other agents are defined in Russian federal and regional laws. According to federal law, representatives of the Indigenous small-numbered peoples of the North and Far East (ISPN) are entitled to legal protection of their traditional lifestyle. A number of federal laws (FL) and laws of the autonomous okrug (LAO) further guarantee these rights—for example, FL-82 On Guarantees of the Rights of Numerically Small Indigenous Peoples of the Russian Federation (1999), FL-104 On the General Principles of Organizing Small Indigenous Communities of the North, Siberia, and the Far East of the Russian Federation (2000), LAO-56 On subsoil use in Yamal-Nenets Autonomous Okrug, LAO-46 On Reindeer Herding (1998) and LAO-52 On Traditional Subsistence Territories of Regional Importance in YaNAO (2010) [57–60].

4.1. Indigenous Associations and Fragile Resistance

In the early 1990s, Russia was engulfed by a wave of social movements and new social organizations, including those associated with Indigenous rights, due to Gorbachev's perestroika policies and the end of the Soviet regime. Social movements arose in Yamal, with the participation of several non-governmental organizations protecting the rights of Indigenous people. These groups helped to construct a legal basis to safeguard Indigenous rights at the regional level, including establishing mechanisms of public participation and governmental agencies dedicated to the rights of Indigenous people. These actions reduced conflict between the oil industry and Indigenous residents in Yamal. However, the effectiveness of these laws in guaranteeing rights appears questionable, as we explain in this section.

In the 1990s, oil and gas extraction intensified in YaNAO and the neighboring Nenets Autonomous Okrug (NAO). The land was seized for resource development and environmental conditions degraded, which spawned a number of conflicts between local residents and companies overseeing extraction. The Indigenous peoples' movement in Yamal established an organizational framework, creating the regional association "Yamal to its Descendants" *(Yamal—Potomkam!)* in 1989 to coordinate their activities. In the 1990s, NGOs organized public lectures on Indigenous rights in the region, which

forced the authorities and oil and gas companies to take into account the interests of Indigenous people when implementing industrial projects. Yamal to its Descendants helped to introduce regional laws protecting Indigenous people's rights, such as the Laws of Autonomous Okrug (LAO) on Subsurface and Subsurface Management in YaNAO, on Local Self-Government in YaNAO, on The Regulation of Land Rights, on Reindeer Herding in YaNAO, and on Traditional Subsistence Territories [59–62]. The Department for Indigenous Small-Numbered Peoples of the North was created in the YaNAO administration in 2005. In addition, a system of Indigenous peoples' representation was created, which reserved three seats, out of 22, for Indigenous members in the YaNAO legislative assembly.

Today there are several large Indigenous NGOs operating in Yamal. The largest and most important are "Yamal to its Descendants" and "Yamal", both of which receive support through state grants, with additional funding from companies active in the region. These organizations contribute to the preservation of the traditional Indigenous lifestyle and culture, and participate in providing environmental and ethnological expertise, mainly to the Russian state. They also help negotiate agreements among companies, government authorities, and local communities. While these organizations aim to strengthen the YaNAO government's pro-Indigenous policies, their work does not always enable ordinary Indigenous citizens to participate in decision-making about their environment and cultural preservation. Interviewees expressed concerns that these NGOs do not support complaints lodged by reindeer herders related to oil infrastructure, such as when pasture land is taken for development, leaving the territory for the growing reindeer livestock population in short supply.

The problem of land shortage is intensifying, due to ongoing industrial development in the Arctic and the seizure of land for oil extraction. Many reindeer herders express their desire to maintain their traditional economic practices, independent of the former state-owned reindeer herding enterprises, but they need sufficient land to do so. As one herder notes, "*It's easier [to herd reindeer] without the sovkhoz [state farm] . . . because it's not the state who invented this traditional way of life*". *(Reindeer herder, Yamal, Yamal district, 2017).* As one herder remarks on the competition for territory, "*It seems like a vast expanse. But, in fact, there are reindeer herders everywhere. If you are dropped from a plane somewhere, a reindeer herder will pop up in an hour and ask you what you are doing here.*" *(Head of the reindeer herding community, Yamal, Yamal district, 2017).* According to the official data for 2010–2015, the reindeer population surpassed 700,000 animals in Yamal, almost twice the level considered to be a sustainable carrying capacity for the territory. The administration currently aims to develop an economic policy that would help preserve reindeer herding in YaNAO as the basis of Indigenous residents' livelihoods, while also decreasing the number of reindeer overall, due to concerns about having sufficient land. However, this is quite difficult in practice. As one herder stated, "*The reindeer are his [the herder's] wallet, they are his bank... If he's going to constantly decrease [the herd], how does that work?*" *(Representative of the reindeer-herding enterprise-1, Yamal district, Yamal, 2017).*

Interviews revealed a deep ambivalence among local Indigenous people about oil and gas development. Some local citizens consider the negative effects of oil industry expansion in the Arctic a necessary evil, essential for the national economy and the country as a whole. An Indigenous community member seemed resigned to the damage, stating, "*Well, I think even if it [the fishing] is dying out because of the oil and gas complex, it is for the whole of Russia that this gas is flowing. And if the fish are dying, then we're going to have no fish . . . But if there's no gas, there's nothing, I guess*" *(Fisher, Yamal district, Yamal, 2017).* However, other local residents are concerned about further environmental deterioration, land loss, and disappearance of fish from rivers, due to future oil extraction. A community leader notes, "*They'll start constructing a gas tower in your district. They'll say, 'We're terribly sorry, but we have to relocate you to another district . . . ' [A local person] lived his whole life, moving along the river from the mouth to the headwaters. . . . He goes away, but there are other people out there already. They tell him, do not come here. And he becomes an outcast.*" *(Representative of the local administration-2, Yamal, Yamal district, 2017).*

Russian laws protecting the rights of Indigenous people do not always work in practice. For example, Russian legislation allows Indigenous citizens to be assigned "territories of traditional

nature use" (TTNU), enshrined in the Law on Traditional Subsistence Territories of Regional Importance in YaNAO (2010). However, since the law has come into force, not a single TTNU has been registered. Similarly, some federal laws safeguarding Indigenous people's rights were not implemented in YaNAO. For instance, the federal law on ethnological expertise that focuses on additional protection of Indigenous rights has not been actively used, partly due to the lack of supporting regional legislation. An NGO leader comments, "*We would really like [the law on ethnological expertise] to be applied. But this creates large obstacles for the gas industry. We tried to implement the law in Shuryshkarsky district. But it won't pass. We have gas industry people in 50% [of the seats] in the legislative assembly. They won't allow laws like that to pass.*" *(Representative of the NGO "Yamal for posterity," Salekhard, Yamal, 2017).* In addition, certain laws to assist reindeer herders are not enforced in practice, due to weak state control over the vast and often inaccessible territory in Yamal. The pasture territories where private herders let their reindeer graze have no formal borders, and disputes are resolved by custom: "*The borders are determined by herders themselves. They resolve these issues between themselves. The state does not get involved. It is too afraid.*" *(Head of the reindeer herding community, Yamal, Yamal district, 2017).* At the same time, reindeer herders cannot avail themselves of the opportunity to receive compensation from oil and gas companies for land seizure because the herders' rights to the land are not legally formalized. "*Lands are not vested in private herders. They are caught in between*" *(Head of the reindeer herding community, Yamal, Yamal district, 2017).* Reindeer herders do not count on state support, which they consider inadequate: "*Because it has always been like this among the Nenets, only counting on yourself.*" *(Local resident-3, Yamal, Yamal district, 2017).* Instead, they rely on themselves and their personal networks when dealing with problems.

In recent years, new conflicts have arisen between oil and gas companies and reindeer herders. For example, in 2013 the reindeer herders of Tazovsky district opposed the construction of Lukoil facilities, including a pipeline. Although the participants at a public hearing voted against the project, it continued. In 2019, another conflict arose between reindeer herders and industry in Yamalsky district. Gazprom was constructing a gas pipeline across the Ob Bay (Obskaya Guba), but local residents believe that the project threatens the Ob Bay ecosystem. In February 2019, the online community Voice of Yamal *(Golos Yamala)* posted the following message: "*Oil companies do not own the planet. I hope that you, who are going to drill in the Arctic, will think about your children and grandchildren, who will struggle for clean water, suffering from famine and crop failure. Look around. We live where the ice is thawing. We see the weather conditions change every year. A month hardly passes without some . . . damage done by rain, wind, or temperature. Look around you. We are here, where the water is getting warmer. People are losing their homes, their friends, their families*" [63].

One reindeer herder who was interviewed had published a message, addressed to the UN secretary, demanding protection for local citizens. "*We wrote a letter asking [the UN] to intervene in the construction process. We want a different, alternative pathway for the pipeline to be found. If they won't do it, then our fish in the north will probably disappear. The pipeline construction will destroy the whole [flora and fauna] that whitefish feed on*" [64].

Meanwhile, in conflicts between Indigenous people and companies, the Indigenous NGOs sometimes have not supported local actors resisting further industrial development. In March 2019, Yamal reindeer herders held a meeting on the tundra where they discussed the negative consequences of industrial development for the Indigenous local residents. This meeting was later sanctioned as an unauthorized public rally. The Indigenous association Yamal supported the side of the industry in the dispute, and lodged a complaint to the authorities against the organizer of the meeting. The reindeer herder faced fine of 30,000 rubles, until the court eventually decided that he was not guilty [65–67].

4.2. State Controlled Benefit Sharing

Although legal processes may fail to protect Indigenous people's environmental rights, the sharing of revenue from the industrial activity may compensate for the negative effects of extraction on local communities. Benefit sharing is a strategy enshrined in several global conventions to ensure that Indigenous people in particular receive some reward from extraction on their traditional territories.

In Russia benefit sharing arrangements in northern regions take diverse forms, most commonly through socio-economic partnership agreements among companies and regional, and in certain cases municipal, authorities [68–71]. In Yamal, there are a number of agreements among companies, government agencies, and local residents regulating the distribution of funds. These types of agreement are described below, from most to least formal in nature. The most significant benefit sharing happens through different levels of government intervention, although relatively little financial support is transferred to reindeer herders engaging in a traditional, nomadic way of life.

Socio-economic partnerships between the regional YaNAO authorities and oil and gas companies, which transfer funds to the regional budget for infrastructure development and social programs to the okrug, are the most significant form of benefit sharing in Yamal. A local leader stated, "*First of all, the regional budget is nearly 90% composed of oil money. The companies finance the construction of schools, hospitals, boarding schools—and the upkeep of all that, too. And the agreement is ultimately a deal between two big bosses—the president of the company and the head of the [YaNAO] district.*" *(Representative of the local administration-3, Yamal, Yamal district, 2017).* Initially, in the 1990s, the socio-economic agreements were tripartite—among the regional government, company, and Indigenous organizations, and were formalized at the YaNAO level. Currently, however, the agreements are generally bilateral between the state and the company. "*The level of social investment provided by a company is determined during negotiations with the regional authorities.*" *(Representative of the Department of Indigenous Affairs, Yamal, Salekhard, 2017).* Funds from oil companies are transferred to the regional budget and used to construct and support housing, schools, churches, and hospitals. These framework agreements between an oil company and the regional authorities then serve as a basis for supplementary agreements regarding specific social programs, including those supporting the YaNAO Indigenous population. The funds are used to pay for gifted students' education, summer camps, and equipment for villages, such as satellite phones, snowmobiles, power generators, and fuel. Some funding is distributed to lower levels of government. Municipal representatives may request funding for specific purposes from the YaNAO authorities. Depending on the number of applications and their justification, funds are then redistributed across the YaNAO. A YaNAO government official describes the process: "*The application arrives to the department, and funds are allocated depending on the fiscal situation. If there is enough money, everyone receives some funding. If not, a municipality has to prove it needs this money. Applications are open once a year. . . . They budget for petroleum products, satellite phones, mini power sources, tarp, and first-aid kits.*" *(Representative of the Department of Indigenous Affairs, Salekhard, Yamal, 2017).*

Oil and gas companies also may conclude agreements on socio-economic partnerships with local authorities (lower-level district authorities and municipalities) in relation to specific sites of extraction. A local administrator recounts, "*When oil and gas companies arrive, they come to us. We confuse them [with our demands]. You come here, occupy our pastures, you have to compensate somehow. It is outside the scope of Russian law.*" *(Representative of the local administration-2, Yamal, Yamal district, 2017).* As in the case of YaNAO agreements, the exact form and amount of benefits shared result from a negotiation between the company and government representatives. Another local government official explains, "*First, they make a [verbal] agreement, and then, based on these verbal [agreements], they make an arrangement. First, they discuss what is feasible. If the other side says that it is, then they agree—it's a deal.*" *(Representative of the local administration-3, Yamal, Yamal district, 2017).* Most of the lower-level agreements are tripartite—with an Indigenous association as the third partner, alongside company representatives and government officials. In Yamalsky district, the agreements were concluded between the district authorities, a company and the association Yamal, while in Tazovsky district the third partner is the NGO Yamal for Posterity. According to these agreements, funds are spent on needs, such as constructing infrastructure, conducting secondary and post-secondary education, organizing holiday celebrations, and purchasing equipment. These lower-level agreements are most likely to occur on the territories where a company is actively operating, resulting in social and economic asymmetries between districts. Yamalsky and Tazovsky districts are considered the most prosperous in YaNAO, as they possess the main oil and gas deposits. Extractive activity on their territory allows them to receive additional financial support

through benefit sharing. Meanwhile, other districts, deprived of direct connection with oil companies, are relatively disadvantaged in seeking benefits. Municipalities then find their requests for support to companies rebuffed: "*Where there are no oil companies, you tell them [the company], we need money, for example, to preserve the Khanty bear festival. And they say, we do not work there, we're not interested.*" *(Representative of NGO "Yamal", Yamal district, Yamal, 2017).*

In addition to negotiated socio-economic partnerships, oil and gas companies also pay financial compensation to local citizens for agricultural lands seized for extraction. The level of compensation is based on an official procedure that takes into account land valuation. However, only some former state-owned reindeer herding enterprises that were privatized in the post-Soviet period have official leases and are entitled to compensation in Yamal. In contrast, private reindeer herders have no land officially assigned to them, and thus, are not eligible for compensation for grazing land lost to company activity. As a result, some herders are compensated, and others are not; in either case, the levels of compensation are low. A private reindeer herder states, "*[State-sanctioned] land users receive compensation—reindeer herding communities. They're so lucky. If construction work begins [on their territory], they are paid for the loss of agricultural lands. It's calculated by the [official] method. The whole land is fully vested in them. But the land price has now become minimal.*" *(Representative of the reindeer-herding enterprise-1, Yamal district, Yamal, 2017).*

Finally, companies may provide low levels of financial aid to villages informally, for specific purposes, such as the purchase of goods, transportation, and holiday festivals. This support is provided to the local residents directly or channeled through a social organization. The amount of—aid is usually between several thousand rubles and tens of thousands of rubles (roughly between $50 and $1000). Generally, representatives of a school, library, or cultural institution will ask a company for one-time assistance for a specific event or program. These requests can be quite small, such as gifts for veterans or for children to mark a special occasion.

Thus, oil and gas companies are actively involved in the economic development of YaNAO through benefit sharing. Government officials play a key role in the distribution of benefits from "oil money," and argue in favor of this centralized approach given that the government has a better understanding of the situation across the region than other actors. The YaNAO government is able to accumulate funds coming from various companies and distribute them according to the needs of districts and municipalities, allocating money for infrastructure projects, for example. They also can mitigate economic inequality between those districts with oil deposits and those districts without oil. Some experts see these socio-economic agreements as a better approach than transferring funds directly to Indigenous community members: "*Where will this company money go [if given directly to reindeer herders]? Trinkets? The same trinkets that purchased Manhattan? The [YaNAO] money is spent on roads and houses—not on a snowmobile for specific reindeer herders. Therefore, I believe this is a good policy. When they ask for a new hospital, it will be easier to build the hospital right away.*" *(Expert, Arctic center, Salekhard, 2017).* An NGO representative largely agreed, "*We know better who needs what. Otherwise, they [the company] will finance the Solnyshko community near Sabetta instead of the Romashka community in Shuryshkarsky district. Whereas we know better than Romashka is more in need now than Solnyshko.*" *(Representative of the NGO "Yamal for Prosperity", Yamal, Salekhard, 2017).* Finally, other experts argue against direct agreements between the oil companies and the locals by pointing out that centralized agreements are more likely to avoid the dependency of reindeer herders on resource transfers from companies. A member of the Coordinating Council, created by Novatek for public consultations, who is also a local administrator stated: "*If we pay reindeer herders directly now, we will bring about dependency, which is already thriving here . . . . Our reindeer herders have become kind of lazy.*" *(Representative of the coordinating Council, representative of the local administration, Yamal district, Yamal, 2017).*

However, many local Indigenous community members point out that much of the funding for social infrastructure and programs serve to improve the lives of village dwellers, while Indigenous residents pursuing a traditional nomadic lifestyle receive the least benefit from the projects. Nomadic herders make little use of new village infrastructure, with the possible exception of sending their

children to boarding schools. At the same time, industrial projects impose great costs on traditional reindeer herders, as they include the seizure of reindeer pastures and environmental degradation. A local resident from a village remarks, "*The oil industry is probably better for villagers, because they [the companies] are building their infrastructure. We have new housing, a school, a gym, and they are building a new dormitory, too. It is probably worse for the tundra dwellers. Their lands are shrinking.*" *(Local resident-1, Yamal, Yamal district, 2017).* A traditional herder states, "*A lot of our land was seized for oil development. No compensation—only the company's agreement with the region, and also some sub-agreements with the districts and municipalities. They do not directly negotiate with reindeer herders, only through the authorities. They rebuild villages, [and] construct schools, kindergartens, gyms.*" *(Head of the reindeer herding community, Yamal, Yamal district, 2017).* Ultimately, traditional nomadic reindeer herders do not greatly benefit from these arrangements.

4.3. Forums of Negotiation between Oil Companies and Indigenous Communities

In Yamal, there are several forums to facilitate communication between the authorities, companies, and Indigenous people. First, public hearings and consultations with local residents are required by Russian law before the implementation of an industrial project. At a public hearing, local residents can communicate their concerns and make suggestions to companies. In some cases, these events allow the locals to mitigate the damaging effects of the industrial activities or solve certain problems. A local administrator gives an example, stating, "*If the municipality residents are not very happy with the project, they can find a way to address these grievances through bargaining. They say 'include this and that in the budget, or build us a hospital . . . or fly our children to school from the tundra.' And after that, they [the municipality and company] conclude an agreement.*" *(Representative of the local administration-3, Yamal, Yamal district, 2017).* A government official gave another example from 2010: "*There was an occasion a couple of years ago, when a subsidiary of Gazprom or Yamal LNG wanted to build an artificial island in the Ob Bay. The people of three districts opposed it, and there was a petition to the governor. They [company and government representatives] decided it was no good. They didn't make the artificial island.*" *(Representative of the Department of Indigenous Affairs, Salekhard, Yamal, 2017).* However, public hearings are not always an effective form of interaction. Companies are not obliged to follow up on the suggestions of those attending the hearing. In addition, local citizens note that public hearings are often carried out in a formal way that does not involve real discussion. For example, some public hearings take place far away from the territory affected by the industrial project. A reindeer herder notes, "*Reindeer herders have no time to attend public hearings. They are in the tundra all the time. That's why they are formal, those hearings. They get a handful of people together, check it off the list, and that's it.*" *(Head of the reindeer herding community, Yamal, Yamal district, 2017).* Informal meetings with local residents, organized by the municipality, are another common form of company-community consultation in Yamal. The meetings are timed to occur before important events and major holidays to maximize participation. For example, a meeting of government and company representatives with local residents precedes the Reindeer Herder Festival each year. In these meetings, local residents may voice their concerns or suggestions.

In addition to officially organized hearings and meetings, every oil and gas company engages local citizens with its own problem-solving and communication strategies. Gazprom and Rosneft, for example, prefer to interact with locals through government agencies and procedures established by Russian law, such as public hearings. Novatek, with its financial commitments to foreign investors, is bound to follow international partners' requirements and international standards for community consultation. *(Representative of the coordinating Council, Yamal district, Yamal, 2017).* In the villages near Novatek's operations, a Coordination Council was formed that includes government and company representatives, as well as local residents. The main goal of the Council is to facilitate the company's interactions with stakeholders. A local administrator describes the process: "*There is the Coordination Council that meets twice a year to address emerging issues. It includes a company representative, a head, a representative of the Yamalsky district administration. Sometimes we meet more often, if it's necessary to act quickly.*" (*Interview with the head of local administration, Yamal district, Yamal, 2017).* A member of the

council states, "*The Coordination Council is what solves pressing problems, or any issues that emerge . . . For instance, if you need to conduct some survey or provide assistance in delivering groceries to the trading post. If the Coordination Council decides that help is needed . . . it contacts the CEO.*" (*Representative of the coordinating Council, Yamal district, Yamal, 2017*). In addition, the company employs liaisons who regularly collect suggestions and complaints from Indigenous people about the company's activities. There are also community liaison offices open in the villages affected by the company's operations. However, this level of community consultation is not carried out by other oil and gas companies active in the region, further suggesting that standards promulgated by financing institutions play an important role. For example, the consulting firm Environ was hired to complete an impact assessment of the Yamal LNG project, which was funded in part by Total, the Japan Bank for International Cooperation and the China National Petroleum Corporation [72]. A district official states: "*That's why they [international actors] invest, they offer money at a small interest rate, but they closely monitor all of that. This is why the project was simply necessary. And the investors come here all the time and check the progress, like, they came to our village in April, checking everything, looking around, asking questions.*" *(Representative of the local administration-1, Yamal, 2017).* International standards appear to have encouraged the company to introduce new practices of interaction.

5. Discussion: Nationalization, Globalization and the Role of the State

Despite the globalization of oil production in Russia, the state continues to play the most significant role in governing the oil and gas sector, particularly in regard to shaping the relationship between oil and gas companies and Indigenous people. We find evidence of the state's continued robust role in several categories: Cultivating channels for interactions between different groups of actors in which government officials play a significant role; policing and suppressing other actors who have a desire to participate in the governance of oil; and playing a leading role in arranging benefit sharing. We argue that the dominance of the state indicates that rather than pursuing a "social license to operate," as expected under more globalized governance, instead we see the continuation of a formal and informal "state license to operate".

The state has continued to assert its governance in part because the oil and gas industry is a priority for the Russian government. Despite the globalization of oil production networks, nation-states for whom oil is a strategic resource are making a considerable effort to retain their regulatory authority and resist the global governance of oil, given that it is a source of economic growth and global political power. Oil and gas revenues accounted for more than 45% of Russia's federal budget in 2015 [73], and constituted about 15% of GDP [74]. Europeans rely on Russian imports for 30% of imported gas and 35% of crude oil [75]. Gas is particularly important domestically, as it is used for roughly 50% of both residential heating and national electricity production [75]. The Russian government has attempted to convert natural resource abundance into political power on the world stage, and has used the supply of oil and gas to pressure post-Soviet neighboring states. Oil and gas also have served as a source of national pride. In 2005, President Putin declared that Russia is a superpower and world leader in the energy sector [76]. Energy security in Russian ideology is part and parcel of national security. Therefore, since Putin came into power in 2000, he initiated reforms that reinforce state control over oil production, including social issues related to oil production [77,78]. Revenue from the oil and gas sector fueled rapid economic growth from 1999 to 2008, and has been a means to improve living standards and invest in public infrastructure and social programs. Arguably, oil and gas wealth also have allowed the state greater autonomy from taxing citizens, and therefore, greater independence of action more generally.

Nevertheless, under global market pressures, Russian oil and gas companies have selectively adopted global standards, such as the Global Compact, Global Reporting Initiative (GRI), and ISO certification. Financial ties to equity partners and international financial institutions, as in the Novatek case, appear to foster some implementation of global standards, such as those that protect Indigenous peoples' rights. Novatek has made a greater effort than other companies to provide forums of

negotiations for Indigenous communities, such as the Coordination Council, which is established to allow some citizen participation in governance, and which may serve to limit violations of Indigenous peoples' rights. Overall, however, governance of the oil and gas sector in Russia generally does not feature strong adherence to global standards, in part because of the state's interest in remaining the key decision maker. This is in contrast to the more robust role of global governance in some of Russia's other natural resource sectors, such as forestry [33]. The Russian government's reliance on oil for economic and political power acts as a kind of barrier to blunt global influences. Research conducted in Yamal demonstrates how Russian state officials remain closely involved in interactions among oil and gas companies, Indigenous NGOs, and local communities, including in shaping benefit sharing arrangements. The state allows globalization of oil production networks and supply changes, encourages foreign investment and partnerships, and the transfer of advanced technologies. However, the day to day governance of oil and gas resources, including its social and environmental aspects, remains under strict state legislation and control as the state owns the land, leases it to companies, and regulates other land users.

5.1. State Controlled Civic Activity and Forums of Negotiation

Global governance rules and standards often are designed to strengthen the role of NGOs and Indigenous associations within a governance generating network. However, in the case of Yamal, Indigenous associations work closely with the regional government and industry. These NGOs emerged first as social movement organizations in the mid-1980s to late 1990s with the goal of protecting Indigenous peoples' rights. However, although these groups remain involved in community affairs and offer grants for community development, Indigenous associations now often appear to serve to legitimize state policies and decisions. Neither of the associations Yamal nor Yamal to its Descendants is involved in transnational Indigenous networks or other transnational NGO networks, and they have not participated in the United Nations Indigenous peoples' committees or those of other global institutions. Instead, their primary relationship is with the regional and local authorities in Yamal. Both groups organize local forums between government officials and Indigenous reindeer herders, and participate in the negotiation of socio-economic agreements and state funding that is distributed across the region. In several notable cases, these Indigenous associations have supported the government's position on oil construction projects, despite local concerns and grassroots efforts to negotiate with company representatives. For example, in the 2019 conflict between Gazprom and Indigenous reindeer herders around pipeline construction, both Indigenous associations supported the agenda of oil companies and the state and not the local Indigenous community. Indeed, reindeer herders' resistance to pipeline construction and their appeal to the UN led to repression [65–67]. Without the support of regional NGOs or links to a transnational NGOs network, the resistance movement demobilized.

In a governance generating network, forums of negotiations between oil companies and civil society representatives may be organized across scales and involve both global and local actors. Indigenous associations in Yamal do not participate in transnational forums, such as the Arctic Council or UN working groups, instead of relying on public hearings organized by municipal authorities. However, most public hearings appear to be carried out as a formality and do not represent a means of reconciling the interests of oil companies and Indigenous people. The Coordination Council, organized by Novatek and stimulated by the guidelines of foreign investment banks, is an exception and includes participation by Indigenous people and company representatives engaged in public relations.

5.2. State Controlled Benefit Sharing Arrangements

Efforts to strengthen the global rules and standards that govern extraction have highlighted the importance of gaining a "social license to operate" from local actors, including affected communities, Indigenous peoples, and NGOs. In Yamal, however, we see the enduring importance of a "state license to operate." Decisions about oil exploration, extraction, and transportation in Yamal—regardless of their

impact on local residents—are made with the permission of or through negotiations with state actors. In practice, an SLO is granted by regional authorities, not local stakeholders. A similar default to state preferences is present in benefit sharing as well. Benefit sharing between industries and communities at sites of extraction has emerged as an important guideline in the global governance of natural resources. In Yamal, benefit sharing is taking place in several forms, including socio-economic agreements with the regional government and municipalities [79], and the regional and local authorities are the key negotiators about levels of funding and decision makers about how that funding should be allocated. Given that the vast majority of tax revenue from the oil and gas industries flows into the federal budget, socio-economic agreements provide a means for regional and local authorities to retain funding locally to fill gaps in regional budgets and to support public infrastructure. The financial transfers generally benefit village-dwellers who make use of public infrastructure, rather than reindeer herders engaged in traditional practices. Reindeer herding enterprises that lease agricultural lands designated for reindeer herding are able to use a federally-developed methodology to demand compensation for land lost to or damaged by industrial development, but reindeer herders' enterprises that do not have leases do not have the same opportunity. Since regional legislation on "territories of traditional natural resource use" has not been utilized to this point, a large number of private reindeer herders are using traditional lands without legal confirmation of their rights. To this point, government agencies have not assisted herders in designating TTNUs, which would make herders eligible for compensation.

6. Conclusions

As the governance of extractive industries has increasingly globalized, with new rules and standards for the protection of Indigenous rights and the environment, a new avenue for the voices of local stakeholders has been created. The emergence of governance generating networks around particular industries anticipates that forums of negotiation will link global rule-making bodies with sites of implementation. In this process, the state would become one of many actors claiming a role in governance. However, these governance networks may not develop, due to conditions at the national or regional level. As a result, Indigenous communities may remain vulnerable to rights violations and may not benefit from global governance guidelines.

Yamal is an important case for exploring the power and limitations of global governance in the extractive sector. In Yamal, we see government agencies strongly asserting the right of the state to govern interactions between oil and gas companies and Indigenous peoples. Based on this case, resistance to global governance appears more likely to occur under the following conditions: (1) In a state that has relied on extractive resources for economic and political power, and in a region of the country that is an important oil and gas producing area; (2) under an authoritarian regime that has exerted substantial influence over civil society and social movements, including Indigenous NGOs and activism; (3) when domestic laws to protect Indigenous rights are only weakly developed or not enforced; and (4) where many of the oil and gas companies are wholly or partially state-owned.

In Yamal, global flows of financing for the oil and gas industry and global supply chains are growing rapidly. Russian oil and gas companies have sought relationships with international investors and equity partners and have adopted some global standards, such as ISO 14000 and ISO 26000, and participate in the Global Reporting Initiative (GRI) in order to increase their competitiveness in international markets. Of the companies operating in Yamal, Novatek is both the most exposed to global financing and the most likely to conform to global standards of community consultation, raising intriguing questions about the factors that shape the behavior of private actors, in the absence of state requirements. At the same time, transnational networks bringing together global and local actors remain underdeveloped. The major Indigenous associations in Yamal are disconnected from their international counterparts. Government agencies have been able to maintain their authority by either co-opting or discouraging actors who would participate in the global governance networks at the sites of implementation and by inserting themselves as influential actors in globally-endorsed processes, such as benefit sharing. The result is that Indigenous communities are limited in their ability to take

advantage of global conventions and standards that are intended to protect their rights— and that Indigenous people engaged in traditional livelihoods are the least likely to gain from benefit sharing. Overall, governance generating networks in the region are under-developed.

The Yamal case indicates that states may be able to adapt to economic globalization without a corresponding erosion in their governance authority. Through a combination of national rules and informal incentives for companies, state control of civil society, and adaptation to some aspects of global standards, the state may be able to selectively filter certain aspects of global governance to limit the significance of a "social license to operate" and prioritize the "state license."

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Appendix A

Table A1. Interviews.

Date	Informant	Location
11.07.2017	Expert of the Arctic Center	Salekhard
12.07.2017	Representative of the NGO "Yamal for descendants"—1	Salekhard
12.07.2017	Representative of the NGO "Yamal for descendants"—2	Salekhard
15.07.2017	Representative of the Department of Indigenous Affairs	Salekhard
16.07.2017	Head of the reindeer herding community	Yamal district
18.07.2017	Local resident—1	Yamal district
18.07.2017	Local resident—2	Yamal district
19.07.2017	Representative of the reindeer-herding enterprise—1	Yamal district
19.07.2017	Representative of the reindeer-herding enterprise—2	Yamal district
20.07.2017	Representative of the local administration—1	Yamal district
20.07.2017	Staff member of the House of Culture	Yamal district
20.07.2017	Representative of the coordinating Council	Yamal district
21.07.2017	Representative of NGO "Yamal"	Yamal district
21.07.2017	Representative of the reindeer-herding enterprise—3	Yamal district
22.07.2017	Fisher	Yamal district
22.07.2017	Representative of the local administration—2	Yamal district
23.07.2017	Representative of the local administration—3	Yamal district
23.07.2017	Staff member of school	Yamal district
24.07.2017	Local resident—3	Yamal district
24.07.2017	Local resident—4	Yamal district
24.07.2017	Reindeer herder—1	Yamal district
25.07.2017	Reindeer herder—2	Yamal district
25.07.2017	Reindeer herder—3	Yamal district

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Industrial Projects and Benefit-Sharing Arrangements in the Russian North. Is Contracting Possible?

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Abstract: The extractive industries and local communities in the Russian Arctic make socio-economic agreements to support social and environmental initiatives in the territories of their operations. The extractive industries address social responsibilities through grant projects and social investments. In the framework of social investments, major industrial corporations are supposed to distribute benefits obtained from resource exploitation to stakeholders who are affected by industrial operations. This article presents different forms of benefit-sharing arrangements and how they work in practice in the context of contracting for natural resources (oil, gas, metals and minerals) in Russia. The analysis outlines specific types of contracts and how they are implemented. While benefit-sharing arrangements can provide some benefits for local and regional stakeholders, it is controversial whether these arrangements can improve the situation as far as even-handed sharing of society's environmental risks, benefits, and impacts is concerned. The article discusses how voluntary social partnership agreements in line with corporate citizenship and stakeholder management can alleviate problems between local people and industries in the Russian Arctic.

Keywords: Benefit-sharing arrangements; extractive projects; natural resources; corporate citizenship; stakeholder management

1. Introduction

The concept of benefit-sharing has been a topical issue in international debates for the past two decades [1]. On the global scale, the Corporate Social Responsibility (CSR) of enterprises has been evolving for decades, and demands for increased local responsibility and benefit-sharing with extractive industries have grown [2,3]. Usually, the industrial enterprises provide benefits to the local communities, following the guidelines of their CSR policies. Benefit-sharing is a widespread CSR tool which is understood and applied differently in the various branches of international (mainly soft) law. In the legal field, there is no general definition of this concept [1,3].

When considering the concept of benefit-sharing, it is crucial to define how benefits can be understood and precisely how benefits function in the context of the discourse on oil, gas and mining projects. Most of the mineral resources in Russia are in the Arctic. The region is rich in various unique natural resources which provide many opportunities for further exploration [4]. The communities, which live in harsh conditions, live and work in close vicinity to the industrial projects and face negative impacts from operations. The companies make socio-economic agreements with public and private stakeholders, stipulating the benefits a company agrees to provide in exchange for community support of projects and a favourable operating environment. The benefits may be expressed in both monetary and non-monetary form [5].

The business dictionary states that benefits are a "desirable and measurable outcome or result from an action, investment, project, resource, or technology" [6]. This short definition contains several applicable terms with relevance to the current discourse [7]. Actions, investments, projects, resources and technology are all crucial elements in the industrial projects in the Russian North, and several

of these key notions also play an essential role in terms of CSR practices. It is relevant to discuss the incentives of extractive industries that operate in the Russian North. As with any other industrial venture, oil, gas and mining companies seek a return on investment and consequently revenues that outweigh the costs. When the profit margins are so narrow that they put a company's survival at risk, companies will be pressured to cut corners and pursue irresponsible courses of development [8,9]. Profit margins allow for survival in the markets and important business actions such as investments in infrastructure, expansion, modernization, social benefits, environmental protection, and more. The oil/gas and mining sectors are the backbone of the Russian economy, an economy that struggles to implement diversity, despite continuously expressing the political will to promote other sectors as well [10,11]. With the process of transition to a market economy, the legislation (formal rules) has been adjusted to the new realities, and informal rules (beliefs, values, habits) need time to adopt [12].

The oil industry in large parts of Russia is successful and creates important wealth for the Russian economy. Oil remains a crucial source of energy, and it is utilized in manufacturing as well. Particularly in remote areas without power plants, oil is often the easiest solution to run machines and facilities for energy and heating. Engineers have invented renewable energy solutions that can replace fossil fuels; however, at this date the achievements have not been sufficient to significantly decrease the importance of oil production in the socio-economic context of Russia [13].

Keeping in mind various forms of benefits that the industry creates for itself and the national economy, the question is: What benefit does the local society receive on the sites of extraction? To answer this, it is necessary to understand that the local society in the Russian North is not homogenous. The people have different backgrounds, different opinions, different objectives, and even different cultural heritage [14]. Thus, opinions concerning the extractive industry and, therefore, the perceived benefits are diverse.

The extractive industries in Russia point to their contribution to infrastructure development, health care provision, pension support, and efforts to improve education and recreational activities. These corporate actions of providing social benefits as a form of charity have a long tradition in the Russian North, going back to the Soviet era [15,16]. Another benefit to certain members of local societies may be employment in cases where a company offers positions and training to get the necessary qualification to work in the industry. How much benefit everyone receives depends on the specific needs that individuals have with respect to the charity provisions [17].

The ecological challenges and performances of the extractive industries also play a significant role. Substantial amounts of oil are spilled with disturbing regularity but are seldom reported [18]. Oil spills, greenhouse gas emissions and other forms of pollution impact the health, livelihoods and well-being of the members of the local society. The question is whether it is possible and desired by local communities to receive compensation from the industry in the form of economic benefits generated as a result of resource depletion. Local communities increasingly ask for benefits to offset negative impacts caused by new extraction projects. These requests often take the form of negotiated agreements. However, agreements are the subject of some debate, especially regarding their effectiveness and fairness. There is no consensus regarding the fair distribution of benefits, functions and responsibilities of the parties to the agreements [6].

The utilization of natural resources is directly connected to the issue of property, which reflects a threefold nature: (a) resources as a national wealth, (b) resources as commodities, and (c) resources as components of the natural environment [19]. The Russian Constitution stipulates that natural resources fall within the joint jurisdiction of the Federation and the regions (Article 72) and should be utilized and protected as the basis of the life of the people living in the areas from which these resources come (Article 9) [20]. With the transition to a market economy, resources have come to be treated as commodities having economic value and, as such, a target of state regulation. The principal law governing the use of minerals is the Federal Act on Subsoil [21]. According to this act, the Russian Federation is the sole owner of the subsoil, and its ownership right to the subsoil is inalienable. The state grants licenses for the exploration and exploitation of deposits [22]. However, within the state form of

property of the subsoil, the extracted natural resources, according to the details of the license, may be state, municipal, private or other. Under Russian legislation an owner is entitled to the rights of possession, the use and the disposal of his or her property [23]. Hence, sharing is the transition of natural resources as tangible assets from state hands into the hands of the extractive companies mainly through public arrangements (licenses, agreements, tax relations) and their distribution to the civil society through private-social arrangements.

Land ownership does not entail ownership of the subsoil, and this leads to disputes, especially when extraction industry projects (subsoil users) conflict with the interests of individuals or other entities (usually leasers or other users of land plots) [24]. In the Russian Arctic conflicts concerning land rights often arise between industrial companies and reindeer herders, who continue to practice reindeer herding as a traditional way of life. The right of free prior and informed consent (FPIC) arises from property rights; it is not a free-standing right. FPIC is connected with the traditional lands of indigenous peoples, even if they are not the official owners of the land [25]. In practice, FPIC is not commonly applied, and CSR is more often implemented through benefit-sharing agreements which include all provisions that are important for the business and for the local communities.

This article argues that the implementation and enforcement of benefit-sharing arrangements need to be improved to enable a positive impact on individuals and communities. The article provides an overview of the following concepts: Corporate Citizenship and Stakeholder Management under the umbrella of Benefit-Sharing. The concept of Stakeholder Management is relevant in the Russian North, because there are many stakeholder groups (both indigenous and non-indigenous), and interrelations between industries and stakeholders are continuously changing. The concept of Corporate Citizenship is an appropriate concept in this discourse to discuss corporate behaviour towards stakeholders, particularly communities in the Russian North.

2. Materials and Methods

In this article, the aim is not only to study theoretical aspects of benefit-sharing, but also to examine how diverse benefit-sharing concepts may work in the actual context of the Russian Arctic. The analysis of benefit-sharing agreements provides current examples of how voluntary approaches are being implemented and how the interaction between different stakeholders function in Russian localities. The content analysis distinguishes normative approaches of benefit-sharing and links them to the real-life situation in the Russian Arctic. A major objective is to identify benefit-sharing practices and agreements in the Northern areas of Russia and determine to what extent these practices differ from the theoretical normative tools and policies provided by academia and relevant stakeholder organizations.

The analysis of this article focuses on research materials and corporate publications:

- Regional, national and international legislation describing the rights and obligations of local communities and extractive industry projects,
- International business management concepts: Benefit-Sharing, Corporate Citizenship and Stakeholder Management,
- Socio-economic agreements at the regional and municipal levels,
- Sustainability reports and web content of Russian extractive industries companies.
- In addition to legislation, company codes of conduct, and relevant literature were examined.

Socio-economic agreements are one of the core elements of the study (Table 1). In many cases a special request was needed to get access to the agreements, because they are not publicly available. Reaching out to local authorities may allow access to the documents by interested parties. As part of the present research, seven socio-economic agreements on different levels were analysed [26]. Four were found in a publicly available source, and three were obtained by request to the companies. These documents are of high relevance, because they reflect the commitments of the industry and can address the concerns and expectations of local society.

Secondary literature was utilized to embed this analysis in the findings of previous studies and, in general, in the framework of Russian legislation.

Table 1. Overview of social-economic agreements in the Russian North.

	Validity of Agreement	Parties to the Agreement	Main General Provisions	Environmental Provisions
1	One year with possible prolongation	Oil and Gas Company/Indigenous people	Partnership and cooperation, preserving traditional ways of life, culture, customs and language of indigenous people, educational opportunities for local youth	Consultations with indigenous people before projects start, constant stakeholder dialogue Company reports on violations of environmental legislation
2	No validity information	Mining company/Municipality	Partnership aiming at the effective work of company, participation of municipality in the management of the company, social and investment programs, labour and educational opportunities for local people	Prevention or liquidation of environmental pollution, direct compensation to local people for polluted areas
3	Five years	Oil and Gas Company/Indigenous people	Sustainable economic and social-cultural development of indigenous people's right to use the resources; recognition of oil and gas impact on traditional ways of life, FPIC, need for consultations	Prevention or mitigation of any potential adverse impacts
4	One year with possible prolongation	Oil and Gas Company/Indigenous people	Social-economic development of indigenous people via social-economic programs	No detailed information
5	Three years	Mining Company/Regional government	Realization of industrial, financial and social programs based on the principles of social responsibility, transparency of information	Environmental safety
6	No validity information	Mining Company/Indigenous People/Municipality	Financial aid within industrial exploration of natural resources, compensation for negative impacts, preserving the traditional way of life, creation of sustainable development of municipality, support for local businesses, purchase of local production, labour opportunities for local people, legal and medical aid, research and conferences	Company reports on violations of environmental legislation, Company refrains from any actions which can cause economic or environmental damage, environmental security
7	Five years	Oil and Gas Company/Regional government	Financial aid aimed at the infrastructure development of the region	No detailed information

2.1. Corporate Citizenship

In discussing the benefit-sharing of extractive industries in the Russian Arctic, the concept of Corporate Citizenship is relevant. Being a good corporate citizen implies assuming the social responsibilities for all internal and external processes linked to the business venture. Corporate Citizenship "involves the social responsibility of businesses, and the extent to which they meet legal, ethical and economic responsibilities, as established by shareholders" [27]. This definition

strengthens the approach that Corporate Citizenship is a sub-field of CSR. Moreover, the term "Corporate Citizenship" can be formulated as a bargain between business and society/state in which business is supposed to have a responsible relation with communities' needs and counts on special preferences [28]. Even though Corporate Citizenship and CSR share many conceptual frameworks, substantial differences are perceivable. CSR embraces a holistic view and covers all types of corporate responsibilities: economic, legal, ethical and philanthropic [29]. Corporate Citizenship is more concentrated on the social (societal) aspects impacted by business operations, and implementation can be done in the form of a management concept such as, for example, implementing a marketing management system or environmental management system. In order to be a good corporate citizen, it is essential to create awareness throughout the entire workforce what this, in fact, means and how this is being applied in everyday working life. Initial policy formulations such as "We want to be a good neighbour to the nearby communities" or "Let´s treat the locals with the same respect with which we treat each other within our company" are helpful but not enough. A management mix is required that foresees practical corporate citizenship implementation in a structured and scheduled way. Crucial elements of a corporate citizenship management mix are discussed below and linked to the case of the Russian Arctic industries [30]. In contemporary Russia, the process of the concept's incorporation is explained by historical aspects [31]. The transition from a state-controlled economy to a market-based economy has led to reforms and the adaptation of the companies to the new realities of global trade. The extractive industries in the Russian North apply some tools of Corporate Citizenship, aiming at fulfilling the social objectives in local societies.

Corporate Giving is a tool which provides philanthropic donations, payments or similar financing for local social services. In the Russian Arctic, the allocation of corporate capital for local infrastructure, the health care system, education, housing, pensions and other services is often fundamental to maintain the survival of Arctic communities [32]. The linkage to benefit-sharing is especially evident here, since, in the framework of corporate giving, all corporate capital provided is allocated voluntarily. This does not include capital that has been raised due to mandatory compensation and court decisions or facilitated by political actors. In socio-economic agreements, capital provisions can originate from the Corporate Giving approach, as well as from other elements of the Corporate Citizenship mix.

Similar to Corporate Giving is Corporate Sponsoring, but there is an essential difference. While Corporate Giving follows predominantly the philanthropic cause of capital allocation, sponsoring aims at positive effects for the company providing the capital. The Russian Arctic industries are famous for sponsoring local sports teams associated with sports associations and junior sports affiliated with the school system. Notable sports that receive sponsorship in the Russian North include ice hockey, football, volleyball, basketball and others. Successful sport teams receive local media attention, and firm logos of the sponsors are widely used for marketing purposes. Municipal and regional governments, plugging holes in their budgets, impose an extra tax on companies in the form of social investments. Researchers call those relations administrative enforcement [33] or agreements [34]. In Russia, sponsoring is not implemented sufficiently; companies are continuously spending their income on sponsoring, but the state strives to control and channel it into their own interests.

Cause-Related-Marketing embraces elements of corporate giving and corporate sponsoring. A good example in the Russian Arctic is the continuous cases when oil projects move from exploration to exploitation. The benefits for the regions—employment, infrastructure, donations, sponsoring and other benefits—are communicated to the local and regional communities to improve the image of the company at large and to generate a positive attitude towards the exploitation project in the area among the residents [35].

Corporate volunteering is a form of benefit-sharing developed by philanthropists in the early twentieth century. The idea is to send workers out of the factories to provide social services to the community. In Russia´s corporations it is also on the agenda in some regions [36]. Unlike the volunteering approach, with the corporate foundations approach, capital is directly allocated to specific institutions, projects or facilities. The capital-providing company sets up a foundation which

works, to a large extent, independently of the founding company. Corporate foundations tend to use start-up capital from a company, seeking, in later phases, funding from other sources as well. Some of the large-scale extractive industries have established foundations; however, the corporate-giving approach and sponsoring are much more dominant [35]. Moreover, in regions, there is a lack of socially-orientated non-governmental organizations that can fulfil the functions of corporate sponsored providers, which is why the companies strive to stimulate the creation of such organizations from the ground up, and that takes time and financial resources.

Decision makers in Russian Arctic industries are often closely tied to regional and national authorities, and to improve their reputation, the companies should emphasise local needs, wishes, and expectations among political decision makers in the regions and in Moscow. Social lobbying is a form of corporate citizenship that has the potential to improve relations between companies, residents and authorities [35]. It could be used in a sort of deal-making wherein the local communities support projects and do not hinder them with protests, complaints or campaigns, and the company "lobbyists" promote initiatives that are important for the regional community, such as the revision of specific laws, tax deductions or larger shares of public capital allocations.

Venture philanthropy is similar to social lobbying, but instead of attending to local needs within a political framework, the idea is that corporate actors use their connections in the global investment sector to support the local communities' access to social capital investments. In the Russian Arctic, this concept is theoretical in nature because practical application of it rarely happens. However, Russian corporations with ties to sparsely populated areas in the far North may consider this option in the future, as these local populations certainly have obstacles to getting access to international social-risk capital. Bilateral agreement between local communities and industry is at the heart of the public-private partnership concept as well. These partnerships embrace the idea that corporations and non-profit public organizations bundle their resources and try to achieve a common goal. Either the public organization or the company can initiate the contact with the other party, and usually the partnership leads to a specific project to improve societal well-being. Even though the Russian Arctic has seen a few of these partnerships, there is certainly room for improvement in terms of resources allocated and the desire to achieve common goals.

2.2. Stakeholder Management/Stakeholder Value:

Another concept from the field of management studies with relevance to benefit-sharing is the stakeholder management approach as coined by Ed Freeman in 1984 [37]. His work can be considered as a paradigm shift in business management as it substantially questions the idea of emphasising shareholder values, predominantly widening the perspective to include stakeholders' needs and expectations. Shareholders' values have a narrow focus on investors and business partners but neglect crucial actors such as customers, consumers, nearby communities, environmental activists, trade unions and many others. Stakeholder management has a connection to CSR as well [29,38]. Proponents of the shareholder value concept, such as Morgan Friedman (Chicago School of Economics), argue that the most important, if not only, social responsibility is profit generation in order to cover the costs in terms of bills, staff and shareholder dividends, and consequently make it possible to survive in the market [39]. Freeman was the one who eventually challenged this way of thinking and developed the idea that companies that take stakeholder needs into account have much better chances to be successful in the long-term perspective, for various reasons [29,37].

Stakeholder management involves various components that must be organized in a chronological manner. The first step is that the corporation needs to identify the stakeholders. The challenge here is to include all stakeholder groups and not being satisfied too quickly with a list of only a few [38]. In the age of blogs, vlogs, social media and other internet channels, it is easier than ever before for non-recognized stakeholders to raise their voice and explain their opinions to a wider audience [40]. Once all stakeholders have been identified, the analysis of stakeholder expectations and possible ways of cooperation are on the corporate agenda. This analysis implies a comprehensive definition of all

benefits the business venture may allow and how stakeholders could or should benefit from this. Benefits can be categorized into infrastructure development, community well-being and benefits that the company should provide when it is fair and just to do so. Examples of the latter are compensations if living conditions are compromised or if a company disturbs the livelihoods of people who were in the area before the industry arrived. Stakeholder management is not only the appeal to awaken ethical behaviour in corporate decision makers or promote corporate philanthropy [38]. Ignoring stakeholders' voices carries many risks for a corporation. Conflicts with environmental activists and local communities tend to be very costly and sometimes even lead to corporate insolvency [40]. Demonstrations at factories and strikes by the workforces that bring production facilities to a standstill are connected, in most cases, with enormous losses. Moreover, conflicts can ruin the corporate image, which needs to be solid to attract customers, investors, supply chain partners and the most talented employees [40]. From this follows the crucial element of stakeholder dialogue, which is a continual element in the chronology of stakeholder management [38]. Through proactive communication channels, corporate decision makers can learn what matters for the stakeholder communities; this is the prerequisite for a path towards consensus building and conflict prevention [38].

The concept of stakeholder management plays a crucial role as diverse actors are linked to the Russian Arctic and the extractive industries at large. Russia is a land of diverse ethnicity. Many different cultures, indigenous and non-indigenous, call the Arctic home, and they are stakeholders in numerous projects in oil and gas exploitation, mining and forestry.

Thanks to stakeholder management, shortcomings in Russian Arctic industries have become evident at present. The identification of stakeholder groups is often insufficient, limited in many cases to the residents of an exploitation area [32]. International actors, such as representatives of nongovernmental organizations that are concerned about ecological or societal matters, are usually not identified, or, if identified, are not included in the stakeholder dialogue [32]. For those actors who are in dialogue with the industry, it has generally been the case that public hearings or meetings have been misleading. Sometimes the corporations conduct a monologue and perceive their duties as being fulfilled by informing the public about the corporate plans. In other cases, stakeholders use the opportunity to speak to the community to raise issues that are not linked to the corporate activities, but in many cases to the municipality [41]. Discussing topics that are not related to the project cannot lead to consensus building regarding the potential conflicts between the parties. Thus, stakeholder management must be conducted in such a way that all parties understand the others' positions. Social media channels allow stakeholders to present their concerns to a wider public. Even though such opportunities are also rising in the high latitudes of Russia, the opportunity to use the internet as a tool to gain attention for local expectations and demands towards the industry is not used very much by Russian Arctic stakeholders. The diversity of the ethnic groups facing the ongoing influx of extractive industries in the Russian Arctic and the different interests of these groups make it difficult to define a common stakeholder position [32]. While some stakeholders work for the companies themselves or belong to the supply chain, others are occupied in traditional livelihoods (for example, fishery or reindeer herding) or practice businesses that could be undermined by extractive industries, such as agriculture or tourism. Failure to reconcile the different opinions of the stakeholders can weaken the stakeholders' position towards a corporation and lead to minimum compliance with the demands of the most critical stakeholders [16,32]. Benefits perceived by stakeholders which have positive attitudes are often utilized for marketing purposes by companies in their sustainability reports, advertisements and other corporate publications. Whereas stakeholder protests in many countries have led to improvements in the situation of the stakeholders, to this date demonstrations in Russia have rarely led to significant changes. Socio-economic agreements are, in many cases, the outcome of informational meetings, but not meetings characterised by a fruitful debate [41]. Stakeholders in Russia must find ways to build stronger consensus among themselves and should appoint spokespersons who are continually in dialogue with the corporate decision makers, as well as with the authorities and

media [32,41]. Proactivity is not only a prerequisite for successful businesses, but also needed from stakeholders for a successful realization of their demands [38].

2.3. A Regulatory Framework for Extractive Industry Contracts

The legal bridge between the extractive industries and its stakeholders in the Russian Arctic is upheld through the establishment of bilateral or multilateral contracts [32]. The negotiation of these contracts is one element of Stakeholder Management. Russian contract law is based on market economy principles with respect to civil rights and the liberties of individuals and legal entities, equality of parties, freedom to make contracts, and inviolability of property. According to the Civil Code of the Russian Federation, a contract is an agreement of two or several entities aimed at establishing, changing, or terminating civil rights and duties [23]. Any company has a right to formulate and enter into any contract which is not prohibited by law. This legal definition reflects the traditional approach of Roman-law-based systems, which consider a contract as an agreement [22].

In the oil and gas sector there are different special aspects involved in the preparation and management of international oil/gas contracts, foreign investment agreements, and model contracts. Some of those contracts have analogues in the Russian contract system, but some contracts require adaptation before they can be used in the conditions of Russian legal realities. Some forms of contracts are subject to the provisions of the legislation, e.g., the Federal Law "About production sharing agreements" [42]; some contracts, however, are the "fruits" of business practices and regulated only by corporate norms and the general principles of the civil code. The author will provide an overview of the contracts which are often used to implement CSR policies of oil/gas and mining companies and will analyse voluntarily made socio-economic agreements because all the other above-mentioned contracts are rarely publicly available since they contain confidential information on investment projects.

2.4. Contracts with Regional and Local Governments

In addition to such commonly used primary investment contracts as production-sharing agreements and joint-venture agreements, each type of contract differs from the others. For example, socio-economic agreements may be called Community Development Agreements or Host Government Agreements (HGAs) [43].

For the most part, previous research focusing on the terminology of benefit-sharing has not focused specifically on the concept but covered the theme by embedding it in other discourses, such as Corporate Social Responsibility or environmental and social challenges caused by the operations of Russian industries. A few relevant studies that put benefit-sharing at the centre of the analysis are outlined in this paragraph. The issue of benefit-sharing agreements has been raised by Tysiachniouk, Petrov and Tulaeva [6,44], Britcyna et al. [41], Wilson [45], Chaknazarov [17] and Novikova [46]. Tysiachniouk, Petrov and Tulaeva define different benefit-sharing modes, observing cases in the Russian Arctic and Alaska. Wilson utilizes the concept of benefit-sharing in the framework of social licence to operate. Britcyna et al. see benefit-sharing agreements as a practical tool that can be utilized by local communities to achieve participatory rights. Novikova criticises in her work the fact that indigenous communities in the Russian North do not strive to broaden the agreements in terms of novel solutions that improve local well-being and the preservation of the ecosystem. According to Novikova, in many cases indigenous groups take monetary compensation based on a pre-determined benefit-sharing agreement, but do not seek other benefits that may be more valuable for the community in the long run; she is critical of the practices of making social-economic agreements in Russia. Chaknazarov indicates in his research that local groups have different opinions concerning benefit-sharing agreements. While some local groups in Russia welcome monetary compensation as an income source that has prevailed, other groups are very critical and perceive the agreements only as a formality that has no real impact. The present article is an initial step towards focusing on negotiation processes between industrial companies and interested parties to pursue legal actions;

it will consider a broader scope of social, environmental and human rights in the context of the Russian extractive industry.

Socio-economic agreements are contractual agreements made by a company with regional governments/municipalities or non-governmental organizations with the aim of providing benefits to the localities in exchange for the acceptance of industrial projects. The Russian regions have different socio-economic backgrounds, and companies usually do not have a single template for contracts; they reflect the needs of the parties depending on the social context, or the template may be provided by the region/municipality [47]. Sometimes, the elaboration of the agreements may take several years before it is completed [47,48]. When concluding these agreements, the parties usually do not provide a great deal of detailed information in the agreement, which contains a preamble specifying the names of the parties, the date and place, and the goal of the agreement: e.g., "on the one hand, the company will develop the fuel and energy industry in the region, improve the region's economic situation, and maintain the social stability and social welfare of the region, and, on the other hand, the government is obliged to take steps to ensure a positive investment environment for all business entities" and some other general provisions [41].

The main objective of such agreements is to bring permanent improvements to the lives of local communities which tend to be more strongly affected by negative impacts of industrial operations. Usually, there are no detailed provisions concerning, e.g., the environment (losses or damages) or detailed provisions concerning what the region is entitled to do in favour of the oil/gas companies. Those socio-economic agreements at the regional level consist of a list of infrastructure and facilities the companies will support; those objects of support are usually the most crucial ones that the regional budget cannot cover [41]. Usually the period of the contract is negotiated; the agreement is generally made for five years with a prolongation period. The agreements are confidential, so they are not transparent. Some sums and a few excerpts from the contracts may be published online, but the whole contract is not publicly available.

A company or a subsidiary can conclude these agreements with municipalities, too. Those agreements are commonly concluded with the territories where the extraction takes place. The benefits provided by the companies are aimed at the health sphere, education, culture and sport. Payments to local municipalities are essential; the budgets of the regions and municipalities are often insufficient to serve local societal needs. The parties to the agreement confirm that they will abide by and satisfy the terms of the agreement. However, as for contracts at the regional or municipal levels, the local people cannot track and scrutinize payments or estimate expenditures, which may leave room for distrust or even corruption. The local communities can express their opinions about which projects would be important for them, but it is unclear to what extent these opinions will be considered by the local mayor who concludes the agreement [44]. Proper negotiation and drafting of the financial provisions in such contracts are essential. These contracts have not typically served as a primary source of contractual responsibility on which individuals and local communities can rely; they are not transparent, and the nature of the contracts is not clear enough for all the stakeholders.

Residents would better understand the complex nature of extractive agreements and the responsibilities of the interested parties, including government, company and society, if the agreements were well-developed and framework agreements were available online. In some cases, when an agreement is made, it is possible that "significant inequities in knowledge and power between indigenous peoples and companies" will result in definitions of fair and equitable benefit-sharing "that are predominantly shaped by the latter" [49]. Yet some of the agreements have started to reflect detailed descriptions of company allocations and have an online presence [48]. This could be an example for other companies to follow good corporate practices. The concerns and expectations of the residents must be heard and respected and, consequently, consensus must be built. This is a prerequisite for being a good corporate citizen, as discussed earlier in this article [31]. The agreements do not ensure full compensation, because industrial operations cause complex damage to the social, economic, environmental and cultural development of the territories [50].

2.5. Company-Local Community Contract

The companies also make contracts with so-called "patronaged" parties. "Patronaged" parties may include commercial and non-commercial organizations of the local communities. Very rarely is there an agreement or financial aid to the individuals directly [41]. Concluding agreements with local communities has a long tradition in extractive industry projects abroad [6,51]. In concluding agreements at the local level, the companies pursue different objectives. For example, to operate on lands which are leased by reindeer herders (to include part of a land plot in a sublease), the agreement must be concluded to get the consent of the herders. In practice, the form of the contract does not need to be in written form, nor necessarily expressed in monetary terms [6]. Benefits can be provided for communities. For example, in-kind benefits aim at giving compensation for affected resources or lessening the risks created by a facility. Not just social issues are in the focus of agreements with local communities; the agreements can include environmental provisions or provisions concerning participatory rights or the monitoring of the oil spills situation [41] or reporting on whether the environmental laws are being respected. Compensations to local people for environmental damage caused by companies is one of the pressing issues at the negotiating table. The parties try to solve this issue, using the tools of corporate citizenship, rather than by making claims to the authorities [52].

Contracts at the local level are usually concluded for a short term—a year—and do not guarantee the stability of the relationship between the parties. The "patronaged" parties sometimes do not have the freedom to choose which provisions should be included in the documents; they follow the formal practices and do not amend the contracts [46]. They are not a totally equal party in the contracting process, and do not enjoy the principle of freedom of contract fully. Not all socio-economic agreements are specifically formulated. General statements, such as the sustainable development of the indigenous people or local support, are included but the documents lack provisions for concrete actions. How the actual benefit looks is a matter of interpretation. The capital allocations do not lead to prosperity growth of the local communities and do not cover all their damages and losses [17,51]. The communities should know where and how the natural resources and benefits are being distributed.

The broad range of stakeholders should be included in the negotiation process at all levels: socio-economic agreements, community, local and regional-level agreements. Transparency is also needed for all contracts [53,54]. Nevertheless, though the socio-economic agreements include some environmental statements, the real nature of the agreements is economic [46]. To utilize these agreements properly, local groups and municipalities must negotiate with the companies thoroughly and must agree among themselves what matters in the region. Companies can utilize the agreements by fulfilling common goals (e.g., infrastructural development, support of local suppliers and social entrepreneurship) that benefit all actors involved. Being specific and detailed in the agreements reduces the risk of conflicts and allows companies to engage in successful reputation building. Social partnerships agreements are not always publicly available in Russia. If the actors decide to give free access to actors outside the signatories, it will create credibility and transparency. These are assets that multinational companies can develop very well in their CSR strategies and CSR communication [32].

3. Discussion and Conclusions

Benefit-sharing in the Russian Arctic can be achieved by diverse concepts and practical approaches. The extractive industries can follow voluntary initiatives based on Corporate Citizenship. Since land-use conflicts, environmental deterioration and a lack of state-funded social services are evident in large parts of the Russian Arctic, it is essential to establish legally binding agreements for all parties involved. When resources are extracted in a territory, the natural environment and local sources of livelihoods are often compromised and deteriorated. Compensation and internalization with respect to negative impacts need to be arranged to maintain local livelihoods and company–community relations. In theory, legally binding agreements in the form of company-local community contracts may be superfluous if the performance of the company is perfectly in line with common practices of corporate citizenship. This is, of course, rather a normative idea and does not reflect the situation in real life.

Stakeholders in the Russian Arctic and NGOs criticize the extractive industries for diverse reasons, often linked to environmental pollution. Contracts are needed to share the benefits provided by the value chain of extractive industries in the Russian North. The Russian Arctic demonstrates clearly that both legally binding and voluntary approaches are needed to achieve stable relations between all actors involved. This is, moreover, a prerequisite to gaining socio-economic stability in the region and keeping ecological footprints to a minimum. Effective implementation of environmental laws should have priority in setting rules and protecting the local peoples' rights and way of life. To enable the provision of benefits, private arrangements should not merely replace or duplicate the norms of law.

Based on the findings this article suggests some practical implications. Modern businesses within and outside Russia need management processes beyond the basic business process such as production and services. Nowadays, practical implementation of the practices mentioned above in all operations and processes is crucial to achieve the desired results, such as stakeholder benefits and a strong societal position of the company in the community. Thus, managerial steps include setting up communication platforms via diverse channels. Traditional stakeholder meetings are as relevant as the utilization of digital solutions (e.g., sustainability reports and website announcements). In practice, every company in the Russian Arctic should assess the local stakeholders and determine their demands and expectations. Assistance from consultants from private firms and academia are often helpful to avoid incomplete assessments. The stakeholder universe seems simple within the Arctic context, but it is, in fact, very complex and ends at local borders. A globalized society links extractive industries in the Arctic to both local and remote stakeholder groups. In this regard, an understanding of the distinction between stakeholder management and corporate citizenship is important. Both concepts were introduced to cover holistically the benefit-sharing narrative. As explained above, stakeholder management embraces all groups, whereas corporate citizenship connects companies more closely to the local context (being a good neighbour). To find the right balance and complete coverage requires dialogue internally among decision makers and the work-executing staff, as well as with external experts and the stakeholders themselves.

Benefit-sharing is an ongoing discourse in the Arctic, and important trends such as strong climate change impacts in the Arctic and urbanisation make it necessary for management boards to be continually up-to-date with the developments. The composition of local communities changes due to fly-in/fly-out workers, the growing Arctic tourism sector, and natural in- and out-migration flows. Companies must react in a timely fashion to local societal changes, and the management tools discussed in this article are a valid starting point to keep on track in planning and execution processes.

The case of the Russian Arctic shows that specific benefit-sharing arrangements need to be improved. Stakeholder dialogue is often only informational, and corporate citizenship practices focus mainly on charity and philanthropic approaches. The benefits generated are crucial for the local economies, and resource extraction in the Russian Arctic is obviously the backbone of the Russian economy. Hence, socio-economic agreements in the form of company–community contracts are desired by stakeholders. The industry receives criticism from community representatives and stakeholder organizations addressing non-transparent bilateral contracts. Access to these documents is difficult even for residents of the communities affected by the agreements.

Moreover, the monetary compensations given are often controversial. The stakeholders perceive that monetary compensations do not cover the negative impacts caused by extractive operations. In some cases, compensations go to municipal bodies and serve only the regional budget to cover debts or cover administrative costs and are not transferred top-down to the residents whose lives and livelihoods are affected by the extractive industries. Russian municipalities receive payments from the extractive industries; partly, therefore, they lack the motivation to generate wealth for the region themselves by developing regional business strategies and effective austerity plans. One result of the analysis of the present research is that local communities and authorities need to be more active in negotiations with the industry as well as with political decision makers. Residents need to be active to receive their share of the benefits by raising their voices in stakeholder dialogues, negotiations,

and social media. Consensus can be built only through communication and if all parties understand the other parties' positions and their opinion on specific issues. To conclude, communication is the key to benefit-sharing agreements in the Russian Arctic in order to build mutual trust, local as well as national well-being among stakeholders, and establish well-functioning future relations.

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Mobilizing Benefit-Sharing Through Transportation Infrastructure: Informal Roads, Extractive Industries and Benefit-Sharing in the Irkutsk Oil and Gas Region, Russia

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Abstract: Road infrastructure development is an existing, but not a frequent element of extractive industry benefit-sharing frameworks in remote northern regions. However, it is often at the center of extractive activity and inflicts major impact on environment and communities. This paper examines the benefits and impacts derived from development of informal roads, i.e., vehicular roadways beyond the current publicly-governed road networks constructed, maintained and/or used by various entities and individuals based on private, special purpose and/or informal practices and regulations. Based on several field studies, GIS analysis of road networks and examination of secondary sources, the article investigates the use of informal roads as a form of benefit-sharing and details their impact on mobilities, environment and livelihoods of local and indigenous communities in the Irkutsk Oil and Gas region, Russia. We argue that construction, maintenance and use of the industry-built roads can be a part of benefit-sharing agreements, albeit mostly semi-formal and negotiated. The gains and problems stemming from 'trickle-down' (i.e., unintended) effects of the road networks are the most significant. The community-relevant implications of informal roads go far beyond immediate impacts on surrounding environment, but deeply affect subsistence activities, mobility, food security, personal safety and even consumer preferences of the indigenous residents.

Keywords: informal roads; benefit-sharing; extractive industries; transportation infrastructure; indigenous people

1. Introduction

Benefit-sharing can be defined as the distribution of monetary and non-monetary benefits generated through resource-extraction activities [1,2]. Benefit-sharing is closely related to the notions of Corporate Social Responsibility (CSR) and Social License to Operate (SLO) and recognizes the right of local communities to receive a share of profits received by a resource company [2]. The concept highlights the necessity to share these benefits with the local stake- and rightsholders who live near to the resource extraction areas and provide access to the resource for companies.

Benefit-sharing aims to improve the local communities' wellbeing and promotes fate-control and self-reliance [3]. Benefit-sharing can be implemented by the state by means of sovereign wealth funds, land lease agreements, social investments or by extractive companies' own initiatives, such as philanthropic, (supporting cultural festivities, revitalization of languages or sports), investments in infrastructure, education, training and technology, as well as in new jobs creation [2,4].

Benefit-sharing regimes that characterize the relationships between extractive companies and local communities rely on various mechanisms of benefit implementation. These mechanisms are financial, legal and procedural ways used to operationalize benefit-sharing [2]. In the literature, four primary mechanisms prevalent in the Arctic have been identified: streamlined (mandated), negotiated, semi-formal and "trickle-down".

Streamlined or mandated benefits are firmly established and institutionalized in legislative or other legal acts and prescribe obligations, responsibilities, specific implementation tools and often give access to remedy, if conditions are not met. Many of these benefits are legally-binding, such as taxes and royalties.

Negotiated benefits refer to negotiated arrangements between companies and/or governments and/or communities. These negotiations lead to formalized agreements that have various levels of legal standing and nature. Classic examples of negotiated benefit-sharing arrangement is an Impact and Benefit Agreements (IBAs) [5,6] and socio-economic cooperation agreements [7].

Semi-formal benefits are relatively informally established forms of compensation, investment and sponsorships often originated upon specific request and, in Russia, manifested in the form of the "plea-and-take" system [8]. An extractive company typically receives such requests from communities or government entities and decides whether it chooses to share benefits. This process is intransparent and decision-making power is always retained by a company.

In the article, we offer a look at how benefit-sharing mechanisms are materialized in a specific context, in this case, expansion of road networks. Road infrastructure development is an existing, but not frequent element of benefit-sharing arrangements. It is typically overshadowed by other provisions, such as compensation payments, grants, investment in social infrastructure, etc. However, roads are the main element of transportation infrastructure in remote regions, and as such, are often at the center of extractive activity and inflict a major impact on the environment and communities [9,10]. As a result, both construction and use of the industry-built roads can be a part of benefit-sharing agreements, albeit mostly semi-formal and negotiated. The gains (and problems) stemming from "trickle-down" (i.e., unintended) effects of the road networks are, perhaps, by far the most significant. Since many extractive activities require an extensive and expensive transportation network development, it is natural to expect that roads will be playing a key role as the elements of benefit-sharing frameworks. While extractive companies facilitate local mobilities via the provision of transport services, road maintenance, or oil and gas supplies, other aspects of increasing human and non-human mobilities remain beyond the scope of negotiations on benefit-sharing.

Transportation infrastructure, and roads specifically, are often considered important factors of economic development in remote areas [11,12], although they can also play a dual role by generating undesirable consequences [13]. They cross multiple domains of human use and well-being: not just mobility and access, but also food security, personal safety, human/Indigenous rights, health, and knowledge. By improving access and increasing mobility new roads reduce the cost of travel, open new opportunities to reach markets and exploit local resources, provide connectivity among communities, and enhance the delivery of transport-dependent services. In this respect, road infrastructure development is often viewed as a significant benefit to local communities [14,15]. At the same time, road infrastructure can exert negative impacts on local communities and the environment. Some forms of traditional mobilities are disrupted and hindered by new infrastructural development which is sometimes conceptualized as "infrastructural violence" [13,16]. There are numerous examples illustrating roads as undesirable for local communities and harmful for the environment [17]. Remoteness and extreme climate conditions lead to use of non-local workforces

in extractive development areas and result in changes in mobilities [18–21]. The negative effects of transportation infrastructure on traditional cultures and lifestyles arise from increasing access by "outsiders" to the local resources (e.g., traditional hunting and gathering grounds), exposing local communities to social problems (e.g., alcoholism, drug use, violence etc.) and changes in family and community life, subsistence economy and traditional cultures in general [22–26]. In shamanic worldviews, characteristic for many indigenous groups, people upturning the ground are expecting misfortunes. Road construction in this perspective violates spirits' dignity. Infrastructural elements within this perspective of responsive landscapes are articulated as "scars" [27].

The studies focusing on environmental changes identify transportation infrastructure as one of the main contributors of surface disturbance and habitat fragmentation that impair access of local communities to subsistence resources (e.g., [9,28,29]). The roads are often linked to land-use change and fragmentation, deforestation, pollution and threat to biodiversity. Permanent roads negatively affect the hydrologic regime, permafrost, vegetation, and contribute to pollution (e.g., [23,29–34]). Researchers call for preserving the roadless areas to prevent "contagious development" that the road construction brings [35].

In the Arctic, infrastructural development has been the main state endeavor that first brought large flows of population to the remote regions during the construction stage, and then facilitated the development of extractive industries in the areas formerly too remote for exploration. Depending on the distance from the cities, researchers find communities having more or less access to basic services and goods [36–38]. Alternative modes of transportation available through new infrastructure development also reduce the dependence on specific modes of transportation and thus diversify economic activities [39]. Currently, not only state, but also other actors, such as extractive companies and local communities are engaged in either developing or utilizing roads in formal or informal ways. For example, anthropologists document the road networks formed by indigenous people different from the ones formed by the states [40,41]. These roads usually neither exist officially, nor mapped [42]. In Siberia, we find the importance of informal roads not only for indigenous people, but also for other remote communities lacking political power.

Informal roads are vehicular roadways beyond the current publicly-governed road network constructed, maintained and/or used by various entities and individuals based on private, special purpose and/or informal practices and regulations. In the literature, they are documented as "hidden roads" [43], "unofficial roads" [44–46], "unchartered roads" [47] or "roads of local significance" [48]. To distinguish informal roads from planned and constructed formal routes, Trombold [49] proposed the term "informal roads". However, the difference between formal and informal roads is not obvious: once constructed formal roads may become informal if left unmaintained due to changes in priorities and budgets. For example, Argounova-Law [50] emphasized social significance as the main feature defining roads. Moreover, the proliferation of modern all-terrain and 4WD motorized vehicles in remote parts of the world imposes less stringent requirements on road construction and maintenance [51], while affecting the environment [52–54].

With increasing technological development and connectivity, mobilities are afforded not only by conventional official roads, but also other linear structures created for initial exploration, construction and maintenance of the infrastructural objects that remain usable after the initial purpose was abandoned. Together with other private and special purpose roads they form a network of transportation infrastructure that is not existent on official maps nor it is governed by official documents and authorities. Depending on their use, users and impact on local communities and environment, these roads can be differently represented in benefit-sharing.

The focus on informal roads allows to explore how benefit-sharing is materialized in specific landscapes, and how they are distributed and experienced by members of local communities. Specifically, we pursue the answers to the following questions: (1) what is the role and nature of informal roads as part of benefit-sharing? and (2) how different benefit-sharing mechanisms mobilize benefits stemming from the informal roads infrastructure, and what issues do they create? To

accomplish this, we examine the uses of informal roads as a form of benefit-sharing and investigate how they affect mobilities, environment and livelihoods of local and indigenous communities in the Irkutsk Oil and Gas region.

2. Materials and Methods

For identification of informal roads, we used existing Russian federal regulations. The norms and rules of the automobile road construction and exploitation are regulated by the Federal Law #257 [55]. The public roads according to their significance and jurisdiction are classified into federal, regional and inter-municipal, municipal, and private roads [56]. Among public roads only ones connecting regional centers have federal significance, and therefore receive federal funding and, consequently, are better maintained. However, even some federal roads lack maintenance, such as part of the seasonal winter road "Viliuy" which connects the Republic of Sakha (Yakutia) with Ust-Kut and a permanent federal road network [57].

In terms of access, the federal law distinguishes roads with public (unlimited) and non-public access. The distinction between these two kinds of roads is defined only by the availability of specific equipment restricting access. If the road is not fenced and monitored, it is available for public access. For example, the forest roads are regulated by specific rules of design and construction [58]. According to these regulations, forest roads, as well as other service roads, are not designated for public use and general vehicles. However, absence of fences or gates allows people to use them almost without restrictions. When private forest companies rent specific forest areas, they often construct checkpoints. Since access to some private roads and state-owned non-public roads can be negotiated and varies from case to case, we consider these roads as informal. Finally, informal roads consist of former public or private roads that were abandoned, but continue to be used for travel; geophysical line clearings—roads made once for geological exploration and then abandoned or used for other purposes; trails and tracks traditionally used for subsistence activities and used by motorized vehicles; and unofficial tracks or roads of various qualities laid between settlements that have not been recognized, and therefore, maintained by authorities.

In order to capture the diversity of informal roads, their users and types of use within benefit-sharing arrangements, we combined interviews, participant observations and GIS analysis of road networks. The field studies were conducted in 2014 and 2016 with a focus on interactions between local communities and extractive industry, and in 2019 with a focus on informal roads and their users. The interviewees were found using snowball method and former social networks. The duration of interviews ranged from twenty to ninety minutes and averaged forty to sixty minutes. Although during these years we gathered 55 interviews in the study area, for analysis in this paper we included 16 in-depth interviews with local hunters, community leaders, municipal authorities and company representatives (Table 1), as well as materials of participant observations in the villages of Vershina Khandy (Kazachinsko-Lenskii Rayon), Tokma (Katangskii Rayon) and city of Ust-Kut (Ust-Kutskii Rayon) (the research is exempt from IRB review under DHHS regulatory category 2 (IRB# NCR191103)). In particular, we analyzed the interviews where respondents discussed the benefits and problems of transportation accessibility, environmental degradation, and mobility brought by development of the networks of automobile roads. The interviews were transcribed, anonymized and coded using NVivo to explore specific discourses related to the specific roads, their users and uses. The research is in part based on grounded theory as it is based on an analysis of previous interviews for formulation of the following research objectives. On the other hand, the research is based on synthesis of existing studies of benefit-sharing mechanisms. For more empirical grounding we also used public environmental impact assessment materials for Kovyktinskoie gas deposit [59], and annual socio-economic reports produced by municipalities.

Table 1. Key study sites and interviewees.

Community	Number of Interviewees	Local Hunters (LH)	Community Leaders (CL)	Company Employees (CE)	Government Officials (GO)
Vershina Khandy	3	2	1	-	-
Tokma	8	4	2	-	2
Ust-Kut	5	-	-	2	3

There is some disbalance in the representation of different groups across local communities related to the structure, size and stage of industrial exploration of communities. In particular, the village Vershina Khandy does not have any representatives of government because officially it is considered as an inter-settlement territory with an unstable population which varies from five to a few dozens, according to local experts. We did not have interviews with representatives of companies operating in the areas of Tokma and Vershina Khandy, because they are located beyond the study area. In case of Ust-Kut, hunting plays a marginal role in the city, and there are no formally organized communities beyond the ones related to the government.

Study Area

The case study area (Figure 1) remains one of the remote places lacking transportation infrastructure. As in many other Arctic and Subarctic communities, accessibility often has seasonal character: some remote communities in summer use water routes and in winter—winter roads. The presence of permafrost over most of the area increases the cost of road construction and maintenance by 3 to 5 times compared to temperate regions [60]. The study area is dominated by the typical Siberian boreal forest with boggy landscapes that makes moving around difficult even for off-road vehicles and snowmobiles. High costs of construction and maintenance make authorities to look for different ways to reduce costs. The local public automobile roads have only regional significance which means the intensity of traffic is between 200–2000 vehicles a day [56]. The regions with seasonal transportation access receive subsidies for transportation of food and fuel which is cheaper than building new roads. Therefore, companies, interested in development in those areas have to build their own roads to move people and goods.

Our study sites, the villages Vershina Khandy and Tokma, are settled by Evenki and Russian old-settlers. Evenki, indigenous Tungus-speaking people traditionally conducted reindeer herding, hunting, fishing, and gathering Siberian pine nuts, berries and herbs. In the 18th century Cossacks arrived in the area. Among the settlements formed during that time was the city of Ust-Kut (44,500 residents) founded in 1631 on the Lena River by migrants from European Russia. The city of Ust-Kut has developed as a key transport hub with the construction of the Osetrovskiy River Port (the largest in the USSR) in 1950 and the Baikal–Amur Mainline (BAM) railway in 1975. The main sources of income local population derive from the public sector, oil industry, transportation, forest industry, and service sector [8].

The villages of Tokma and Vershina Khandy were founded in the 19th century by Russian settlers and evolved in the early 20th century as Russian trade posts (factories), supplying hunters with food, weapons, and other goods, as well as buying products of hunting activity from hunters. Gradually, the local nomadic population of Evenki settled near these posts. In the 1930s, when collectivization began, the sedentarization process accelerated. The first hunting organizations were formed here at the same time. During the Soviet period, commercial hunting in the northern districts of the Irkutsk Region was controlled by the state enterprises [61,62]. However, with the collapse of the Soviet Union, state hunting enterprises were closed, and indigenous people faced the need to independently protect their rights to traditional lands and activities. To preserve traditions of Evenki land use in the 1990s and the beginning of the 2000s, the *obshchinas*, indigenous non-governmental enterprises, were organized and

obtained hunting licenses on the territories of their traditional land use. Nowadays commercial hunting remains the source of cash income for many Evenk and old-settler hunters of these villages [63].

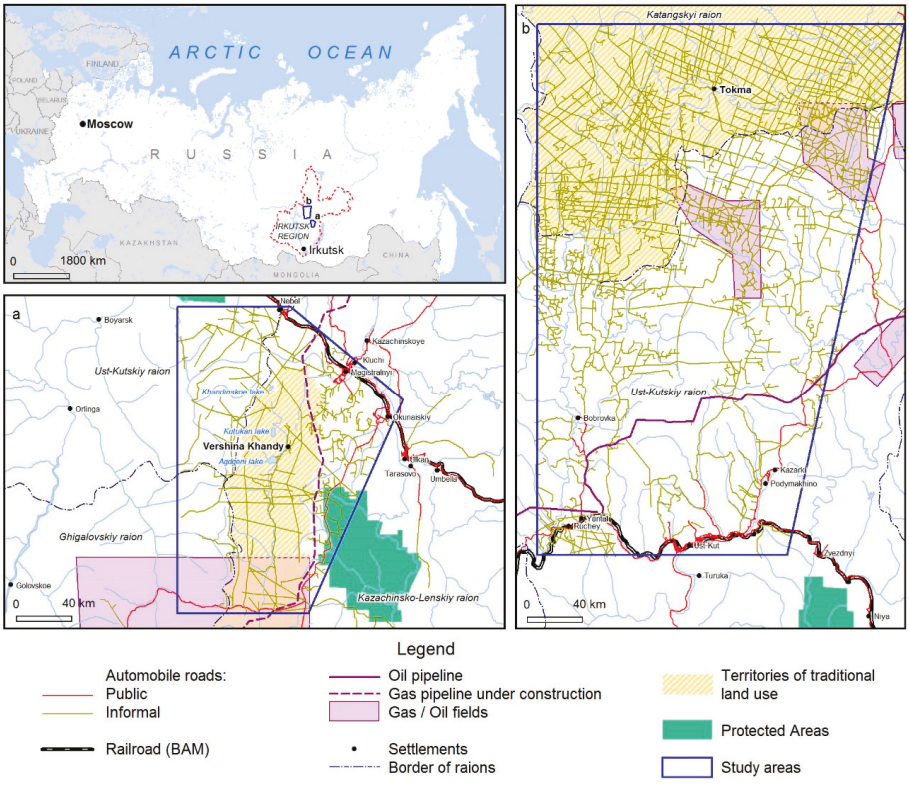

Figure 1. Study area.

The first informal road networks were formed along straight lines (forest clearings, so-called 'profiles') made in the taiga for geophysical exploration in the 1970s. They were successfully included in the hunting infrastructure by local hunters for driving on snowmobile. In these years first winter car road connected Tokma with other settlements and cities. In the mid-2000s, the informal road network was expanded with oil and gas exploration, the forest logging industry and supporting service roads (Figure 1).

The main extractive companies in the area near Tokma are Irkutsk Oil Company (IOC) which operates on the Yaraktinskoie and Ichodinskoie oil deposits, and "Russian Forest Group" (former TSLK). Vershina Khandy traditional territories are used for gas exploration sites and gas pipeline construction by Gasprom, as well as for forestry by the state-owned Forest Service, Russian companies Rusforest and Kirenskles, and a Chinese-owned company Eurasia. The Kovyktinskoie gas condensate deposit in the traditional territory of Vershina Khandy Evenki was discovered in 1987 and is known as the biggest gas deposit in the Russian East [64]. In 2014, an agreement between Gasprom and the Chinese National Petroleum Company (CNPC) on the construction of the Power of Siberia gas pipeline from the deposit was signed at the highest level [65]. It is planned to be the main source of gas transported to China in the future. After the gas pipeline will be built to Kovyktinskoie gas condensate deposit (by 2023), China will become the second-largest importer of Russian gas.

3. Results

3.1. Benefit-Sharing Arrangements and Informal Roads

In the study area, informal roads become a part of benefit-sharing arrangements that employ different mechanisms. Since these transportation networks lack formalized regimes of use and maintenance, the mechanisms by which they can be engaged in benefit-sharing frameworks will likely not be streamlined or mandated, but rather negotiated, semi-formal and "trickle-down". In other words, informal roads, either directly or not, could be a part of a benefit-sharing "package" that is more or less formally negotiated between a company and community or unintentionally emerged as a result of infrastructure development. Table 2 shows different mechanisms and provides examples of benefits and accompanying issues associated with each form of benefit-sharing in the Irkutsk Oil and Gas region. Detailed case studies are also discussed to illustrate the role of informal roads in benefit-sharing arrangements based on data from Tokma, Vershina Khandy and Ust-Kut.

Table 2. Mechanisms of benefit-sharing in the Irkutsk Oil and Gas region.

Mechanisms	Benefits	Issues	Benefit Sharing Implications
Streamlined/Mandated	not applicable		
Negotiated	Access to company-administered roads, negotiations for local use, part of SE partnerships for investment in informal roads (maintaining or cleaning community roadways) Compensation for disturbance and damage associated with road construction and operation	Relinquishment of transit rights over land (full or partial) Acceptance of disturbance and damage Deceptive negotiation practices Lack of negotiating capacity Lack of access to enforcement and remedy	Can be considered for compensation payments, special access rights and privileges as a part of benefit-sharing arrangements
Semi-formal	Ad hoc access and use, sponsorship of maintenance beyond SEPA Tolerance to undetected or illicit use by the locals	Lack of control and high uncertainty Propagation of dependency Danger of fines and prosecution Subject to surveillance and violation of privacy Restriction of mobility and securitization	Formalizing access and use rights as a component of benefit-sharing
Trickle-down/derived	Time, fuel savings, increased accessibility and mobility, recreational and tourist access	Dependency on company's will to have roads open. Uncertainty of use. Lack of purposeful benefit-sharing (e.g., road ends in a few km from a village)	Predicting and monitoring these effects as a part of benefit-sharing frameworks

3.1.1. Negotiated Benefits

Negotiated benefits result from negotiations between extractive companies, government authorities and local communities. In cases when transportation infrastructure is a part of benefits covered under such agreements, it typically concerns the access to company-administered roads, availability for local use, or investment in informal roads construction or maintenance. On the other hand, roads developed by extractive companies may trigger a negotiated compensation for disturbance and damage.

For example, near Tokma and Ust-Kut, the newly built oil drilling infrastructure is connected with the "Eastern Siberia–Pacific Ocean" (ESPO) pipeline. It consists of the oil pipelines and service roads which usually have restricted access. The service road constructed along the ESPO pipeline after negotiations with local and regional authorities of the Republic of Sakha (Yakutia), where this road continues, became the main transportation pathway for vehicles delivering goods to the region. The local residents in the Irkutsk region and in Sakha are allowed to use the road for free if they can prove their local residence, however, the cargo transportation is charged additional fees.

Near Vershina Khandy, a Gazprom subsidiary is building 14 bridges and constructing 80 kilometers of the gravel road to connect the Kovyktinskoie gas condensate deposit and its shift-worker camp [66]. The road leads from the BAM railway to the Gasprom shift-worker camp while the remaining part allows movement of vehicles with the speed of around 20 km/h due to bumps and potholes in summer.

In winter, when bumps and potholes covered with snow, the traffic increases. It is the shortest road from Irkutsk to such cities as Severobaikalsk (population 22,000) and Kirensk (population 11,000) and is used by public transport.

As for the forest companies, the Evenki obshchina in Vershina Khandy receives compensation only from RusForest (16,000 Rubles or about $500 USD) plus wood supply annually [67]), a forestry company that also hires residents to work at their checkpoint in summer. In Tokma, in 2010 another forest operator, TSLK, concluded an agreement with the local obshchina where, beyond other benefits, the company took responsibility to maintain a winter road connecting the village with the TSLK forest road [68].

In addition, agreements between companies and local communities often have other components related to the road network development. In particular, the Tokma obshchina and IOC have signed an agreement according to which the company guarantees to supply gas condensate to the local hunters and to transfer money for hunting licenses [68]. However, the hunters should manage to transport the fuel from the company's Yaraktinskoie oil field which is located more than 100 kilometers by the company's winter service roads. They usually hire a tank truck to deliver fuel that costs around 1000 Rubles for 200 liters [69]. It is cheaper than diesel fuel which costs around 10,000 Rubles for 200 liters in the northern districts. However, the gas condensate does not have stable quality and sometimes hunters are hesitant to use it due to the risk of damage to their vehicles.

The purchase of transportation vehicles (on- and off-road) is the preferred way to receive compensation and benefits from oil and gas companies by the Vershina Khandy obshchina members. They received first used off-road vehicle in the early 2000 s from the Rusia Petroleum. In 2017, they received 5.5 million Rubles in compensation from Gasprom to cover administrative expenses for the functioning of obshchina and maintenance of their territory of traditional land use and buy transportation vehicles, such as snowmobiles and swamp buggies [67].

3.1.2. Semi-formal Benefits

Semi-formal benefit-sharing includes interactions between extractive companies' representatives with members of local communities related to construction, use and maintenance of the informal road. For instance, to get to the village, Vershina Khandy residents use parts of the forest road currently rented by RusForest. The road is closed for public in summer, but based on a tacit agreement with the company, the residents of the village are allowed to enter. However, the forest road ends in about 15 kilometers from the village. During the BAM construction, the locals asked a bulldozer driver to beat a track to the village through the forest which he did, but in about 8 km to the village, the boggy area begins, which bulldozer could not overcome.

In Vershina Khandy, the service roads to the gas deposit are used by hunters while officially they are closed for public access:

"There is Kovyktinskaia road to the deposit. And our hunters are there. We agreed [with the company] they would have access to their hunting grounds. Once N. complained that [company] restricted access. I called the principal project engineer and asked why they closed access to hunters. He said they didn't. Hunters just need to confirm they are from our obshchina and they will be given access" [67].

Frequent encounters between extractive industry workers and local hunters develop personal relations which can be of mutual benefit. For instance, a worker can informally negotiate with a hunter exchange of fuel for some other goods (traditional products or services). As in other remote regions (e.g., [50]), company drivers have given assistance to anyone who got stuck or other troubles on those roads. Since the main users of these road networks are extractive companies' workers and hunters, interdependence grows in this direction.

Since the winter roads are highly dependent on the weather conditions, scheduled road maintenance according to agreements may not be enough for local mobility. Cleaning of informal roads is another area where semi-formal arrangements play a prominent role. In Tokma, Irkutsk Oil Company occasionally clear snow on the winter road based on community requests: "Well, they usually do not mind clearing the winter road. However, we need to make requests" [68].

Since the roads are made informally, they do not have other elements of road infrastructure, such as road signs etc. As a result, it is easy to get lost in their labyrinths (see Figure 1). Usually, hunters privately negotiate with the companies working on their hunting plots to receive maps of informal roads and immediate plans for their development, to plan hunting activities [70].

3.1.3. "Trickle-down" Benefits

"Trickle-down" benefits are typically associated with unplanned positive effects of the roads. In the study region, extractive companies have invested in improving existing roads, turned parts of former seasonal roads into permanent ones, built new roadways and made tracks for vehicles in previously inaccessible areas. All these endeavors significantly improve local accessibility and mobility and open prospects for the development of road services. Areas, previously heavily dependent on seasonal roads and much more expensive air transportation, have secured delivery of goods and services for comparatively lower prices. The reduction of travel time and distance has been also significant that allowed to save on fuel, vehicle maintenance, transportation costs and other related expenses.

One example of increased transportation accessibility is access to the ESPO service road. It is estimated that travel time decreased several times for the trips from Ust-Kut to the Republic of Sakha (Yakutia). As a result, local and non-local drivers, as well as transport companies, found new ways of offering transportation services. Some residents have opened road cafes and repair stations along these major informal roads. Figure 2 demonstrates a drastic improvement in transportation accessibility in remote areas north of Ust-Kut after service roads were built. As a result, the city increased its importance as a key area in transporting goods to Yakutia and servicing major extractive industry developments in Eastern Siberia. Due to the new construction of all-season and especially winter roads, places previously accessible only within 30–40 hours of driving are now reachable in half of that time.

At the local level, informal roads are used by local hunters in their traditional activities to move around or to organize hunting. As one hunter noted, the geophysical line clearings are better for travel on snowmobiles than his own trails: he sets up traps along the roads and finds that some animals also prefer to move there [71]. Some residents of neighboring settlements and even distant cities have benefitted from improved access to recreational hunting and fishing activities as well as to other tourist purposes [72].

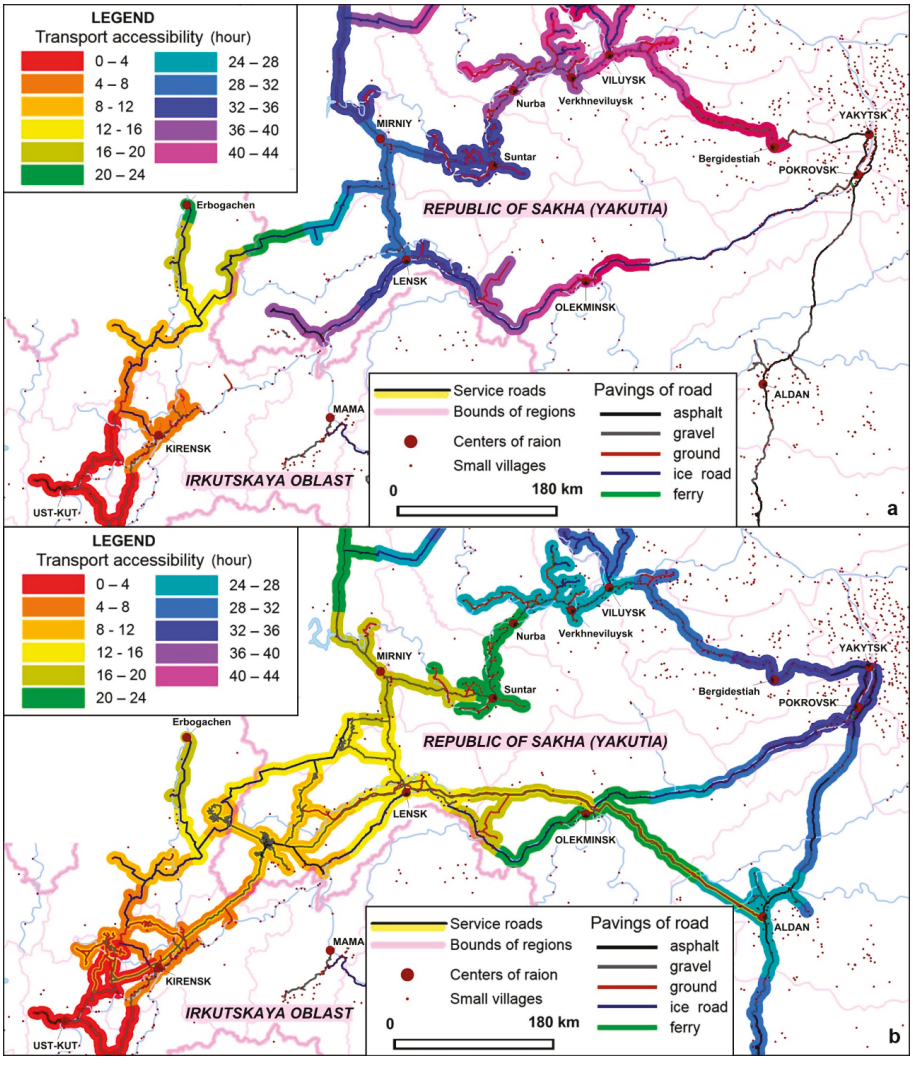

Figure 2. Transportation Accessibility of Ust-Kut in winter (**a**) without new service roads, (**b**) with new service roads.

3.2. Issues Related to the Informal Road Network Development

Benefit-sharing frameworks that incorporate informal roads, however, may have multiple negative implications for local communities. In general terms, these newly-created issues can be related to access, intrusion and internal community impacts. Implications for access typically encompass the lack or loss of control over and high uncertainty of road use and availability, surveillance and securitization of land use, as well as the necessity to deal with consequences detrimental to the environment and community wellbeing. Intrusion is represented by the onset of newcomer inflows, including poachers, increased levels of disturbance by vehicular traffic, and penetration of other non-local human and non-human intruders (animals and plants). Internal community impacts may be related to the depletion of subsistence resources, uneven mobilities, growing social differentiation, and the loss of land-based

skills and attachment to the land. These problems cut across different benefit-sharing mechanisms, although some are specific for particular arrangements.

Intrusion and rising accessibility to outsiders has been often cited by local residents as a direct consequence of informal road propagation. Heavy machinery used by exploration workers damages local informal roads that already lack maintenance. The workers involved in geological exploration and forestry activities are often blamed for traveling not only for work, but also for fishing and poaching. The local hunters note trash and littering (jars, bottles, plastic bags), oil and fuel from oil drilling machinery licked into the rivers, and even abandoned off-road vehicles [73]. Sometimes the wood left after the forest clearings remains piled on the former hunting trails and even in the river where it was used for river crossing in wintertime. In order to move around, hunters have to clear those debris [74].

Availability of informal roads increased competition for subsistence harvest by opening access to numerous fishermen, who visit the territory not only from the neighboring settlements, but also from distant cities such as Irkutsk. The lakes Agdzheni and Kutukan and the Khanda River are rich with pike, perch and dace [59]. According to local hunters, in summer, there are also occasional fishermen, who travel there, and the number of cars can reach 20 daily. Usually, they have good expensive cars able to traverse low-quality roads. In summer, the outsiders drive to a landing point on the Khanda River 80 km downstream from the village and use boats to move upstream for fishing [72]. While fishing, they often occupy local hunters' huts, stealing and causing damage to the property. Eventually, it led to the practice not to leave anything in the hut. In order to keep non-local fishermen away, one resident had to put barbs around his hunting hut only to find it later burnt down. Another hunter blamed fishermen for accidentally burning his hut. Therefore, hostile relations are formed between 'guest' fishermen and local hunters: "Sometimes you come, your winter hut is full. You start to swear and kick them out" [74].

Increased accessibility of the village also brings a larger number of middlemen who arrive to buy products of traditional activities or engage in harvesting directly. One particular issue is the increased pressure on the pine nuts resources. With the construction of roads and growing volume of traffic, locals typically set up camps and sell pine nuts gathered in the proximity of the roadways. The pine nut harvesting ranges from 50 to 400 kilograms per family and in the situation of high unemployment, pine nut gathering forms a significant share of the family cash income [59]. Increased local harvesting is coupled by the influx of outside gatherers who use the roads to access the taiga. In addition, hunters suspect forest companies and forest agencies in intentionally underestimating the share of Siberian pine nut trees to circumvent the logging restrictions in pine nut tree reach areas because these trees are more expensive in China [72].

A major impact on the ecosystem directly associated with informal roads construction is forest fragmentation. Often the forest is intersected by geological profiles every 150–300 meters forming a tight grid of pathways (Figure 1). In contrast to most official roads, these informal roads are not elevated and often have remaining vegetation. During the dry season travel by heavy machinery by these informal roads can spark forest fires. In addition, easy access to vegetation attracts animals and birds. Almost every interviewee told stories about encounters with bears. Residents often see red deer, and deer crossing the roads and capercaillie and black grouse flying over the roads. As in many other places, these animals and birds are killed on roads under cars or by occasional poaching despite the regulation that only members of indigenous communities and those who have hunting licenses are allowed to hunt in the area. Fishermen are often allowed to carry guns for self-defense since there are occasions when people are attacked by bears. Only the Irkutsk Oil Company has internal regulations prohibiting to carry guns and keep dogs in the area of oil exploration [75].

Informal roads also impact animal migration routes and patterns, and thus affect hunting practices and availability of country food. The impact varies among different species. In particular, hunters note sable returns in a couple of years after the new constructions. There are accounts of moose and red deer moving further to the north using roads. Hunters don't expect moose coming back being substituted

by elk that affect local diet: neither Evenki nor Russian old settlers are accustomed to consuming elk meat [76].

Adapting to the development of informal road networks without means to pay for maintenance and no easy access to repair stations, obshchina members have to be able to repair the cars by themselves. They buy vehicles that can be easily repaired and/or do not require frequent spare parts replacement. Moreover, using gas condensate (provided by oil companies as part of the benefit-sharing agreements) which does not have high quality and damages the vehicles' engines, hunters face the need to repair snowmobiles more often. Vehicles maintenance and travel by informal roads require specific skills: a person should be strong enough to handle the vehicles and make needed adjustments during the travel. Eventually, it is only able-bodied men who travel by those roads, while others (women, children, elders, disabled people) stay in the village.

3.3. Implications of Specific Benefit-Sharing Arrangements

Issues associated with the informal road use described in the previous section are common for various types of benefit-sharing arrangements. However, certain benefit-sharing mechanisms exacerbate or generate additional, specific problems.

The negotiated benefits may generate a range of negative effects of road network development. In particular, local communities often have to fully or partially relinquish their transit rights over land and accept disturbance and damage caused by roads. Some hunters have already lost their hunting grounds due to dense extractive infrastructural development. In addition, local communities do not have enough negotiation experience and rarely have access to information and professionals who could assist with formulating and promoting their interests. Meanwhile, the interests of extractive companies are well formulated with the emphasis on benefits the communities will receive. After the agreements are signed and companies received the official community's approval, there is little room for the locals to change the terms. Since the negative effects are usually uncertain and companies' responsibilities for damage are omitted or mentioned vaguely in the agreements, communities don't have access to enforcement and remedy.

Among the issues the local communities face with semi-formal arrangements is the lack of control and high uncertainty on what exactly, how and to whom an extractive company will grant access privileges. The residents make requests that can be described rather as a plea than a demand (cf. [2]). These relationships solidify uneven power relationships between companies and communities and propagate dependency and paternalism. Since semi-formal arrangements typically lack an officially documented proof of access or guarantees to deliver goods and services, local community members face the danger of fines and prosecution for potential 'violations,' while being deprived of legal remedy. In addition, with increased control and monitoring over the users utilizing private roads, the indigenous and local residents become subject to surveillance and violation of privacy. Such securitization of space and scrutinization of mobility disrupt the traditional lifestyle exercised by many Indigenous peoples in the region.

4. Discussion

This paper has applied benefit-sharing mechanisms classification framework developed by Petrov and Tysiachniuk [2] to informal roads. The negotiated, semi-formal and trickle-down benefits were identified and illustrated by case studies. Within the negotiated benefit-sharing, informal roads can be linked to compensation payments, special access rights and privileges as a part of benefit-sharing arrangements. As pointed out by Bennett [12], indigenous people can and sometimes do have significant interest in developing transport infrastructure. Their opinions and interests in infrastructural development should be part of negotiations over the development of extractive industries. Moreover, since these roads lay over and often disrupt traditional activities, local communities should have equal rights for their planning and use as a component of benefit-sharing.

The ability to trace the origins of the roads in the remote region in this research is different from the studies of infrastructural violence in the cities where researchers struggle to locate blame and responsibility [13]. In our case, the violence is less abstract and responsible parties are better known. Moreover, often members of local communities are interested in and benefit from infrastructural development. While Saxinger, Krasnoshtanova and Illmeier in their study [16] found disappointment by lack of new road construction and maintenance in another remote community affected by oil extraction and described it in terms of infrastructural violence, communities in our study area did not have permanent access to transportation infrastructure in the first place. Therefore, even the slightest improvements in accessibility are described as beneficial.

Most of the benefits of informal road development are semi-formal and trickle-down. Community members benefit from their own increased mobility as it was already described elsewhere [14,15]. They gain more access to remote parts of the hunting and fishing grounds, become more connected to nearby communities, experience the influx of previously unavailable goods and services, upgrade their fleet of on- and off-road vehicles.

The precarious nature of informal roads makes it difficult to identify their overall impact on local communities. In cases we analyzed, both procedural and distributional equity [77] in respect to roads and benefits is low and power rests with the companies. Little or no legal or other official remedy exists for communities due to the informal and non-public nature of the roads. At the same time, although the informality of road networks gives the power to companies, it may provide the locals with a leverage to 'outsmart' the companies and use roads in adaptive ways. Generation-long knowledge of the land and ability to adapt to changes help the locals to take advantage of the road networks. They enhance traditional hunting and gathering activities using new infrastructure based on formalized or informal relations with companies.

The informal character of developed infrastructure to some extent is beneficial for local communities due to relatively low cost (requirements for maintenance are either non-existent or lower than for regular public roads), flexibility (the ability to change directions and location) of these road networks and lack of state control. With the construction of company roads, transportation by off-road vehicles becomes a new norm for local communities. Since the hunt had been established before and the hunting infrastructure was developed already, the use of new informal roads is not a need, but adaptation to new conditions.

However, the negative impacts likely outweigh those benefits by giving extractive companies incomparably higher benefits and, most problematically, control over where, whom and how to allow access to 'their' infrastructure. With the construction of company roads, transportation by off-road vehicles becomes a new norm for local communities. Increased mobility and intrusion of other actors has brought conflicts, competition for subsistence resources, intrusion of alien species, etc. Those hunters, who do not have access to vehicles in general and especially to the ones of better quality that recreational fishermen have, may feel deprived. Inequalities in access to employment and related financial wealth exacerbate those tensions.

In general, it is already well documented that traditional activities have been conflicting with infrastructural development: newcomers are blamed for game poaching and overexploitation of local biological resources [24–26]. However, the questions of protection of traditional hunting and fishing routes remain complicated by the fact that not only indigenous people, but also other residents are impoverished and rely on subsistence activity. Meanwhile, there is an increasing share of recreational hunters and fishers, who may also originate from local and indigenous communities, but have other sources of income.

Traditionally, indigenous people were hunting and moving around and left behind traces, trails, paths and tracks [78]. For Evenki and old settlers, hunting activities have been part of the traditional way of life and the hunting infrastructure has been developed already. The new transportation infrastructure generated by extractive industries and used in informal ways has become an important factor (and a driver) of their encroachment upon the areas where hunters previously enjoyed with the significant

autonomy of the ways of life. The uncertainties associated with road use rights and responsibilities create power structures that are disadvantageous for local residents and reinforce dependency and paternalism. This is coupled with another unanticipated effect of industrial development: the objectification of nature within the extractivist logic [79]. Encountering outsiders' perception and treatment of animals, plants, and underground as resources, Evenki loose traditions of more intimate reciprocal relationships inherent to their spiritual worldviews and beliefs [59].

5. Conclusions

In the article, we examined how streamlined (mandated), negotiated, semi-formal and 'trickle-down' mechanisms of benefit-sharing are materialized in the forms of automobile road network development. This study argues that informal roads constitute an important part of benefit-sharing arrangements, whether intentionally or not. In many areas of intensive extractive activity, they become a prevalent component of natural and social landscapes and exert substantial impacts on social-ecological systems thus require adaptation by local communities. The community-relevant implications of informal roads go far beyond immediate impacts on the surrounding environment, but deeply affect subsistence activities, mobility, food security, personal safety and even consumer preferences of the Indigenous residents. Yet, informal roads are rarely considered as a part of the benefit negotiation process with extractive companies in Siberia. More so, the results of the study demonstrate, most effects of informal road development in remote areas are neither predicted nor monitored.

The lacking role of informal road infrastructure in benefit-sharing frameworks and negotiations determines the high uncertainty of their status and use by different local community members. While community leaders and government officials have more emphasis on benefits, including compensation payments, special access rights and privileges, ordinary hunters express more accounts of environmental degradation, access of recreational hunters and fishermen brought by extractive industrial development. As described in this paper, most arrangements, if any, around the informal roads are made based on semi-formal mechanisms of benefit-sharing (e.g., 'plea- and-take') that are highly precarious, often degrading to the locals and leading to an increased dependency of the Indigenous residents on company's paternalism [8]. However, the informality of these road networks sometimes gives some Indigenous and local residents an opportunity to 'outsmart' the companies and use roads to adapt to the changes. We found evidence of members of local communities being able to adapt to the new roads, adjust their practices and lifestyles (e.g., use of vehicles), as well as establish informal relationships around the new networks.

Informal roads in extractive regions is a widely represented, but poorly studied phenomenon. This is notwithstanding the critical, sometimes transformational role of informal road infrastructure with respect to local communities and the environment. This study only examined three communities to elucidate the nature and outline potential avenues for further research on informal roads as a part of benefit-sharing frameworks between extractive companies and Indigenous/local communities. There was no formal (economic) assessment of impacts or benefits. Therefore, there is limited ability to associate them with particular benefit-sharing arrangements. Further research might include studies in other regions with different climatic, natural, economic and governance conditions.

The focus on specific material elements of benefit-sharing, such as the informal roads, and on how individual members of local communities engage with them, allows to better understand directions in which the local environment, members of local communities and their practices of subsistence activities, mobilities and others change under the impact industrial extractive activities. Therefore, more in-depth studies are needed to understand the impacts of specific informal roads on the environment and local communities and changes in human-environment relations introduced by infrastructural development.

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