

The Arctic: The new business Hotspot or a Sustainable prosperity project of co-management?

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Abstract

The Arctic plays a key role in the global climate. As the ice retreats the current challenges concerning the environment, maritime safety, tourism and oil and gas activity will intensify even more the effects of climate change on Arctic ecosystems and communities. Climate change and modernization have thus become two intrinsically linked forces that severely alter the context in which the indigenous populations of the region sustain a livelihood (van Voorst, 2009). Local animal and plant species are of dietary importance, while hunting, fishing or foraging are all of cultural and social value. The availability of many species that the Arctic indigenous people rely on for food has become limited due to climate change and the receding ice cover. The assessment of potential impacts of resource development should to some extent rely on traditional knowledge and could benefit climate change researchers in Western academia and policy-making circles as well as help the indigenous communities to tackle the difficult task of promoting their local adaptation. A joint assessment and management on impacts issues must be performed based on mutual consent, information exchange, responsible coordination and cooperation. Social impact assessment (SIAs) serve as means of determining how and to what extent specialized social groups will become better or worse off as a result of certain externally generated actions. Assessments have been largely about indigenous people, not by them (Cochran et al, 2013:558). This is why it becomes crucial to enrich SIAs with detail and context that focus on the indigenous perspective, in which economy and culture are more closely intertwined. The benefits of the Arctic emerging economy may be seen in the creation of economic development, but it must be part of a sustainable prosperity project of co-management with triple gain to economy, environment and communities.



1. Introduction

It seems exciting to envisage the Arctic as a new business hotspot. However, it is important to realise what is below the top of this 'iceberg'. It may hide a natural resources rush that can have dramatic consequences for the development of the region.

The end of the Cold War has triggered a new process for the Arctic region as it became less militarized and a new open space was opened for entrepreneurship and economic development stimulated by political support on industrialization based on the abundance and the attractive prices of local commodities. These factors increased interest in industrial and maritime activities in the region representing an incipient and unregulated reality for the local context. Industrial and maritime activities are synonymous of risk, apart from the own risks imposed by climate change. Local environmental and social risks have been materialized into Persistent Organic Pollutants (POPs), Heavy metals, Hydrocarbon pollution, methane emissions, wastes pollution, radioactivity that are common factors affecting ecosystems and human health.

This paper aims at raising the debate about resources development and industrialization process in the Arctic in order to explore some pathways for a future prosperity project which will certainly not be performed as the business-as-usual, under the current governance regime, policies and legal framework or even the present model of development.

Arctic-specific natural ecosystems, the presence of indigenous communities and the commercial interest in the region present a layer of risks that is asseverated by specific risks posed by Climate Change. This complex range of pre-existent and new risks will certainly require an innovative model of development and governance based on the highest level of responsible exploitation, diplomacy, regulation and policy-making. Probably, this political formula has not been shaped yet, but it, may possibly become a collectively construction based on co-management and multilateral cooperation of Arctic and non-Arctic nations for a common well-being.

This is an on-going subject. A moment in history when we have the opportunity to choose the way to take, the formulas to be applied, the innovations to promote, not only in technology but

in the developmental mindset. The article employs a review of past and recent literature, face-to-face interviews with representatives of local communities and entrepreneurs. It is also the result of brainstorming with peers along 2015 and a vehicle to discuss present issues and future management strategies for designing an innovative model of Arctic development and governance based on co-management and multicultural dialogue in an attempt to achieve convergence.

2. Climate Change and Modernization

The Arctic plays a key role in the global climate. As the ice retreats the current challenges concerning the environment, maritime safety, tourism and oil and gas activity will intensify even more the effects of climate change on ecosystems and communities. Low-carbon transitions are the product of wider changes in the geographic organization of economic activity, however, are structured by the actions of firms and governments acting at multiple scales (Smil 2005, 2010).

There are also ethical dilemmas involved in this analysis. Modernity has in itself ‘construction’ and ‘destruction’ what makes ‘modernity’ an intrinsic paradox of creation and deconstruction, presenting us a serious dilemma and existential crisis. Modernity can, on one side, bring on board powerful technologies to promote well-being at the same time it can provoke a profound crisis of reality and truth. The results and fruits of modernity can be distinct for different societies, depending on their relationship with the models of development created by global and local players.

Indigenous communities in the resource-rich areas of the Arctic are increasingly exposed to a range of pre-existent risks, severe climate change impacts as well as the external pressures of development advocated by governments and its industry partners. With the discovery of vast energy and mineral resources in previously inaccessible areas of the North, the governments of Arctic littoral states are taking new measures to assert their territorial sovereignty over frozen land and the newly opened waterways. Modern infrastructure is part of the planning of the remote settlements in order to facilitate the logistics of the exploration.



Climate change and modernisation have thus become two intrinsically linked forces that severely alter the context in which the indigenous populations of the region sustain a livelihood (van Voorst, 2009). The latest ice modelling results produced by polar-orbiting satellites revealed factual evidence of significant reduction in the Arctic Sea ice since 2010 and massive ice losses in the central part of Greenland tending to asseverate until 2020. Land ice losses represent open areas for “extractivism” and sea ice loss represent new prospects for offshore oil production, mining and new marine routes available. Modernization is perhaps the main driver of all changes synthetizing causes and effects of physical and societal transformations.

In an era of globalization, the conventional paradigm of economic policy is in need of radical rethinking. Such a paradigmatic shift, however, will necessarily have to be accompanied by practical efforts to re-embed the global economic system in qualitatively new social relations and forms of political regulation, on both local and global levels (Altvater 2002:88).

We need to be particularly concerned about unilateral utopian schemes for a society to resolve the problems of modernity, mainly when these schemes reproduce the same inefficient discourse from the past. In the indigenous cultural context it will not be an easy task to conciliate a subsistence-hunting local economy with a westernised market economy stratification. Modernisation provides the benefits of a petroleum-based model of development, with the associated range of by-products and facilities the western societies consume, however indigenous populations have their native concept of development based on local perception and interpretation of nature, land, livelihood, skills, subsistence, spirituality, work and wellbeing.

Indigenous people have evolved ways of living that are well suited to vulnerable environments. Western culture have a different perspective in relation to the carrying capacity of particular lands. There is a belief that any land can be put to use and not wasted for subsistence economic activities. Land use regimes seem to be a fundamental source of conflicts that will need to be addressed by managers, governments and indigenous leaderships.

Probably, the first step to build up a sustainable development vision for the Arctic in order to progress towards a sustainable project of co-management may start with the multicultural understanding of the concept of development, by indigenous Arctic communities and western societies.



The Western concept of sustainable development has gathered strength from a variety of international declarations, conventions and academic production. The term ‘sustainability’ that is the function of Sustainable Development, entered into common usage relatively recently following the publication of the report ‘Our Common Future’ by the United Nations, Brundland Commission in 1987. The Commission defined sustainability and, in particular, sustainable development as ‘Development that meets the needs of the present generation without compromising the ability of future generations to meet their needs’ (United Nations, 1987). The Triple Bottom Line sustainability framework introduced in the mid-1990s incorporates three dimensions, commonly known as economic, social, environmental or called the three Ps: people, planet and profits.

The indigenous perspective of development has to do with the meaning of place where they have conditions to be ‘indigenous’ where they are able to earn a livelihood in their own land, practice traditional hunting and fishing, where to cultivate their social and family relations, and practice their rituals and healing.

3. Socio-Environmental Impacts at local and global levels

We commonly hear the jargon that there is not only one Arctic, but, instead, many ‘Arctics’. Environmental conditions, geological potential and accessibility, population rates, economic development and political leadership are important variants that determine different risk levels in different territories in the Arctic. The balance of risk and opportunity for the many ‘Arctics’ models of development is a very difficult point to achieve and it depends on serious political leadership and committed international cooperation by engaging Arctic and non-Arctic nations in the development process, because, in the end, whatever happens to the Arctic will affect the whole globe.

Transboundary pollution produced by natural resources exploitation and the effects of Climate Change have both global and local impacts on ecosystems and human communities. Locally speaking, Arctic ecosystems are intrinsically diverse, vulnerable and dynamic. Most part of them are highly productive providing essential ecological services for other interdependent ecosystems and human communities. A number of marine and terrestrial ecosystems are also



interdependent and have been stressed by locally- and globally-produced pollution from different geographical and sectorial sources since the start of the industrial revolution.

The Arctic seems to be vulnerable to foreign pollution due to the marine and air currents, low temperatures and geographical characteristics. According to AMAP Arctic Pollution Issues 2015, the most serious environmental stressors in the Arctic are Persistent Organic Pollutants (POPs), Brominated flame retardants (BFRs), polyfluoroalkyl substances (PFASs), Chemicals used in pesticides, Heavy metals and Radioactivity despite of the limited human development levels in Arctic areas. POPs are long lasting chemicals that pose health risks to ecosystems and human communities. They are transported long distances and deposited far from their sources of release as configuring a classic case of transboundary pollution. They tend to accumulate in the fatty tissues, milk and blood of living organisms compromising the local food chain and affecting other dependant ecosystems and human health in the Arctic local communities.

Heavy metals like mercury, methylmercury originated from mining activities from outside the Arctic Circle are also a threat to Arctic ecosystems and local communities by the cumulative effect they have in the food chain. Radioactivity is an additional great concern due to nuclear tests, transfer pathways and inadequate waste management since 1950s.

Arctic pollution levels have been monitored by AMAP since the 1990s, demonstrating that levels of POPs declined over the past 30 years, while BFRs and PFASs have increased and are a matter of concern as mercury levels and anthropogenic levels of radioactivity remain high according to AMAP assessments in 2015. Pollution monitoring activities in the Arctic have been based so far on a list of chemicals in extensive use, for more than a century, in the EU and the US, but the great concern is on potential contamination originated from unmonitored sources which impacts remain unknown.

In Greenland, the Cooperative Sheep Farmers Associations have written an open letter to the Greenlandic government, requesting that radioactive wastes from the exploration of rare earths and uranium is not thrown into the lake at Narsaq during mining operations that are planned to start in 2-years' time in the region. The majority of sheep farmers expressed their concern about the management of radioactive wastes in the settlement, but they do not believe that only being consulted will prevent the occurrence of pollution. The same situation is seen in Kuannersuit in Canada, where SIK believes that stopping uranium extraction in that location would prevent

the development of Canada. The difference between the first and the second case is that, in Canada, there is a legal framework about uranium production but in Greenland there is no legislation in place for extraction and export of uranium what drastically enhances the operational risks in comparison with the benefits awarded by this kind of activity. In both cases, the argument for moving the exploration forward is the economic appeal of jobs creation, but how long will economic development be the argument for social and environmental degradation? How long the social and environmental components of the triple bottom line, will continue to be ignored?

Traditional lands have been subject to a range of development activities including hydroelectric and irrigation dams, logging, pulp and paper mills, mining and tourism. Hydro-electric projects were reported to have affected huge areas in the Indigenous territories that were once traditional hunting and fishing areas. Mercury contamination from mining activity has made commercial or subsistence fishing substantially dangerous in the North where a number of other case studies report mercury poisoning in the local population. The quality of water is under serious analysis due to infrastructural projects.

The traditional way of life seems to be permanently disrupted as social relations were altered and family systems were broken down. The habits have also changed showing high rates of alcoholism, tobacco addiction and suicides. Other violent deaths became common occurrences lately. Entire communities have been forced to relocate to undesirable areas demonstrating the severe impacts on indigenous traditional economy. In general, we can affirm that conditions for Indigenous people were worsened because they are unable to earn a livelihood from their traditional lands, due to the competition for natural resources and because of the mismatch of their skills and abilities to gain employment from the new projects.

The “Licence To Operate” (LTO) framework for the Arctic offshore exploration is not yet established in many different Arctic environments. Over the past decades, the most part of oil and gas operations were developed onshore. Traditional companies like British Petroleum (BP), for instance, started their exploration in the Arctic in 1959, in Alaska, moving subsequently to the north coastal region. Since 1977, BP has operated Prudhoe Bay field having produced more than 12bnbblo with known indeclinable capacity for at least more 35 years of production at the North Slope that accounts for inventories estimated in more than the double of Prudhoe Bay. BP currently operates in 15 North Slope oil fields with prospects to operate

more new six fields in the following five years. In terms of offshore exploration, BP has made oil and gas discoveries in the 1980s in the Beaufort Sea and Arctic Islands of Canada which fields are in operation since 1980s until now (BP, 2014).ⁱ

In relation to the licensing process the main challenge seems to be the national regulatory systems of the applicants that present a range of contradictions, ambiguities and discrepancies creating insecurity. The case of Russia offshore exploration is conveyed as an illustration of the controversies of its licensing process and legislation, due to the fact that Russia is currently a polarizing force because of Russia's Arctic Strategy which describes the Arctic zone as a 'national strategic resource base' representing the broader framework of Russian national policy.ⁱⁱ In other words, it is patent that the current Russian state policy is to expand the resource base of the Arctic zone, representing the main Russian strategy for national economic growth in the following 50 year.

A joint assessment and management on impacts issues must be performed based on mutual consent, information exchange, responsible coordination and cooperation. These components could inform a new model of resources co-management for the region. This co-management models need to provide mechanisms of managing benefits and critical impacts like pollution and land use.

As to climatic impacts, they refer to more than just temperature and precipitation. It includes extreme events, as well as aspects of the system such as snow, ice, and circulation patterns in the atmosphere and oceans. In the Arctic, sea ice is one of the most important climatic variables. It is key indicator, and agent of climate change, affecting surface reflectivity, cloudiness. Humidity, exchanges of heat and moisture and the ocean surface, and oceans currents (AMAP, 2004).

Climate Change is rapidly transforming the Arctic environment at a speed that will affect local and global societies before than they can completely understand the physical, social and environmental alteration on course. New knowledge alone without some change of feeling and purpose will not suffice to make international cooperation the normal method of resolving conflicts in the Arctic region (LNU, Yearbook for 1933, London: LNU, pp. 25, 29, 30). The 'superstructures of law and policy' will need, at this point, to work beyond the foundations of authority to operate the quantification of environmental and human risks including components



of justice and human rights. This process will also need to count on indigenous communities' participation to provide a mutual understanding of the problem and to make them part of the solution and mainly, part of the regional development process.

The current institutions for monitoring and reporting of emissions created under the auspices of the UNFCCC and Kyoto Protocol laid important foundations to the current political and legal frameworks structural negotiations. The element continue to be co-operation and the continuous adaptation of the own institutional structures to the challenges of mitigation and adaptation. Both mitigation and adaptation became part of the risk management requiring international frameworks to set mechanisms of accountability for local and global actions.

The institutional adaptation at this transitional time would require:

- a. a clear understanding of ecological limits
- b. a more ecologically protective and cultural-oriented policy
- c. measure the effects of policy according to social and environmental parameters
- d. implement policy according to agreed norms, social values and regulation

4. Risk assessment and Environmental management

Development factors represent an important element for management. Human health and food supplies are commonly affected by environmental components, consequently there is a significant interest in assessing risks caused by change of climate, pollution and environmental changes.

Risk assessment and management are essential mechanisms for the Arctic development process because it is fundamental to identify the limits and boundaries of socio-environmental impact and resilience for the region.

In recent years, new risk assessment reports have highlighted the impact of climate change on Arctic marine and terrestrial environments. A comprehensive report on ocean acidification in the region, released by the Arctic Council, confirms that among the world's oceans the Arctic Ocean is one of the most sensitive to ocean acidification, and that Arctic marine ecosystems are highly likely to undergo significant changes as a result. Another Arctic Council report, the



‘Arctic Biodiversity Assessment’, confirms that climate change is the most important stressor for Arctic biodiversity and will exacerbate all other threats. Increased human activities such as oil exploration and shipping will place additional stress on the region’s biodiversity (UNEP Yearbook, 2013).

The Arctic environment is not uniform because there are areas of immediately viable resources recovery, areas of potential resources extraction and zones of harsh environments where resources are unlikely to be extracted in the short and medium term. This is the reason why we use to say that there is not only one Arctic but many ‘Arctics’ and the great challenge is to manage these different Arctics in terms of policies and regulation.

According to the latest reports from the Oil and Gas industry, no Oil company to date is completely confident in its expertise and technology for the particular conditions of the Arctic. Based on this, we advocate the position that no Arctic offshore drilling should be approved until a number of outstanding issues are clearly addressed like the standards for health and safety, oil spill prevention, and accurate response to incidents and accidents. We need a completed environmental impact report for the targeted areas in order to ensure the protection of the Arctic marine ecosystem and communities. It is important to achieve a balance between energy development and human and environmental protection through specific zoning and regulation but aligned to Climate Change legal framework that seems not to be considered in the recent licensing process.

Environmental management is a politicised process (Wilson and Bryant, 1997), mainly in times of globalisation and interdependency requiring some level of international co-ordination and control. Transboundary and global management has grown its importance and impact along the last decade but are still weak in regards to enforcement and overall co-ordination of measures to protect society.

In any environmental management situation there are several different views and different possible responses but the environmental manager has to try to avoid conflicts between stakeholders and minimise damage to the environment. The environmental manager deals with policy, planning, legislation, control, management and implementation (Cooper, 1995) they must also build up trust, influence opinions, establish supportive institutions, inform and create network of relations, building up bridges, strengthening the development process.

Environmental managers seem to have an unprecedented role in the current context of challenges that comprehends dealing with the pre-existent risks and tackling climate change through the dissemination of information and providing support in the adaptation process globally and locally. Since the 1970s, environmental management characteristics have evolved to far beyond the solely formal roles of assessing and managing risks to a multidisciplinary process of dealing with human-environment interaction. Until 2030, environmental management will probably continue to experience a major adaptation to an impermanent reality.

An integrated and multidisciplinary approach to management considering the whole range of components of ecosystems including human communities would consist in tackling the developmental complexity by identifying key areas of protection and their respective structures of functioning to provide important ecosystems resilience.

The Arctic operations need to be understood in terms of possibilities and limitations but mainly in terms of socio-environmental pillars of sustainability.

5. Social Impact Assessment (SIAs)

Social Impact Assessment can be defined as the process of assessing or estimating, in advance, the social consequences that are likely to follow from specific policy actions or project development, particularly in the context of appropriate national, state, or provincial environmental policy legislation. Social impacts include all social and cultural consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society. Cultural impacts involve changes to the norms, values, and beliefs of individuals that guide and rationalize their cognition of themselves and their society. While SIA is normally undertaken within the relevant national environmental policy framework, it is not restricted to this, and SIA as a process and methodology has the potential to contribute greatly to the planning process (Burdge and Vanclay, 1995 p. 59).

In general, SIA according to the Interorganizational Committee (1994) revealed to be an important tool to assist in the process of understanding and evaluating social changes and possible alternatives to tackle them. The pertinence of discussing SIA within the context of Arctic development is central due to the level of changes associated to economic exploration of natural resources in the region as well as the level of decision-making desired in this process. SIA process provides direction in (1) understanding, managing, and controlling change; (2) predicting probable impacts from change strategies or development projects that are to be implemented; (3) identifying, developing, and implementing mitigation strategies in order to minimize potential social impacts (that is, identified social impacts that would occur if no mitigation strategies were to be implemented); (4) developing and implementing monitoring programs to identify unanticipated social impacts that may develop as a result of the social change; (5) developing and implementing mitigation mechanisms to deal with unexpected impacts as they develop; and finally (6) evaluating social impacts caused by earlier developments, projects, technological change, specific technology, and government policy (Burdge and Vanclay, 1995 p. 60).

Social impact assessment (SIAs) serve as means of determining how and to what extent specialized social groups will become better or worse off as a result of certain externally generated actions. Assessments have been largely about indigenous people, not by them (Cochran et al, 2013:558).

It reduces the stress caused by uncertainty and maximize community engagement in the process of development. This is why it becomes crucial to enrich SIAs with detail and context that focus on the indigenous perspective, in which economy and culture are more closely intertwined.

CSR agenda has been pushed by international issues with the advent of globalization and the the corporations socio-environmental responsibilities. CSR for the arctic represents the opportunity of a reevaluation of the role of corporations in society (Teach, 2005:31), emphasising the contribution business makes to society (Handy, 2002).

Corporate governance is concerned with holding the balance between economic and social goals and between individual and communal goals. The corporate governance framework is there to encourage the efficient use of resources and equally to require accountability for the



stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society. (Sir Adrian Cadbury in the foreword to 'Global Corporate Governance Forum', World Bank, 2003)

This is why it becomes crucial to enrich SIAs with detail and context that focus on the indigenous perspective, in which economy and culture are more closely intertwined. The benefits of the Arctic emerging economy may be seen in the creation of economic development, but it must be part of a sustainable prosperity project of co-management with triple gain to economy, environment and communities.

6. Recommendations for a Sustainable Prosperity Project of Co-Management

A mixed strategy of adaptation and mitigation could be the beginning of an operative strategy for the Arctic being crucial to this process the multicultural understanding of each stakeholder's role in the development project by making them active parties and beneficiaries of development and prosperity. Indigenous communities must be integral part of a development project based on shared values and traditional knowledge.

Government and political decision-making must operate closer to people's lives, and decentralization has been seen as necessary for a more democratic perspective of resource development, environmental management and prosperity creation.

The negotiating process should be designed to support proactive action from stakeholders by setting pre-commitments and reciprocal offers of co-operation in terms of emissions trading, technology transfer, transboundary pollution abatement, and finance for adaptation. It is essential that climate change is fully integrated into development policies providing conditions for collective governance.

World-class Research, monitoring, information sharing on climate change impacts, risk assessment, and adaptive environmental management according to multicultural approaches can help reducing socio-environmental risks in sensitive areas. Adaptation strategies focused only on vulnerability, risk assessment and consultation procedures will not be enough. It is essential to rethink adaptation as an ongoing process focusing on resilience and measurement

of operating limits through effective and negotiated socio-environmental local and international.

The current politics of Arctic sustainable development is controversial and vague considering the Arctic's iconic status and sensitive environment. Arctic development is often politically contentious, with opposing interests and perspectives between local, national and international levels. Political support for development needs to evolve from an uncertainty for businesses seeking to invest in Arctic development project to more informative politics than just a retouch of the superficial catastrophic discourse.

The Arctic transition requires the highest level of responsible development and governance standards ever seen at global platform and the political arena can serve as a mean of pacification, conciliation of interests, and durable prosperity. Multicultural dialogue should be stimulated in pro of convergence of multidimensional interests from the Arctic and non-Arctic stakeholders.

The benefits of the Arctic emerging economy may be seen in the creation of economic development, but it must be part of a sustainable prosperity project of co-management with triple gain to economy, environment and communities. Cultural knowledge should be considered the forth pillar of sustainability.

The development of a sustainable vision that incorporates the multicultural values of indigenous polar communities would require, in practice, a democratic, collaborative format of governance inspired in authentic co-management.

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